WEB APPLICATION SYSTEM FOR NEWS REPORT

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MASTER OF SCIENCE
ADVANCED INFORMATION TECHNOLOGY

MAE FAH LUANG UNIVERSITY
2007

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A INDEPENDENT STUDY SUBMITTED TO
MAE FAH LUANG UNIVERSITY IN PARITIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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IN ADVANCED INFORMATION TECHNOLOGY

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I hopefully this outcome of independent study would be helpful to news operation of the government Public Relations Department. Finally, if this independent study had some mistake, I have to apologize and accept every comment for this occasion.

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ABSTRACT

The main objective of this independent study is to determine how to apply such Software Development Methodology as the Object Oriented Analysis and Design (OOAD) in combination with software developer tools such as NetBean IDE, Macromedia Dreamweaver and UML in developing a system for transmitting news clips through web applications. In the current situation of Broadband Internet Network development in Thailand, it was possible to use the web application in transmitting news clips to improve news reporting efficiency. It was expected that such system could replace the existing satellite news clip transmission system.

Consequently, this independent study would adopt the conditions of said broadband internet network and web application technologies in development of the so-called “Web Application System For News Report” coupled with instructions to upload files through HTML protocol as an experiment of the Form-Base file upload in HTML (Request For Comment 1867). However, the JAVA language and MySQL database technology would be implemented in developing such system, which would be undertaken under NetBean IDE and Macromedia Dreamweaver developer tools.

The target of this independent study is to enable news reporters to use the “Web Application System For News Report” in transmitting news clips through web browser on broadband internet network from various locations in the country or abroad to the central database in Bangkok. Subsequently, news editors can edit and trim the news clips as appropriate and update them into the system for broadcasting through radio and television broadcasting networks including web casting.

Keywords: News/Web Application System for News Report

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CHAPTER 1

INTRODUCTION

1.1 Overview

Nowadays, numerous news and multimedia information has extremely flow in the global communications network seems not barrier to obstruction. So to say, activity and event to be frequent occurs in every second as if the breath of all people around the world. The people desired to know how the world will be changing and affect to themselves. For these situations, reporters have become powerful, while work hard to seek news and information to quickly disseminate at all system definitely and pandemic.

In addition, information technologies revolution fast forward which it could be merged distinct communications platform work together and success. Such as, we can downstream video clips via 3G mobile phone by web solution with 3G mobile phone technologies. Video clips are easy to upload and download on the web video log as Youtube, Google video, and so on, by web application work together streaming technology. Youtube have more than 50,000 video clips display on site a day that they are moving to challenges web applications technology. All of these, it could be encouraged user free to access information any time any where. So, the legacy system could be changed to novel system.

Most of media services provider has not only one channel for distribute news and multimedia information. They would be integrated all media channels for disseminate news through out of the country in correlation time. We're looking for value added and competitive advantage of news production. Whenever, we create a news clip for present to the public normally has production cost. In order to product value added such as attractiveness and accessibility, we should be diversify news product and definitely disseminate at all media channel such as Web casting, TV and radio broadcast and mobile phone systems.

News consumers would like to know news and information in most recent and divers channel. Then they could be analyze and integrate those news by own reason to support their decisions in real life. What is believable or unbelievable? How do we do to serve what they want? News on television and radio broadcasting are very sensitive that must be true and fit on time schedule. We could not be change news content after on-air already. We can not repeat old news on broadcasting system because of the time has been changed news content would be change. Therefore, news must deal with eventual, fast and truly.

The Government Public Relations Department (PRD) is only one government media services provider which responsible to serve right information on the right time to people that accessible information. Used of information can help people to improve decision and lift their life. The Government Public Relations

Department (PRD) administrative divided into three media service segment on this following.

1. Television channel 11 Network

PRD has10 Television stations by network in to 10 regions and broadcasting

22/7, service area cover more than average 80% of Thailand and PRD also have 8 program (24/7 service) satellite televisions which cover beyond frontier of Thailand.

2. Radio Thailand

PRD has 147 radio frequencies on 8 networks through out of country cover more than average 90% of Thailand.

3. Website

PRD have Centre web site is www.prd.go.th and also have various webpage as www.thainews.prd.go.th , www.prdregion1-8.prd.go.th

Particularly on television broadcasting services, most of news clips and news contexts created by news reporters along with news event occurred that probably in Bangkok, provincials including foreign countries. News reporter would be work within news bureau. News bureau have a news reporter team's member moving around Bangkok and country side and also supported by public relations officer on every provinces through out Thailand. How do we can transfer news clip on air in the right time? Most television station used tradition news transportation to transfer news clip through satellite transponder but it's very high cost and inconvenient that effected to news express report. News reporter will be bring news clip to TV sub station that can up link and down link video file through satellite channel then transfer that video file to centre news desk in Bangkok.

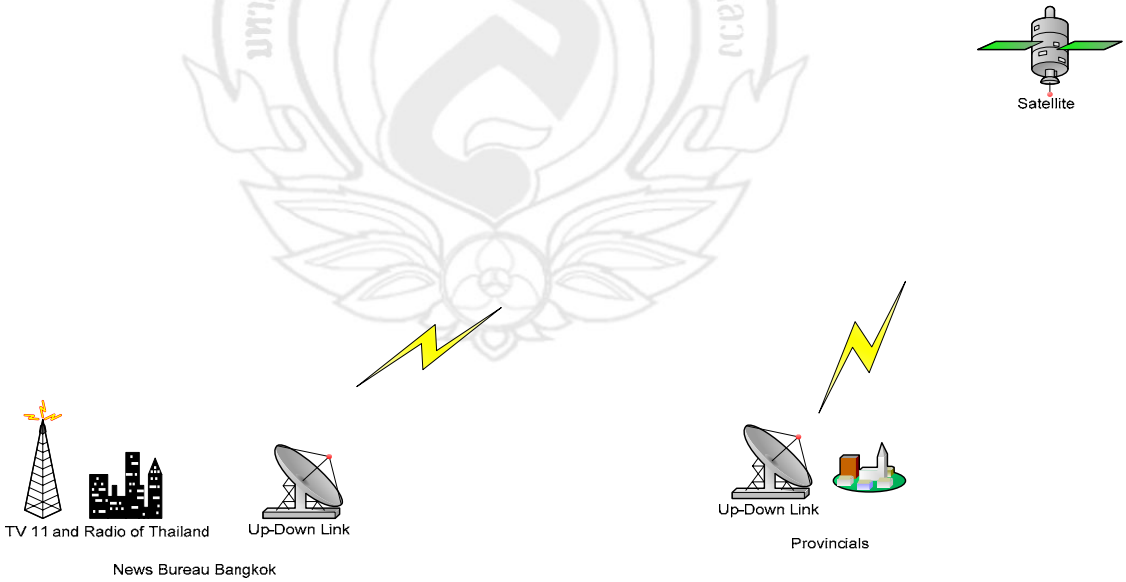

Figure 1.1 Satellite News Clips Transportation

In addition, digital innovation and new technologies such as digital video camera and digital camera are so small and more efficiency also available digital out put signal as AVI, MPEG-2, MPEG-4 standard. We can bring them to every where that easy to create news and documentaries video clips. Concurrently, Most of internet service providers have been serve ADSL hi speed internet in various countries which provide higher speed than traditional dialup internet that could be convey multimedia information.

In a recent year, internet network infrastructure has developed to hi speed internet services as ADSL internet in several provinces through out of Thailand and almost countries. ADSL Internet services provider in Thailand now provides speed 256/128 kbps to 2048/512 kbps depending on area and distance. Most of web application developer effort to develop many kinds of web applications and web casting that support multimedia role on hi speed internet. A lot of multimedia information torrent through internet network seems to be endless. Many people have been interesting on web communities that collaborate and share knowledge to develop new technologies. Variety open source software and developer tool could be downloading on internet.

Television broadcasting characteristic have been integrated to web casting, many matters in television broadcasting would be broadcasting to world wide with web casting. This is a new solution of multimedia that disseminates news and information to multi channel distributor. News transportation must be developing to web application system for news report in order to support a new role of television broadcasting. Web application system for news report will be developing by use java technologies and OOAD methodology belonging to network infrastructure. News report web applications system will be support news reporter to transfer news clip and news context via web browser over hi speed internet network.

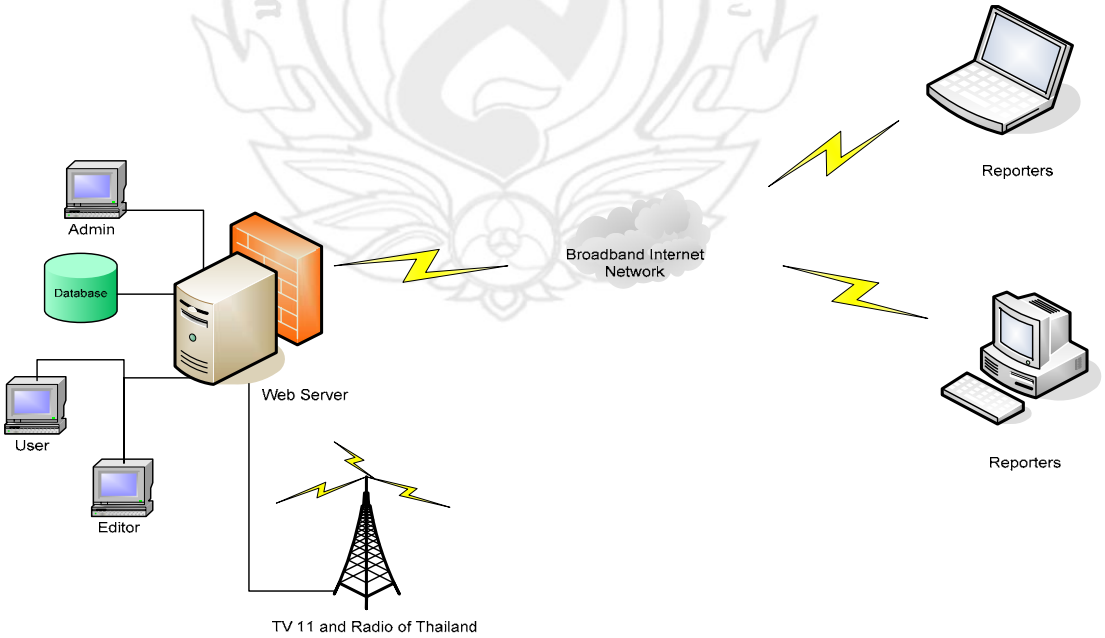

Figure 1.2 Web Application System for News Report

There are the whole reasons that promote to develop web application system for transport multimedia information through hi speed internet network and further to support news and multimedia information dissemination in diversity media services solution as a web casting, mobile phone, and WIFI in the future.

1.2 Project Objectives

The objective of this project would like to develop Web Application System for News Report upon web browser and hi-speed internet network that can support to convey huge of multimedia information to central database in Bangkok and also convenience to support reporter could be transport multimedia information any time any where.

1.3 Scope of work

This project scope will be developing web application in four main functions.

1.3.1 Editor function

Search and check a raw video clips (keep in database that uploaded by Reporter) for appropriate context then export file to editing after that update to database.

1.3.2 Reporter function

Prepare video clips and upload video clips through web application to database web server.

1.3.3 News User function

Search and download video clips that properly useful for Television broadcast and applied to Radio broadcast or Web cast.

1.3.4 System Administrator Function

Admin has a duty as system administrator to create, update, and delete users in the system.

1.4 Project Description

The procedure of web application system for news report program which it complied must be installing in web server side and could be run on Windows XP operating system or other operating system currently.

The operative of this program consist of four main function area in each task force with this following.

1. Editor part
2. Reporter part
3. News User Part
4. Admin Part

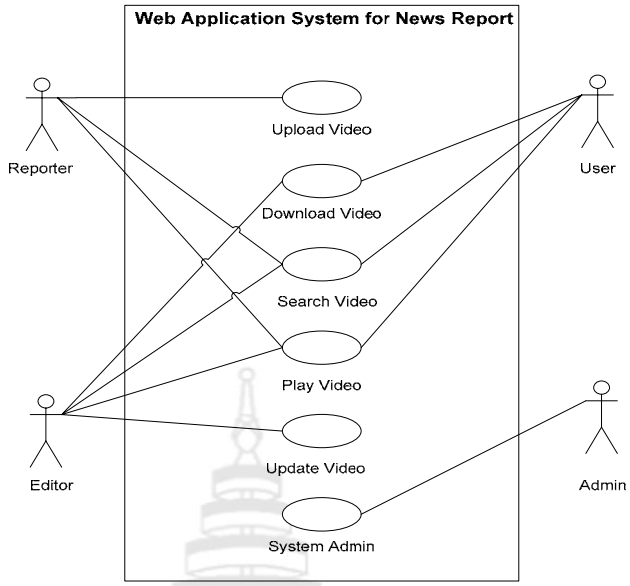

Figure 1.3 Web Application System for News Report Use Case Diagram

1.4.1 Editor Part

Editor can view on web application page consists of each fraction of graphic user interface (GUI) on this following.

1. Public Relations Department Logo and Name space in every pages
2. Login password space in the first page for news editor
3. Main page consist of news category drop down list menu on this following
    1) Royal
    2) Politics
    3) Economics
    4) Sociality
    5) Art & Culture
    6) Sport
    7) Entertainment
    8) Tourism
    9) Science & Technology
    10) Education
4. News clip picture folders display area (after choose news category menu)
5. Drop down list place menu for select news clips by source place that uploaded (76 Province & Foreign countries)
6. Video player display area for preview selected news clips (after click on news clips picture folder) in appropriate size support by Windows Media Player tool
7. Text display area for view description of news clips (beside video player area)
8. News search space for particular date
9. Download button for download selected video file to editing tool (then edited and transform format and update to database)

10. Link button to link all PRD web site (Add up)
11. Update button link to update page (seem like upload page function)
12. Update page consist of this following
    1) Browse button and source destination space for select news clips from source destination
    2) Title text space for fill title of the news clips
    3) Description text space for fill script of the news clips
    4) Drop down list category menu for select category destination in database
    5) Drop down list place menu for select source place destination in database
    6) Update Button for upload news clips to database
    7) Reset button to clear all space
13. Waiting page to waiting update the news clips
14. Alert texts to display when upload complete or incomplete
15. Including appropriate auxiliary menu function

Editor could be login via web browser from work station computer that connected by LAN network or high speed internet network as a web server administrator. This web application page should be consisting of group of news clips that completely uploaded from Reporter that keeps in database and ordering by date and time. News clips extended in various group divided by news category such as Royal, Politics, Economics, Sociality, Art & Culture, Sport, Entertainment, Tourism, Science & Technology, Education and etc. News editor could be search group of news clips by news category menu, and then select ones news clip in each category display on display area which including appropriate operate button. And it also could be operate necessary task on this following.

1. Editor could be select news clips by drop down list category menu, source place by drop down list place menu and by search menu by particular date.
2. Editor could be preview news clips in video player display area meanwhile open text file in text field area that come together with that news clips as a script of the news clips.
3. Editor could be download a selected news clips to editing tool.
4. Editor could be update and delete all news clips in database.
5. Editor could be work in enhance another appropriate feature for realistic work in the future

Editor Use case

1. Editor open web applications via web browser from computer client that connected to web server by LAN network or high speed internet net work.
2. Login to system by fill username and password in login password space.
3. Last 6 news clips picture folders show in video picture folders display area and extend pages by select next page and previous page (Depend on design)
4. Select news clips by this following
    1) Select by click on drop down list category menu (by video category)
    2) Select by click on drop down list place menu (by source place)
    3) Select by search menu on particular date.
5. Select news clips by click on video picture folder and then

6. The news clip display on video player area meanwhile description text file. of this video clip display beside on text display area (Depend on design)

7. Download news clips by click on download button.

8. Edit news clips by external editing tool (Window Movie Maker or Pinnacle)

9. Update edited the news clips to database.

10. Preview another history edited news clips.

11. Log out from system

1.4.2. Reporter Part

Reporter can view on web application page consists of each fraction of graphic user interface (GUI) on this following.

1. Public Relations Department Logo and Name space in every pages

2. Login password space in the first page for news reporter

3. Main page consist of news category drop down list menu on this following

   1) Royal
   2) Politics
   3) Economics
   4) Sociality
   5) Art & Culture
   6) Sport
   7) Entertainment
   8) Tourism
   9) Science & Technology
   10) Education

4. News clip picture folders display area(after chose on news category menu)

5. Drop down list place menu for select news clips by source place that uploaded (76 Province & Foreign countries)

6. Video player display area for preview selected news clips (after click on news clips picture folder) in appropriate size support by Windows Media Player tool

7. Text display area for view description of news clips (beside video player area)

8. News search space for particular date

9. Upload button link to upload page

10. Upload page consist of this following

   1) Browse button and source destination space for select news clip from source destination
   2) Title text space for fill title of the news clips
   3) Description text space for fill script of the news clips
   4) Drop down list category menu for select category destination in database
   5) Drop down list place menu for select source place destination in database
   6) Upload Button for upload news clips to database
   7) Reset button to clear all space

11. Waiting page to waiting upload the news clips

12. Alert texts to display when upload complete or incomplete

13. Including appropriate auxiliary menu function

Reporter could be login via web browser of computer client connected by high speed internet network. This web application page should be consisting of group of news clips that completely uploaded by reporter keep in database which ordering by date and time. News clips extended in various group divided by news category such as Royal, Politics, Economics, Sociality, Art & Culture, Sport, Entertainment, Tourism, Science & Technology, Education and etc. Reporter could be search group of news clip by news category menu, and then selected ones news clip in each category display on display area which including appropriate operate button. And it also could be operate necessary task on this following.

1. Reporter could be upload news clip by click on upload button then link to upload page

2. Reporter could be select path of video file exist in client by browse button to destination source file

3. Reporter could be previewing news clips in particular displays space.

4. Reporter could be upload news clips to database web server in MPEG-4, MPEG-2, WMV format and any more that can provide.

5. Reporter could be know estimate time to upload and how to complete or incomplete upload

6. Reporter could be attach text file together with news clips as a title , place, category and context of news clips on upload page

Reporter Use case

1. Reporter open web applications via web browser from client computer connected by hi speed internet network

2. Login to system by fill username and password in login password space

3. Preview video file in the same user page but change download button to upload button

4. Click upload button link to upload page

5. In upload page choose video file by source destination space or browse button

6. Fill title of the news clips in title text space

7. Fill context of the news clips in description text area

8. Choose category destination database by drop down list category menu

9. Choose place destination database by drop down list place menu

10. Upload news clips by click on upload button

11. Show waiting page for estimate time upload

12. Show text alert for response upload activity

13. Log out from system

1.4.3 News User part

User part can view on web application page consists of each fraction of graphic user interface (GUI) on this following.

1. Public Relations Department Logo and Name space in every pages

2. Login password space in the first page for news reporter

3. Main page consist of news category drop down list menu on this following

   1) Royal

2) Politics
3) Economics
4) Sociality
5) Art & Culture
6) Sport
7) Entertainment
8) Tourism
9) Science & Technology
10) Education

4. Support add further more in the future

5. Video player display space to view specifies news clips in appropriate side and format and also control button.

6. Display space for view news clip picture folder depends on news category menu in group of small blocks for select to display.

7. News search space for particular date

8. Download button

9. Download waiting page

10. Including appropriate auxiliary menu function

User could be login via web browser from PC connected by high speed internet network or work station computer on LAN network. This main webpage should be consisting of group of news clips that completely upload from News reporter which News editor edited and updated, ordering by date and time. News clips extended in various group divided by category as Royal, Politics, Economics, Sociality, Art & Culture, Sport, Entertainment, Tourism, Science & Technology, Education and etc. News user could be select each group by category menu, then select one news clip from news group display on display space that including appropriate operate button. And it also could be operate in necessary function on this following.

1. User could be searching particular news clips in database web server.

2. User could be playing news clips in player display space meanwhile open news context in text description area that come together with each video clip as a script of the video clip .

3. User could be download news clips from database web server.

News User Use case

1. News user open web application via web browser connected by LAN network or hi speed internet network.

2. Login to system by fill username and password in login password space

3. Select video clip by this following

1) Select by click on drop down list category menu (by video category)
2) Select by click on drop down list place menu (by source place)
3) Select by search menu on particular date

4. Last 6 news clips picture folder show in video picture folder display area and extend pages by select next page and previous page (Depend on design)

5. Select video clips by click on video picture folder and then

6. The news clips display on video player area meanwhile news context of this news clips display on text description area

7. Download news clips by click on download button.

8. Log out from system

1.4.4 Admin Part

Admin part can view on web application page consists of each fraction of graphic user interface (GUI) on this following.

1. Public Relations Department Logo and Name space in every pages
2. Login password space in the first page for news reporter
3. Main page consist of this following
   1) Create new user name and password
   2) Update user name and password
   3) Delete user name and password

Admin function is creating new users name password and also manage exist users name and password in the system.

Admin Use case

1. Admin open web application via web browser connected by LAN network or hi speed internet network.
2. Login to system by fill username and password in login password space
3. Admin chose function create or update and delete function.
4. Log out from system

1.5 Expected Benefits

Web application system for news report expected to achieves goal. It could be improve news transport system by use web application associated with high speed internet network. Further to support new technology as web casting, web video log, and digital media services in the future. This project could be gain competitive advantage of news contents on TV channel 11 including support news reporter to report express news in diverse channel any time any where. Moreover, this system will be support digital life style that many people participated which may be invited someone volunteer act as news reporter to report news clips for TV channel 11.

CHAPTER 2

FEASIBILITY STUDY

2.1 System Development Approach

Software application and system development approach has many models such as iterative development, waterfall model and cowboy coding. Principle of varieties new model system develops approach come from SDLC (System Development Life Cycle). System development life cycle is process of work that develop a system elaborates step by step. However not only system development model, most of system developments have to work together methodology, technique and tool. News reporter web applications system would be negotiate with this following and choose which one that feasibility.

2.1.1 System Development Approach

1. SDLC Model[1]
2. SDLC Water Fall
3. SDLC Adapted Water Fall
4. SDLC Evolutionary
5. SDLC Spiral

Development approaches have many models to develop software application in different case and situation. This project has consider throughout a system that not more complexity. In addition this system is an all new system design which separate from legacy system, however it is unnecessary to change any more requirement. So, I would like to choose a properly model as SDLC: Adaptive Waterfall model to develop this system that it could be meet to achieve this system.

1. SDLC Model

The System Development Life Cycle (SDLC) is a conceptual model used in project that describe the stages involved in an information system development project, from an initial feasibility study stage through maintenance of the complete application stage. Various SDLC methodologies have been developed to guide the process involved, including waterfall, Evolutional, Incremental, and spiral.

In general, an SDLC methodology follows the following steps:

1) System investigation: The existing system is evaluated and deficiencies are identified. This can be done by interviewing system users and consulting with support personnel.

2) System analysis: The new system requirements are defined. In particular, the drawbacks in the existing system must be addressed with specific proposals for improvement.

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[1]Wikipedia, **Software Development Life Cycle** [Online], Available from http://en.wikipedia.org/wiki/System_Design_Life_Cycle (13 March, 2007)

3) System design: The proposed system is designed. Project plans are laid out concerning the physical construction, hardware, operating systems, programming, communications, and security issues.

4) System development: The new system is developed. The new components and programs must be obtained and installed. Users of the system must be trained in its use, and all aspects of performance must be tested. If necessary, adjustments must be made at this stage.

5) System deployment: The system is put into use. This can be done in various ways. The new system can phased in, according to application or location, and the old system gradually replaced. In some cases, it may be more cost-effective to shut down the old system and implement the new system all at once.

6) System maintenance: Once the new system is up and running for a while, it should be exhaustively evaluated. Maintenance must be kept up rigorously at all times. Users of the system should be kept up-to- date concerning the latest modifications and procedures.

2. SDLC : Adapted Water Fall

SDLC: Waterfall is the famous and oldest process model, where developers follow these steps in order. They state requirements, analyze them, design a solution approach, architect a software framework for that solution, develop code, deploy, and maintain. After each step is finished, the process proceeds to the next step, just as builders don't revise the foundation of a house after the framing has been erected.

SDLC: Adaptive Waterfall is an applied waterfall process model which operating stage could be reverse previous or next previous stage to consider something mistake.

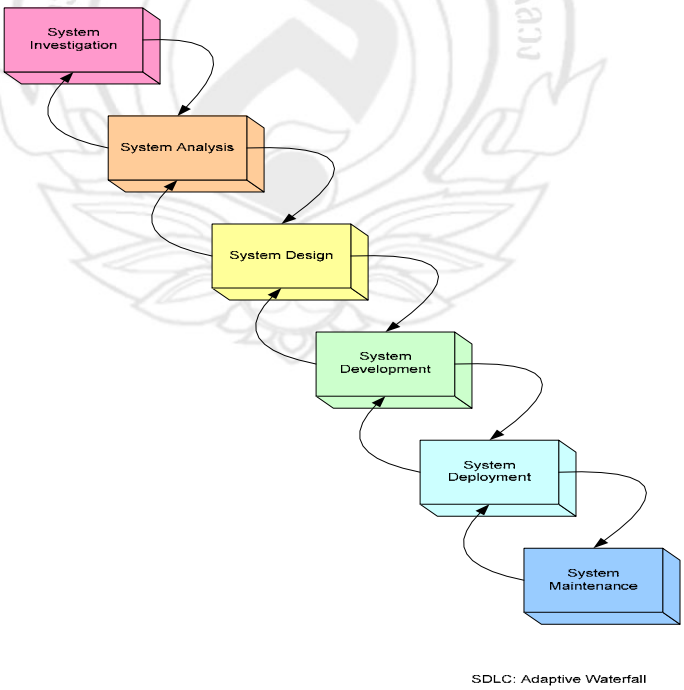

Figure 2.1 SDLC: Adaptive Waterfall

1) Advantages

I. It is very simple and easy to implement meaning it is well suited for small projects.

II. Testing is inherent to each of the phases of this model.

III. The model is rigid and each of the phases has certain deliverables and a review process immediately after a particular phase is over.

2) Disadvantages

I. It is high risk.

II. It cannot be guaranteed that one phase of this model is perfect before we move on to the immediate next phase in the model.

III. It is not suited for long or complex projects or projects where the requirements can change.

IV. The deliverable software is produced late during the life cycle.

2.2 Software Development Approach

Software development has many methodologies that supported to develop new application software. These methodologies help to organize the information and dataflow of system that related to analysis and design software structure. This news report web application system has prefers to use OOAD methodology like navigate to perform this project.

2.2.1 Software Development Approach

1. SSADM Structured System Analysis and Design Methodology
2. RAD Rapid Application Development-based Methodology
   1) Phased Development-based Methodology
   2) Prototyping-based Methodology
   3) Throw-away Prototyping-based Methodology
3. OOAD Object Oriented Analysis and Design Methodology

2.2.2 OOAD : Object Oriented Analysis and Design Methodology[2]

An object-oriented analysis and design (OOA&D) methodology is a process that contains a supporting notation for defining software, based on the concept of objects that combine structure and behavior into a single entity. This process is not necessarily linear, but it is predictable, repeatable, testable, and traceable. The OOA&D notation is a common visual definition that allows people to share knowledge about the system while minimizing ambiguity.

Object oriented methodology originated on 1960. At that time it not properly to uses for analysis the system because of system analyst generate a different standard diagram that difficult to direct understand, while difficult to transfer

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[2]SUN Micro system, **Object-Oriented Application Analysis and Design for JAVA Technology (UML)** [Online], Available From URL:http://java.sun.com /j2ee/1.4/docs /tutorial/doc/ (20 April, 2007)

The principle of OOAD is consisting of abstraction, encapsulation, modularity and hierarchy. knowledge for education. After that Grady Booch, Ivar Jacobson and James Rum Baugh are leader of system analyst collaborate to develop a standard diagram known as UML (Unified Modeling Language). However, today many popular program languages such as Java, JavaScript and C++ can support OOAD methodology.

2.2.3 Object Oriented and Software Development

Object Orientation is development methodology that looks at every thing in the real world as object. Thus, we can apply object orientation methodology to develop software by look every things in system problem domain as an object in the real world. Each object can have an element as identity and behavior. Group of an object are dependency on class that illustrate in diagram. Moreover object in class diagram should have described relation between object and class. Then we can code program from diagram and relationship.

Whole system development involved to system development life cycle. Object oriented methodology that could be applied to perform by step of system development approach such as analysis, design, and implementation.

2.2.4 OOA Object Oriented Analysis

Object oriented analysis is a method of analysis that examines requirements from the perspective of the classes and objects found in the vocabulary of the problem domain.

Object oriented analysis is views the world as objects with data structures and behaviors and events that trigger operations, or object behavior changes, that change the state of objects. The idea that a system can be viewed as a population of interacting objects, each of which is an atomic bundle of data and functionality, is the foundation of object technology and provides an attractive alternative for the development of complex systems. This is a radical departure from prior methods of requirements specification, such as functional decomposition and structured analysis and design.

2.2.5 OOD Object Oriented Design

Object oriented design is a method of design encompassing the process of object-oriented decomposition and a notation for depicting logical and physical as well as static and dynamic models of the system under design.

OOD builds on the products developed during Object-Oriented Analysis (OOA) by refining candidate objects into classes, defining message protocols for all objects, defining data structures and procedures, and mapping these into an object-oriented programming language (OOPL) (see Object-Oriented Programming Languages). Several OOD methods (Booch, Shlaer-Mellor, Buhr, Rumbaugh) describe these operations on objects, although none is an accepted industry standard. Analysis and design are closer to each other in the object-oriented approach than in structured analysis and design. For this reason, similar notations are often used during analysis and the early stages of design. However, OOD requires the specification of concepts nonexistent in analysis, such as the types of the attributes of a class, or the logic of its methods.

Design can be thought of in two phases. The first, called high-level design, deals with the decomposition of the system into large, complex objects. The second phase is called low-level design. In this phase, attributes and methods are specified at

the level of individual objects. This is also where a project can realize most of the reuse of object-oriented products, since it is possible to guide the design so that lower-level objects correspond exactly to those in existing object libraries or to develop objects with reuse potential. As in OOA, the OOD artifacts are represented using CASE tools with object-oriented terminology.

2.2.6 OOP Object Oriented Program (Implement)

Object oriented programming is a method of implementation in which programs are organized as cooperative collections of objects, each of which represents an instance of some class and whose classes are all members of a hierarchy of classes united via inheritance relationships.

Object-oriented programming (OOP) is a programming paradigm that uses abstraction to create models based on the real world. It utilizes several techniques from previously established paradigms, including modularity, polymorphism, and encapsulation. Even though it originated in the 1960s, OOP was not commonly used in mainstream software application development until the 1990s. Today, many popular programming languages (such as Java, JavaScript, C#, C++, Python) support OOP.

Object-oriented programming's roots reach all the way back to the creation of the Simulate programming language in the 1960s, when the nascent field of software engineering had begun to discuss the idea of a software crisis. As hardware and software became increasingly complex, how could software quality is maintained? Object-oriented programming in part addresses this problem by strongly emphasizing modularity in software.

Object-oriented programming may be seen as a collection of cooperating objects, as opposed to a traditional view in which a program may be seen as a collection of functions, or simply as a list of instructions to the computer. In OOP, each object is capable of receiving messages, processing data, and sending messages to other objects. Each object can be viewed as an independent little machine with a distinct role or responsibility.

Object-oriented programming is intended to promote greater flexibility and maintainability in programming, and is widely popular in large-scale software engineering. By virtue of its strong emphasis on modularity, object oriented code is intended to be simpler to develop and easier to understand later on, lending itself to more direct analysis, coding, and understanding of complex situations and procedures than less modular programming methods.

Object Oriented Program is a detail of process to develop the system that reliable to use. This is program coding step. After finished to coding program and final test to ensure the system has defect less. Object oriented software development capable to reduce maintenance computer program from structure approach.

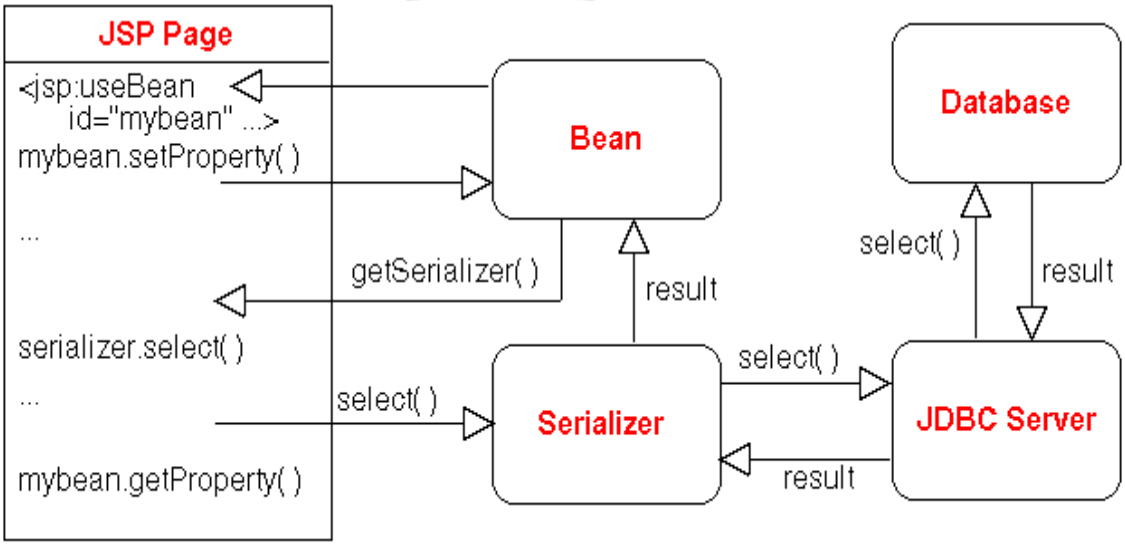
2.3. JAVA and Software Architecture

JAVA software development architecture is construct in to five part, the first ones is part of client that is outside equipment that communicate the system with HTML protocol, the second ones is part of JSP[3] (Java Server Page) that is a technology that lets you mix regular, static HTML with dynamically-generated

HTML, the third ones is part of servlet are technology's answer to CGI programming, the fourth ones is part of java bean that is component model which enables developers to create software units called components and the last ones is database.

2.3.1 JAVA and Software Architecture

1. HTML and RFC 1867
2. JSP (Java Sever Page)
3. Java Servelet
4. Java Bean
5. MySQL Database



Figures 2.2 Java Software Architecture

The system is built with some Java Beans linked to the database via a serializer (JdbcBeanSerializer). Each bean is a "mirror" of a table in the database, its properties are strictly equivalents (same name, same type) to the table colums. The serializer is in charge to build the SQL request depending on the values of the bean properties, it use a JdbcServer to send the request to the database (The JdbcServer manage a pool of persistent connections to the database). The serializer read the result and fills the bean(s) with the collected values. Then the jsp pages use the serializer as an iterator and read the bean properties.

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[3]W3C, JSP, **Beans and Databases** [Online], Available from http://www.w3c.org/Jigsaw/Doc/Programmer/jspdb.html (13 March, 2007)

2.3.2 HTML and RFC 1867[4]

HTTP is a request/response protocol between clients and servers. The originating client, such as a web browser, spider, or other end-user tool, is referred to as the user agent. The destination server, which stores or creates resources such as HTML files and images, is called the origin server. In between the user agent and origin server may be several intermediaries, such as proxies, gateways, and tunnels.

An HTTP client initiates a request by establishing a Transmission Control Protocol (TCP) connection to a particular port on a remote host (port 80 by default; see List of TCP and UDP port numbers). An HTTP server listening on that port waits for the client to send a request message.

Upon receiving the request, the server sends back a status line, such as "HTTP/1.1 200 OK", and a message of its own, the body of which is perhaps the requested file, an error message, or some other information.

Resources to be accessed by HTTP are identified using Uniform Resource Identifiers (URIs) (or, more specifically, URLs) using the http: or https URI schemes. The RFC (Request for Comments) series contains technical and organizational documents about the Internet, including the technical specifications and policy documents produced by the Internet Engineering Task Force (IETF). RFC 1867 is describing a form-based file upload in HTML. The RFC 1867 HTML forms with file submission is a recommend to current HTML specification that defines as eight possible values for the attribute type of an input: Check Box, Hidden, Image, Password, Radio, Reset, Submit, and Text. In addition it defines the default encrypt attribute of the form element using the post method to have the default value.

2.3.3 JSP (Java Server Page)[5]

JavaServer Pages (JSP) technology provides a simplified, fast way to create web pages that display dynamically-generated content. The JSP specification, developed through an industry-wide initiative led by Sun Microsystems, defines the interaction between the server and the JSP page, and describes the format and syntax of the page.

JSP pages use XML tags and scriptlets written in the Java programming language to encapsulate the logic that generates the content for the page. It passes any formatting (HTML or XML) tags directly back to the response page. In this way, JSP pages separate the page logic from its design and display.

JSP technology is part of the Java technology family. JSP pages are compiled into servlets and may call JavaBeans components (beans) or Enterprise JavaBeans components (enterprise beans) to perform processing on the server. As such, JSP technology is a key component in a highly scalable architecture for web-based applications. JSP pages are not restricted to any specific platform or web server. The JSP specification represents a broad spectrum of industry input.

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[4]Nebel & Masinter Experimental, **RFC 1867 Form-base file upload in HTML** [Online], Available from http://rfc.net/rfc1867.html (13 March, 2007)

[5]SUN Micro System, **J2EE1.4 Tutorial, J2EE1.3 Tutorial** [Online], Available from http://java.sun.com (13 March, 2007)

2.3.4 Java Servlet

As soon as the Web began to be used for delivering services, service providers recognized the need for dynamic content. Applets, one of the earliest attempts towards this goal, focused on using the client platform to deliver dynamic user experiences. At the same time, developers also investigated using the server platform for this purpose. Initially, Common Gateway Interface (CGI) scripts were the main technology used to generate dynamic content. Though widely used, CGI scripting technology has a number of shortcomings, including platform dependence and lack of scalability. To address these limitations, Java Servlet technology was created as a portable way to provide dynamic, user-oriented content.

A servlet is a Java programming language class used to extend the capabilities of servers that host applications accessed via a request-response programming model. Although servlets can respond to any type of request, they are commonly used to extend the applications hosted by Web servers. For such applications, Java Servlet technology defines HTTP-specific servlet classes. The javax.servlet and javax.servlet.http packages provide interfaces and classes for writing servlets. All servlets must implement the Servlet interface, which defines life-cycle methods. When implementing a generic service, you can use or extend the GenericServlet class provided with the Java Servlet API. The HttpServlet class provides methods, such as doGet and doPost, for handling HTTP-specific services.

2.3.5 JAVA Bean

JavaBeans is a portable, platform-independent component model written in the Java programming language. The JavaBeans architecture was built through a collaborative industry effort and enables developers to write reusable components in the Java programming language.

With the JavaBeans API you can create reuse able, platform-independent components. Using JavaBeans-compliant application builder tools, you can combine these components into applets, applications, or composite components.

JavaBeans components are known as beans. Beans are dynamic in that they can be changed or customized. Through the design mode of a builder tool, you use the property sheet or bean customizer to customize the bean and then save (persist) your customized beans.

2.4 MySQL Database[6]

MySQL is open source SQL database management system developed distributed, supported by MySQL AB. MySQL AB is a commercial company founded by MySQL developers that second generation open source company that united open source value and methodologies with a successful company.

MySQL is database management system that a data is a structured of data. It may be any thing from shopping list to picture gallery, several data or vast amount of information in corporate network. To add, access, and process data stored in computer database. You need database management system such as MySQL server.

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[6]MySQL, **MySQL Documentation** [Online], Available from http://dev.mysql.com/doc/ (13 March, 2007)

MySQL is a relations database management system. A relations database stored data in separate table rather than putting all the data in one big storeroom. That could be adds speed and flexibility. The SQL part of “MySQL” stand for “Structured Query Language”. SQL is the most standardized language used to access database and is defined by ANSI/ISO SQL standard. The SQL standard has been involving since 1986 and several versions exist. And also MySQL is open source that it is possible for anyone to use and modify the software which everyone can download the MySQL software from the internet and use it without paying anything. My SQL server works as a server/client or embedded system. That consists of a multi-threaded SQL server which supports different backend, several client programs and libraries, administrative tools, and a wide range of application programming interface. MySQL as embedded multi-threaded library could be link in to your application to get a smaller, faster easier to manage stand alone product.

2.4.1 MySQL Project Table Command

MySQL command is a simple the same as another database management system such as create, delete, insert, select, drop, load, show and reset that is necessary command to access to database. This next is some of command that related this project.

```
CREATE TABLE user_type
(           num_type   int(2)," +
          "name_type  varchar(10)," +
"CONSTRAINT PRIMARY KEY (num_type) );
INSERT into user_type(num_type,name_type) values(1,'Reporter');
INSERT into user_type(num_type,name_type) values(2,'User');
INSERT into user_type(num_type,name_type) values(3,'Editor');
INSERT into user_type(num_type,name_type) values(4,'Admin');
CREATE TABLE status
(           statusId int(1) NOT NULL auto_increment," +
          "statusname varchar(11) default NULL," +
"PRIMARY KEY  (statusId) );
insert into status(statusId,statusname) values(1,'Male');
insert into status(statusId,statusname) values(2,'Female');
CREATE TABLE user_news
("+           "user_id      varchar(15),"+
              "password     varchar(15) not null,"+
              "firstname    varchar(30),"+
              "lastname     varchar(30),"+
              "age          int(2),"+
              "adds         varchar(50),"+
              "tel          int(20),"+
              "position     varchar(30),"+
              "num_type     int(2),"+
              "statusId     int(1),"+
              "CONSTRAINT PRIMARY KEY (user_id),"+
              "CONSTRAINT FOREIGN KEY (num_type) REFERENCES
               user_type(num_type)   "+
```

```
            "ON DELETE RESTRICT "+
            "ON UPDATE CASCADE,"+
            "CONSTRAINT FOREIGN KEY (statusId) REFERENCES
              status(statusId)  "+
            "ON DELETE RESTRICT "+
            "ON UPDATE CASCADE )");
INSERT into user_news(user_id,password,firstname,lastname,age,adds,tel," +
             "position,num_type,statusId) "+
             "values('admin','1234','admin','admin',23,'123456/777'," +
             "'099123213','computer',4,1);
CREATE TABLE catalog_type
("+"catalog_id   int(2),"+"catalog_name varchar(30),"+"CONSTRAINT PRIMARY
KEY (catalog_id)"+");
INSERT into catalog_type(catalog_id,catalog_name) values(1,'Royal');
INSERT into catalog_type(catalog_id,catalog_name) values(2,'Political');
INSERT into catalog_type(catalog_id,catalog_name) values(3,'Economics');
INSERT into catalog_type(catalog_id,catalog_name) values(4,'Sociality');
INSERT into catalog_type(catalog_id,catalog_name) values(5,'Art & Culture');
INSERT into catalog_type(catalog_id,catalog_name) values(6,'Sports');
INSERT into catalog_type(catalog_id,catalog_name) values(7,'Entertainment');
INSERT into catalog_type(catalog_id,catalog_name) values(8,'Tourism');
INSERT into catalog_type(catalog_id,catalog_name) values(9,'Science &
Technology');
INSERT into catalog_type(catalog_id,catalog_name) values(10,'Education');
INSERT into catalog_type(catalog_id,catalog_name) values(11,'Others');
CREATE TABLE place_type
( "+"place_id   int(2), "+"place_name  varchar(30), "+
"CONSTRAINT PRIMARY KEY (place_id));
INSERT into place_type(place_id,place_name) values(1,'Bangkok');
INSERT into place_type(place_id,place_name) values(2,'Nonthaburi');
INSERT into place_type(place_id,place_name) values(3,'Patumthani');
        “                                                “
INSERT into place_type(place_id,place_name) values(77,'Foreign Countries');
CREATE TABLE Data_News
( "+        "data_id      int(10),"+
            "mov_link     varchar(15),"+
            "title        text,"+
            "description  text,"+
            "catalog_id   int(2),"+
            "place_id     int(2),"+
            "CONSTRAINT PRIMARY KEY (data_id),"+
            "CONSTRAINT FOREIGN KEY (catalog_id) REFERENCES
             catalog_type(catalog_id) "+
            "ON DELETE RESTRICT "+
            "ON UPDATE CASCADE, "+
            "CONSTRAINT FOREIGN KEY (place_id)   REFERENCES
              place_type(place_id)    "+
```

```
            "ON DELETE RESTRICT "+
            "ON UPDATE CASCADE );
CREATE TABLE upload
(upload_id   int(10),upload_date  date, " +      "CONSTRAINT PRIMARY KEY
(upload_id));
CREATE TABLE upload_list
( "+
            "upload_id      int(10), "+
            "data_id        int(10), "+
            "user_id        varchar(15), "+
            "num_update     int(2), "+
            "CONSTRAINT PRIMARY KEY (upload_id,data_id,user_id), "+
            "CONSTRAINT FOREIGN KEY (upload_id) REFERENCES
             upload(upload_id) "+
            "ON DELETE CASCADE "+
            "ON UPDATE CASCADE, "+
            "CONSTRAINT FOREIGN KEY (data_id)   REFERENCES
             data_news(data_id) "+
            "ON DELETE RESTRICT "+
            "ON UPDATE CASCADE, "+
            "CONSTRAINT FOREIGN KEY (user_id)   REFERENCES
             user_news(user_id) "+
            "ON DELETE RESTRICT "+
            "ON UPDATE CASCADE );
```

2.5. Asymmetric Digital Subscriber Line (ADSL)[7]

Asymmetric Digital Subscriber Line (ADSL) is a form of DSL. ADSL is data communication technologies that can provide higher bit rate transmission on copper telephone lines than conventional dial-up modem. It does by utilizing higher frequencies that not use by normal voice telephone. This higher frequencies signal will not traveling very far over normal telephone line, so ADSL can be used short distance, typically not over 5 Kilometers. When ADSL signal reach to telephone company this signal is stripped off into conventional internet network, while any voice frequencies is switched into conventional telephone network. This allows a single telephone connection to be used for both ADSL and voice calls at the same time.

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[7]Wikipedia, **Asymmetric Digital Subscriber Line** [Online], Available from http://en.wikipedia.org/wiki/ADSL (13 March, 2007)

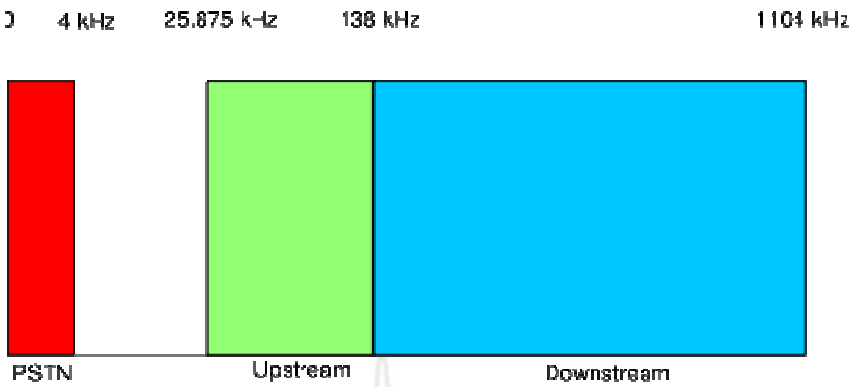

Figure 2.3 ADSL frequencies Spectrum

Asymmetric Digital Subscriber Line (ADSL) characteristic is asymmetry of volume data flow that provides volume down stream data flow greater than up stream data flow. Providers usually market ADSL as a service for people to connect to the Internet in a relatively passive mode: able to use the higher speed direction for the "download" from the Internet but not needing to run servers that would require bandwidth in the upload direction. There are both technical and marketing reasons why ADSL is in many places the most common type offered to home users.

Thailand is now providing Asynchronous Digital Subscriber Line (ADSL) and internet services provider's situation could be provide download/upload speed from 256/128 Kbps to 2048/512 Kbps. A major ISP in Thailand is TOT, CAT and NECTEC all those consisting of TOT-ISP, True Internet, KSC, Samart, ISSP, Internet Thailand, CSLoxinfo, CAT-ISP, UniNet and ICT. True Corp is providing telephone infrastructure network in Bangkok, TT&T provide telephone network on provincial area and another one is TOT is older state enterprise that provide telephone infrastructure trough out of Thailand. However most of them could be provide ADSL internet services base on their infrastructure network.

Table 2.1 DSL Form

DSL Form	Down	Up	Mode	Distance	Wire	Voice
HDSL	1.5 Mbps	1.5 Mbps	Symmetric	3.6 Km	4	Non
SDSL	1.5 Mbps	1.5 Mbps	Symmetric	3 Km	2	Non
IDSL	128 Kbps	128 Kbps	Symmetric	4.5 Km	2	Non
ADSL	8 Mbps	1 Mbps	Asymmetric	5 Km	2	Yes
VDSL	54 Mbps	2.3 Mbps	Asymmetric	1 Km	2	Yes

CHAPTER 3

SYSTEM ANALYSIS AND DESIGN

3.1 Traditional System and IT Approach

Traditional news transport satellite system (See Figure 1.1) has carried out news video clip from every province in Thailand uplink through satellite transponder to news bureau in Bangkok then broadcast on TV 11 or Radio Thailand. All of news video clips have produced in various file format and capacity, such as MPEG 2, MPEG 4, WMV and AVI which capacity average 100 Mb to 300 Mb. Some time, News reporters have been going to foreign country to report news as well.

Video productions processes begin with reporter capture news video clip from several areas, then came back to office and edited that video clip also insert audio script. After that, reporters bring this video tape to up link video signal from TV substation to news bureau in Bangkok. Otherwise, if reporters far from TV substation they could be sent video file through internet network by FTP protocol to TV substation and then TV substation retransmit to news bureau in Bangkok. Some time, reporter directly transfer video file through internet network to Bangkok. Navertheless, this method not be a web application which affected at receiver side. The problem has ocurred that receiver confuse destination of video file and also could not be found that video file.

Nowadays, internet network services provider has provided broadband hi-speed internet services around the world and including Thailand. Many people could be easy to access to hi-speed internet any time any where. Various Video clips have been sending through internet network to serve entertainment services. There for, we would like to develop new system “web application system for news report” (See Figure 1.2) to transport news video file from serveral place to news bureau in Bangkok as anew way that easier and convenience.

3.2 System Requirement

Web Application System for News Report has been interviewed news reporters, news editor and news users to kept requirement information from operation site. News reporter would like to immediately report news on site to center database at Bangkok in properly way that extend from conventional system. News editor would like easy to downlod video file then edit and update to video database system that prepared to broadcast as manageable the system. News user would like easy to search such news video file from video database after that preview and download to broadcast on TV system.

Because of character of news should be disseminate on the right time at the right channel and reliability also news clip is not so long. Accordingly, we try to

search information on internet and another place to support our decision to design a new system. In addition, we have been interesting video log technology on diversity website that provides users upload video file to broadcast on the internet network. More over, we have been regarding on broadband internet network environment that support users to act as upload and download media file through internet network. So that, news video file will probability send through internet network to improve news transportation system. The new system will be requiring on this following.

1. This system will be web application use to transport news video clip attached news title, news category, and news description from several places to news database in Bangkok through broadband internet network as ADSL.
2. This system shall be easy to use upload and download video file and easy to manage video file at the server side such as video database and user database.
3. This system shall be support video file format that use in TV broadcasting system such as AVI, WMV, MPEG 2, and MPEG 4.
4. This system shall be use for HTML protocol to transfer file upload and download.
5. This system shall be extending develop in the future.

3.3 System Analysis

Web Application System for News Report is a new system that we would like to meet news transportation objective. However this new system did not related work with legacy system. New system will develop regarding HTML protocol and work on web browser. We have to defining function of news report system in a new role to improve flow of work. So that, we can define people whose participate on news transpotation system in four players. The first ones is reporter who is produce a news video clip, the second ones is editor who is edit and update all news video clip in the system and the third ones is user who is download news video clip to broadcast on TV and Radio system. Further more, this system must be consisting of system administrator to manage all users in the system as admin user.

We have preferred to apply Object Oriented Analysis and Design (OOAD) methodology use to develop this system. Because of it's visible to describe all users' activities by use case diagram and class diagram. While developer could be conforming use case description to design database, application and user interface.

First of all developer would like to define News Report Web Application system by use case diagram (See Figure 1.3) and use case description form to describe user's activity and system functions.

3.3.1 Use case Description form

Use case description form is tables that define all functions of the system also describe how many kinds of people coud be act to each functions. Example, this system should have six functions as upload, download, update, search and play video in the system and also the system should have system administration. The useful of this form will help developer to endsure that the system doesn't miss communicate between objects and work flow of the system. Inaddition developer could be used this form to accurate design database diagram.

Table 3.1 Upload Video Use Case Description

Use Case Title : Upload Video	**Use Case ID** : 1
Primary Actor : Reporter **Stake Holder Actor** : Editor	
Main Flow: Web Application System for News Report consists of 4 actors. The first ones is reporter do function upload video file from several place to database. The second ones is editor do function check and download video file from database and then edit and update video file to database. The third ones is news user do function download video file from database to broadcast on TV and Radio network. The last one is system administator do function create, modify and remove users in this system. Reporter will be upload video file from online computer client in several areas through broadband internet network to central database in Bangkok. Reporter must login to system that authenticate username and password before perform their function. Reporter must be fill video description in all attribute of video upload form. Video file may consist of video title, video category, upload place, video description, and upload date. Upload process will be indicate active and execute response.	
Exception Flow 1: Actors invalid that did not fill or fill wrong user name and password in login page, the system response access denied and suggest contact system administrator.	
Exception Flow 2: Actors did not complete fill video description in all attribute of video upload form. The system response suggestion that must be fill all attribute before upload.	

Table 3.2 Download Video Use Case Description

Use Case Title : Download Video	**Use Case ID** : 2
Primary Actor : NewsUser **Stake Holder Actor** : Editor	
Main Flow: NewsUser will be search and select video file in central video database by click on video picture folder then video clip preview on video player belonging to video description text area. User could be search video file by video category, place, and upload date. After that select which ones to preview and download expected video file. All users must login to system before perform their function.	
Exception Flow 1: Actors did not fill user name and password or fill wrong user name or password. System will be response access denied and suggest contacting system administrator.	

Table 3.3 Search Video Use Case Description

Use Case Title : Search Video	**Use Case ID** : 3
Primary Actor : News User **Stake Holder Actor** : Editor, Reporter	
Main Flow: News user is a major role to search news then choose appropriate news for download to broadcast on TV and Radio network. Search feature in particular video clip by news category, news place and news date. And also Editor and Reporter can search in the same function to preview and check all of news clip. All users must log in the system before perform their function.	
Exception Flow 1: Actors did not fill user name and password or fill wrong user name or password. System will be access denied and suggest contacting system administrator.	

Table 3.4 Play Video Use Case Description

Use Case Title : Play Video	**Use Case ID** : 4
Primary Actor : User **Stake Holder Actor** : Editor, Reporter	
Main Flow: News user, news editor and news reporter can select which news video clip to preview on video player. News player function could be related to search function after search and select which ones video clip after that video clip will be play on video player. All users must login to the system before perform their function.	
Exception Flow 1: Actors did not fill user name and password or fill wrong user name or password. System will be access denied and suggest contact system administrator.	

Table 3.5 Update Video Use Case Description

Use Case Title : Update Video	**Use Case ID** : 5
Primary Actor : Editor **Stake Holder Actor** :	
Main Flow: News editor can search all news video clips in video central database and select which ones to download and edit with editing tool outside the system. After that update that news edited video clip in to database. All users must log in the system before perform their function.	
Exception Flow 1: Actors did not fill user name and password or fill wrong user name or password. System will be access denied and suggest contact system administrator.	

Table 3.6 System Admin Use Case Description

Use Case Title : System Admin	**Use Case ID** : 6
Primary Actor : Admin **Stake Holder Actor** :	
Main Flow: System admin could be create, modify, and remove user profile that permission or prohibit user actor access to system. Administrator would be assigned username and password to serve a new user use to login this system such as news user, news editor, and news reporter. And also system admin can search all users to manage users profile, username and password. User admin must be login to system before perform their function.	
Exception Flow 1: Actor did not fill user name and password or fill wrong user name or password. System will be access denied and suggest contact system adminstrator.	

3.3.2 Workflow Diagram

All of use case diagram and actors can be defining work flow on this following step and see figure 3.4.

1. Reporter first login to system and do search, upload and preview function after success their functions then log out from system.
2. User first login to system and do search, preview and download function after success their functions then log out from system.
3. Editor first log in to system and do search, preview, download, and update function after success their functions then log out from system.
4. Admin first log in to system and do create, update and remove username and password of all users. After success their functions then log out from system.

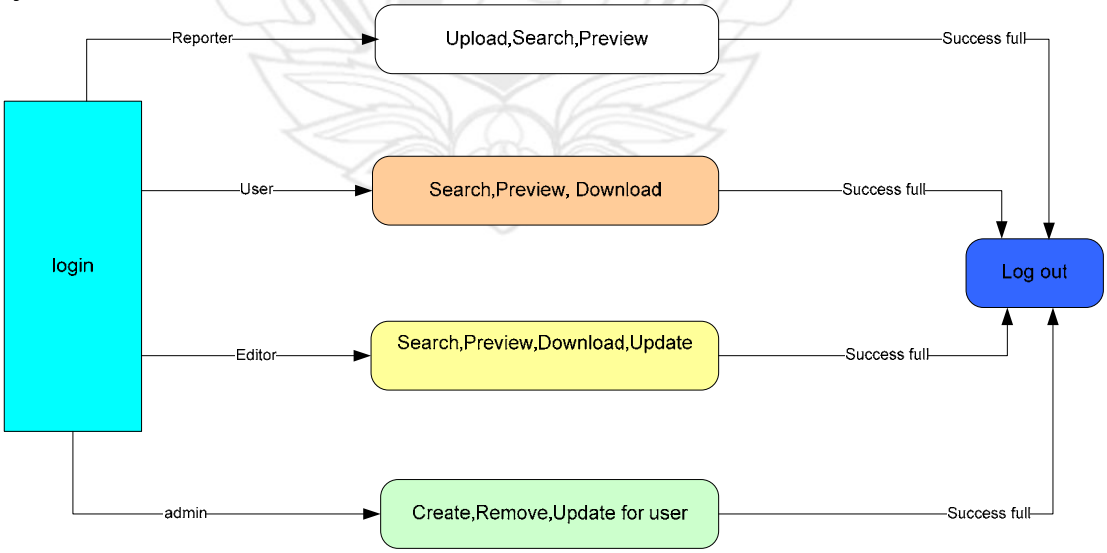

Figure 3.1 Workflow Diagram

3.3.3 Class Diagram

After define all of use case diagram we can capture words in each use case to design class diagram that describe task relations between object in the system.

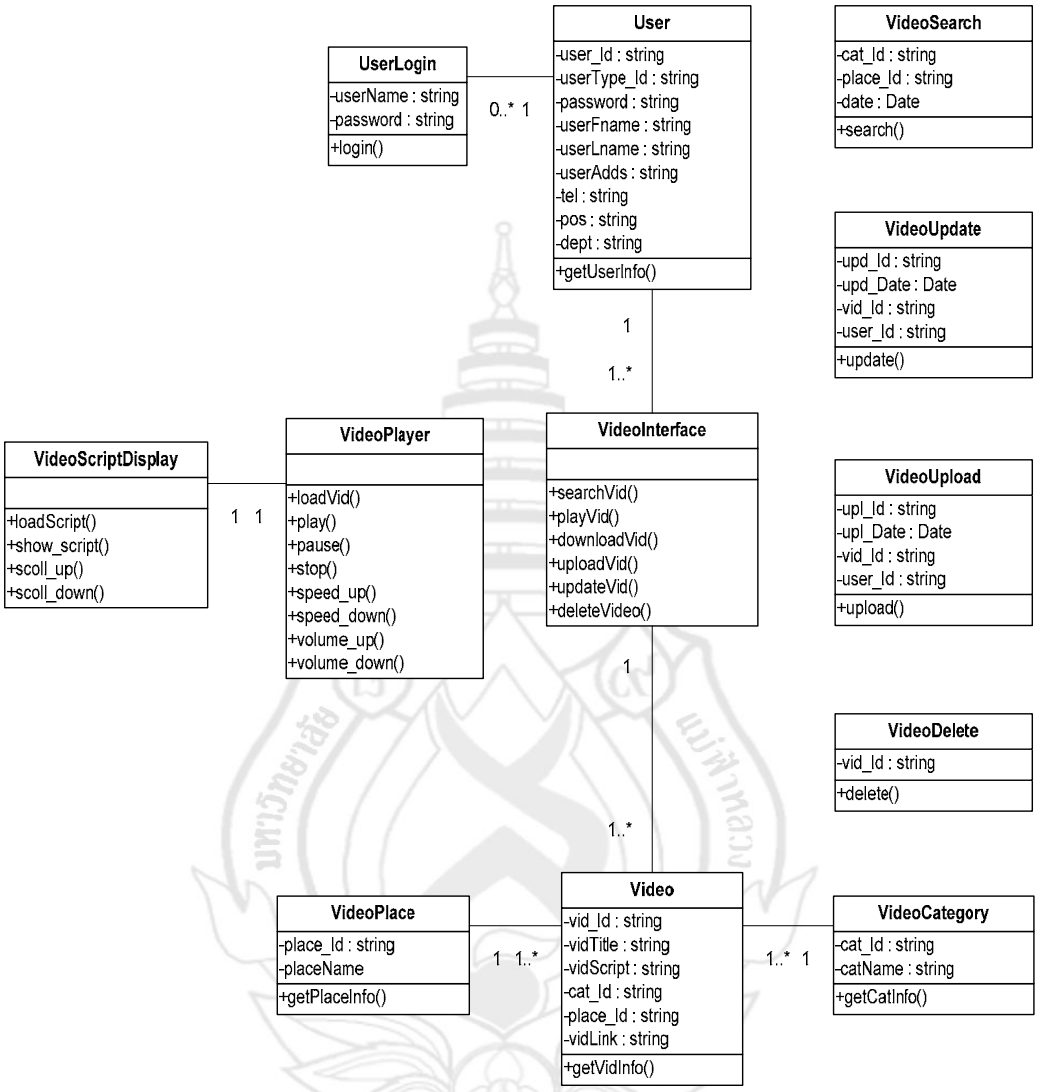

Figure 3.2 Class Diagram

3.3.4 Users Activity Diagram

Activity diagram has been defined sequence all users that activate on this system. News Reporter, News Editor, News User, and Admin could be login to access the system and do the task finaly log out from the system.

All users will be beginning with log in page for access to system. Then system has to validate username and password. If user has been validated, user would allow using system and performing their functions such as manage user profile, video file upload, download and documentaries in database. Whenever, users finished their task they will be log out from system.

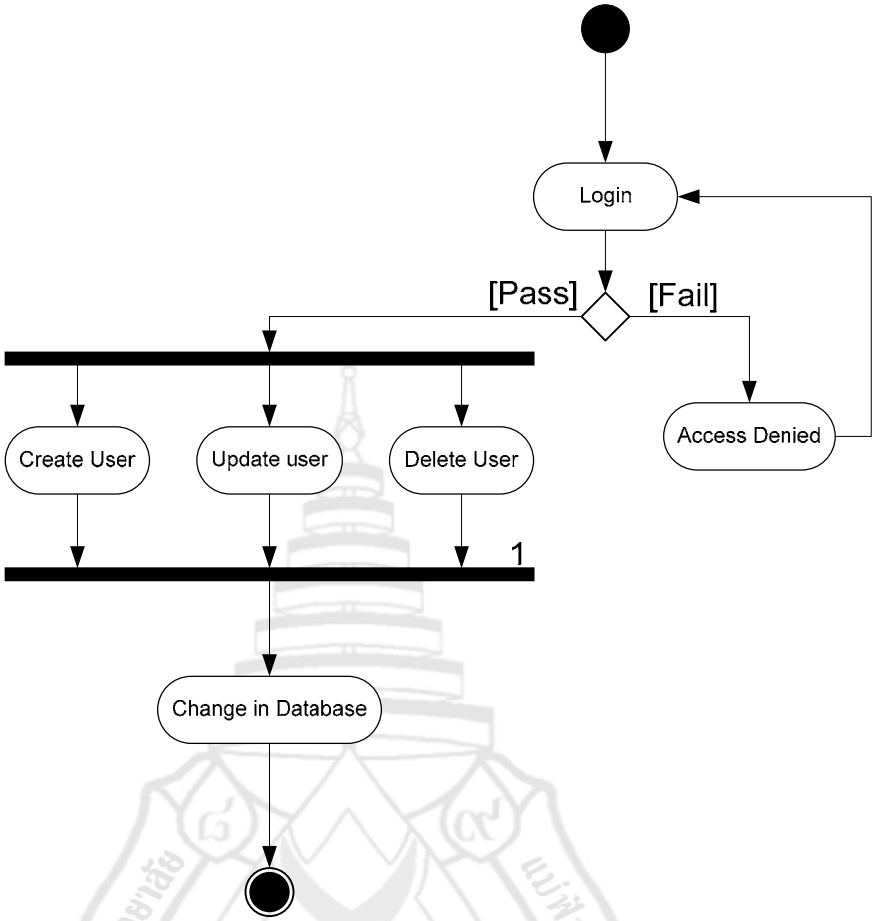

Figure 3.3 Admin Activity Diagram

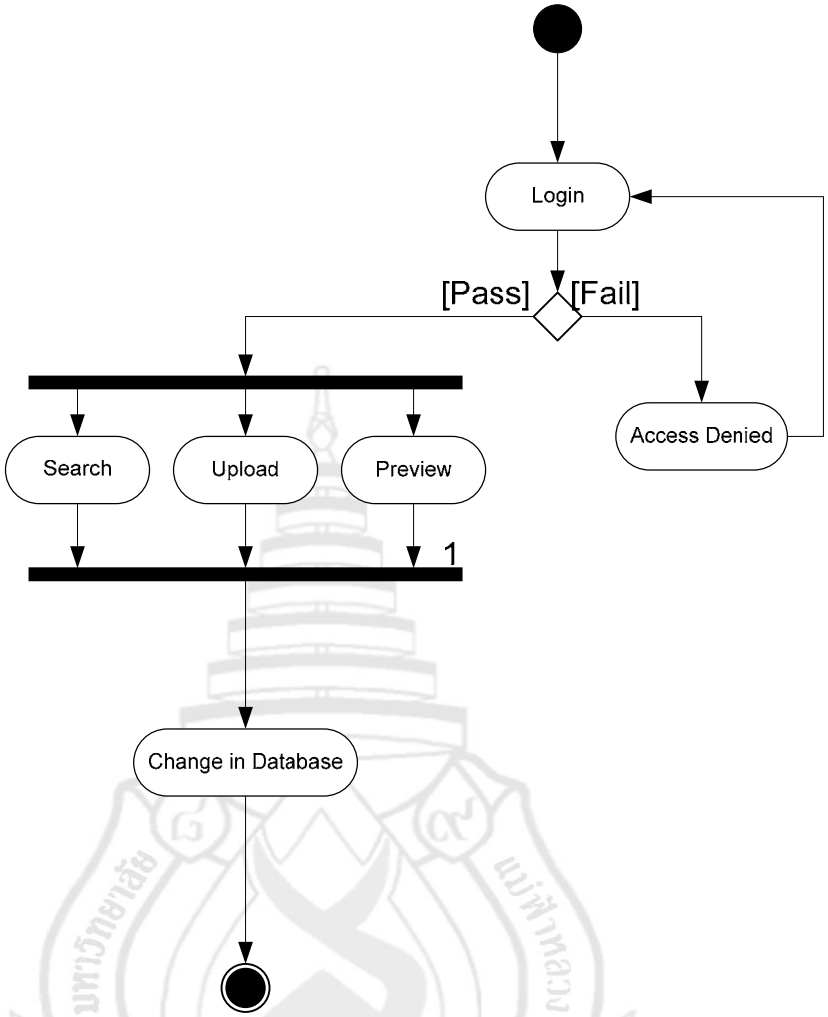

Figure 3.4 Reporter Activity Diagram

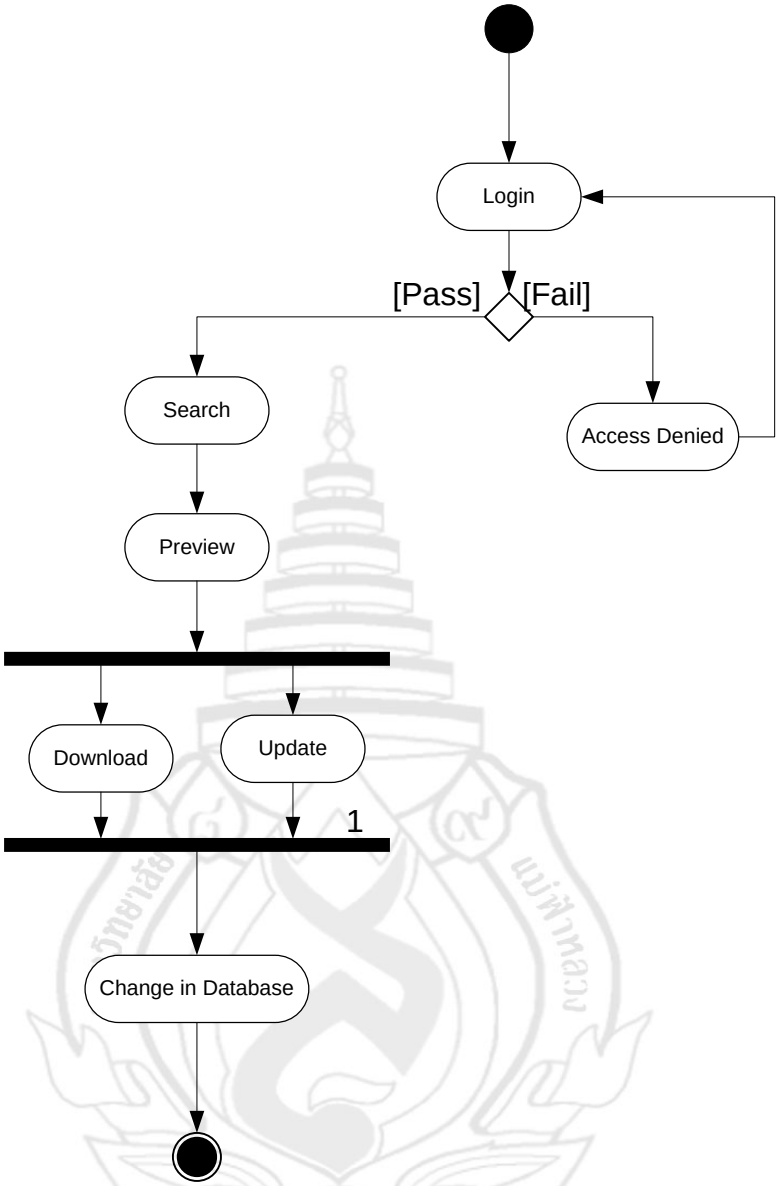

Figure 3.5 Editor Activity Diagram

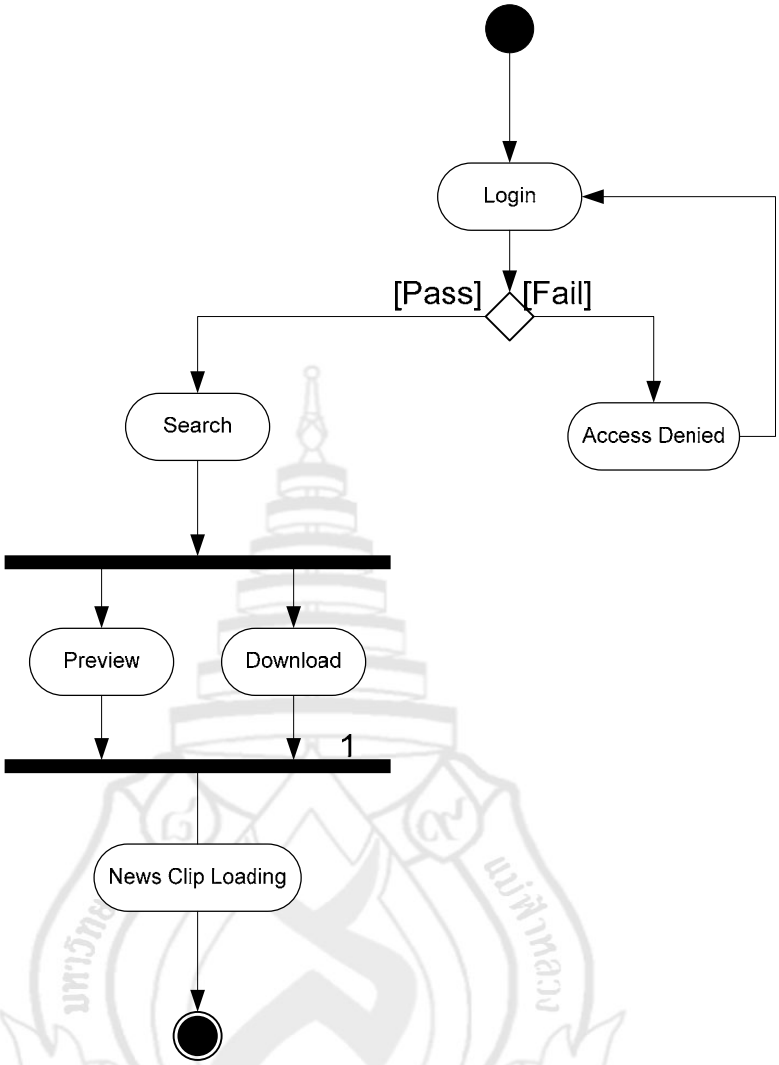

Figure 3.6 News User Activity Diagram

3.3.5 Database Analysis and Design

Database system has been analysed related with class diagram. We have to create table for keep user's profile and news video file belonging to video description video category, and video place.

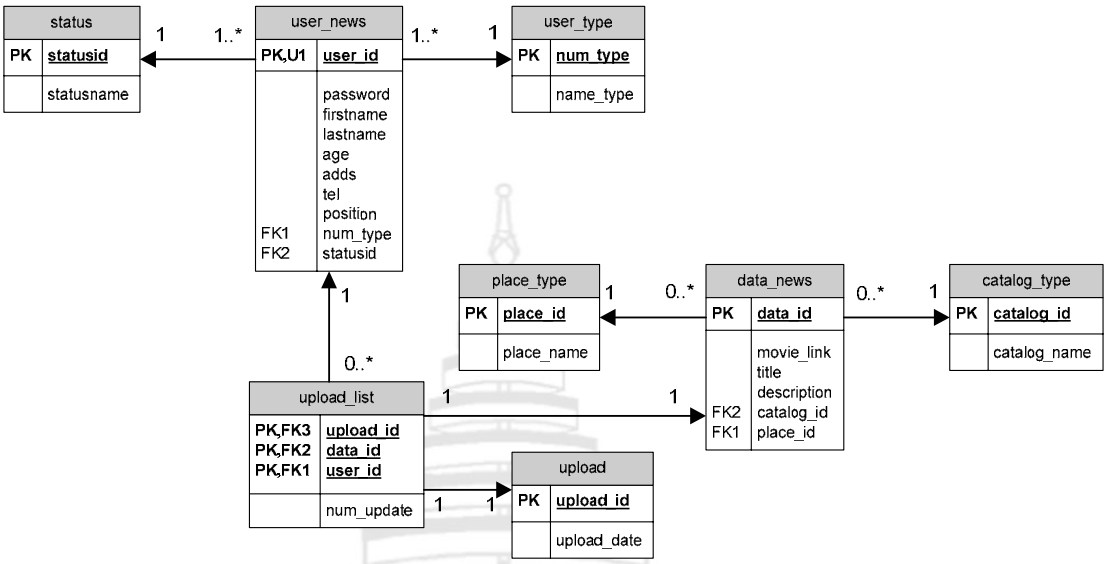

Figure 3.7 Database Diagram

Use case and class diagram and work flow diagram have been analysed. As a result, we could be known how many objects that involved this system and how to keep each object and object entity in data base system. We could define object into user and video that have to keep news user entity including user ID and user type and news video clip entity including video id, video place, and video category. Database table has described on this following.

1. News Video Table

News video table has been designed to keep video id, category id, place id, movie link, title and description. Category id foreign key related to category table. Place id is foreign key related to place table.

1) Video id need to keep identification number of video clip.

2) Category id need to keep identification number of category and extend to category table that keep gene of video clip for identify group of video clip.

3) Place id need to keep identification number of place and extend to place table that keep origin place of video has been uploaded.

4) Movie link need to keep directory path of video clip that store in database.

5) Title need to keep title of video clip.

6) Description need to keep video clip context.

2. News User Table

News user table has been designed to keep user id, user type id, user name, password, first name, last name, age, address, telephone, and position. User

type id is foreign key related to user type table. Status table might be extended to keep user status.

1) User id need to keep user identification number.

2) User type id need to keep user type identification number and extend to user type table.

3) User name need to keep login name of user.

4) Password need to keep login password of user.

5) First name, last name, age, address, telephone and position will be use to keep user profile.

3. Upload Transfer Table

Upload transfer table has been designed to keep condition of video upload such as video id, user id, upload id and upload date.

1) Upload id need to keep upload identification number.

2) Video id need to keep identification number of video uploading and foreign key link to news video table.

3) User id need to keep identification number of user that do upload video and foreign key link to news user table.

4) Upload date need to keep date and time that do upload the video.

4. Category Table

Category table has been designed to keep news category that identify group of news such as royal news, politic news, economic news, sociality news and etc. it's kept category id and category name.

5. Place Table

Place table has been designed to keep news origin place that identify place of news such as, Bangkok, Ubonratchathanee, Khonkaen, Cheangmai, Phisanulok, Suratthanee, Songkhla and so on.

6. Type Table

Type table has been designed to keep type of user that identify group of users such as Reporter user, Editor user, News user, and Admin user.

However, developer has to create table of database table by table that difficult to deploy the system. Developer would like to make it easy by design generator database table software call CreateDb that can generate all tables once.

3.4 Software Architecture Design

Software architecture has been designed regard on system procedure. System can define as user interface, transaction and database. All of them we have prefered to use some tool such as NetBean IDE, Macromedia Dreamweaver and MySQL-Front. The reason is NetBean tool has developed under Sun Microsystem that suitable to use for develop java language application software also together componet that can use in only one tool. We can write JSP page, JAVA servelet and database connector that complete with one project in NetBean. That is one stop development and easy to edit code. Macromedia Dreamweaver use for design web page or JSP page and MySQL-Front use for correct the database.

3.4.1 User Interface Design

User interface has defined by actors that involved this system. This system has four actors as admin, reporter, editor, and news user. Admins have a duty to manage users to use this sytem such as create, modify and remove users. Reporters have a duty to perform upload, search, and preview video clip. Editors have a duty to perform search, preiew, download, and update video clip. News users have a duty to perform search, preview and download video clip. In addition all users could be performing login and logof to system. And system should have response web page as uploading, error, no permission, upload successful, upload fail, and logout successful.which some page use in common page.

We have been designed user interface that is web pages interface between user and system. All users can access to the system in distinct function about thirteen pages and addition one popup and one error page. All of web page could be design seem like web page on Public Relation Department web site.Web pages have been designed for all users by use Macromedia Dreamweaver that can create, view and test on web browser. After that, open new project in NetBean tool that automatic start structure of all directories such as JSP webpage, cofiguration file, JAVA source package, and library. Then use HTML code from Macromedia Dreamweaver for create JSP web page component in NetBean.

Macromedia dreamweaver used to design user interface look like web page. For example create login web page on figure 3.11 is web page design and figure 3.12 is HTML code. Figure 3.13 to figure 3.25 have been already designed.

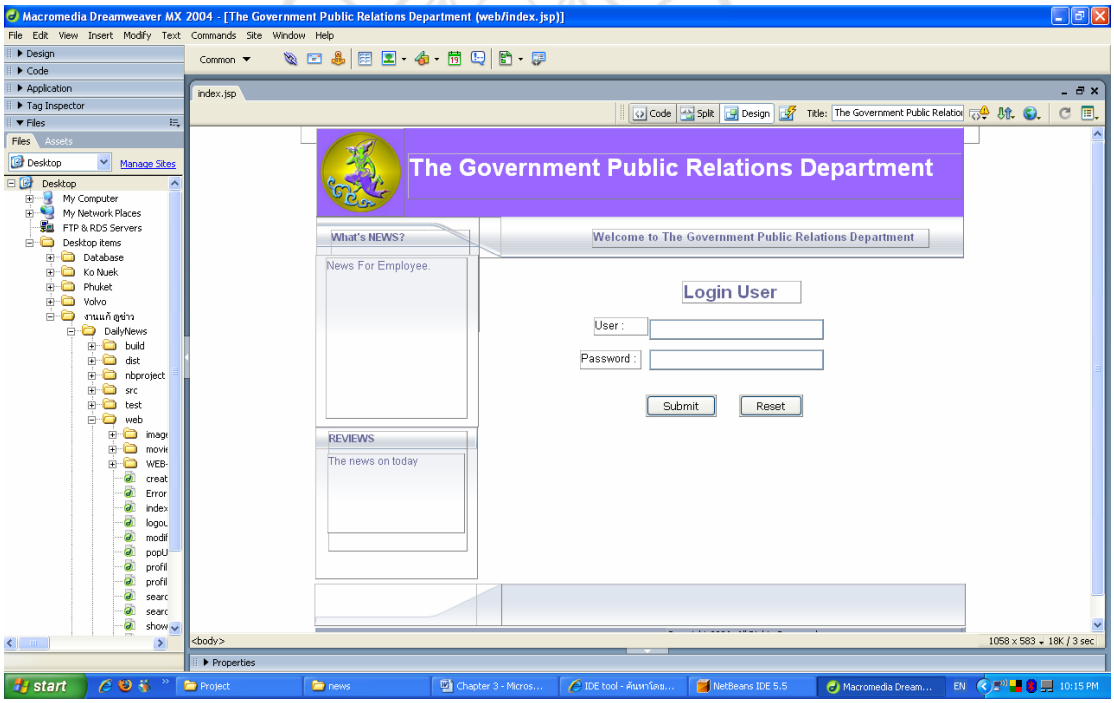

Figure 3.8 Macromedia Dreamweaver Web Page Design

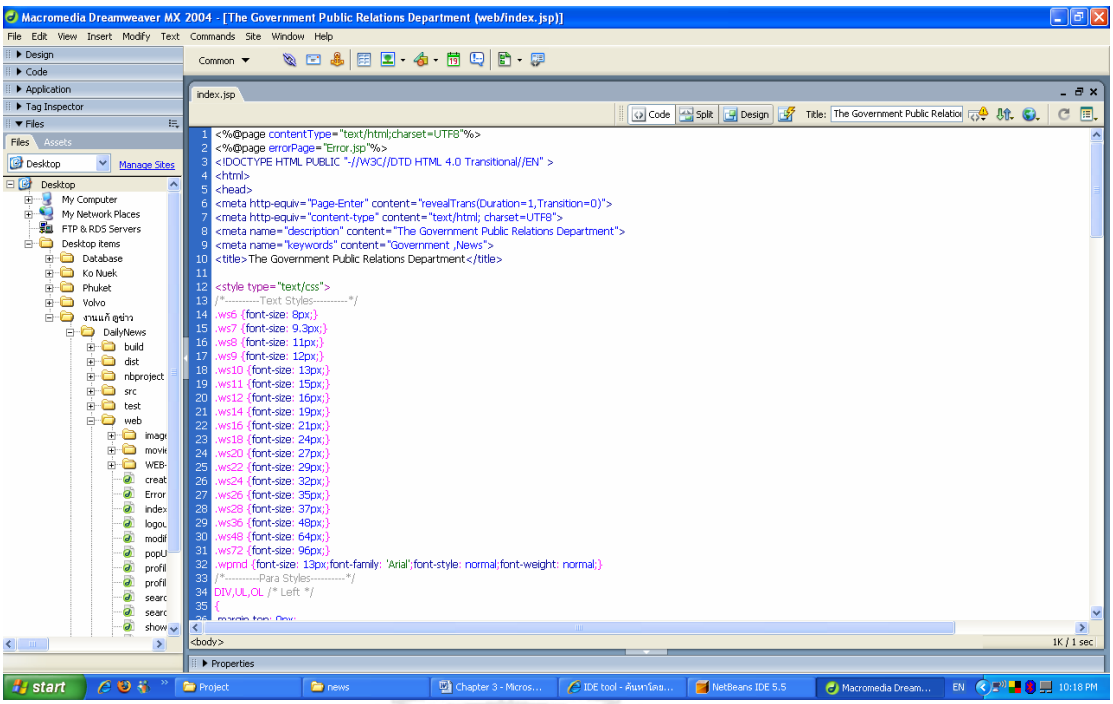

Figure 3.9 Macromedia Dreamweaver Web Page Code

Figure 3.10 Login Page

Figure 3.11 No Permission Page

Figure 3.12 Logout Page

Figure 3.13 Create User Page

Figure 3.14 Modify User Page

Figure 3.15 User Profile Page

Figure 3.16 Search User Page

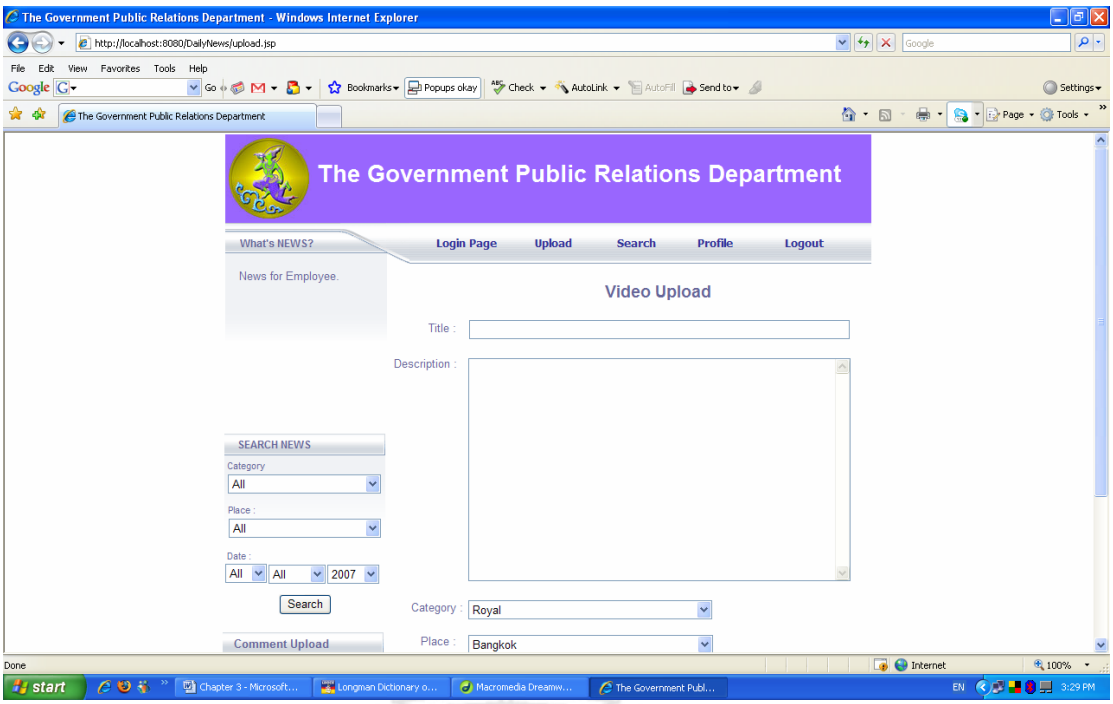

Figure 3.17 Video Upload Page

Figure 3.18 Search News page

Figure 3.19 Video Preview Page

Figure 3.20 Uploading Page

Figure 3.21 Upload Success Page

Figure 3.22 Update Page

3.4.2 System Development by NetBean

We after already design user interface web page by Macromedia Dreamweaver we will be start up NetBean IDE and open new project. See figure 3.26.

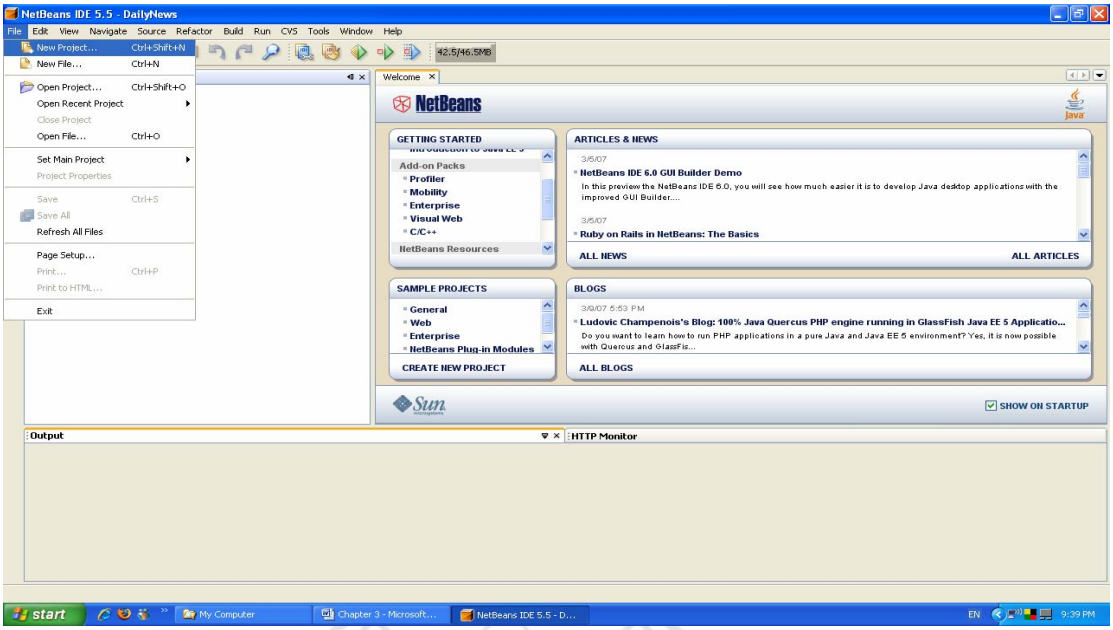

Figure 3.23 Open New Projects

We will create new project name is DailyNews. See Figure 3.27. NetBean will inception component such as Web Pages, Cofiguration File, Server Resource, Source Packages, and Libraries.

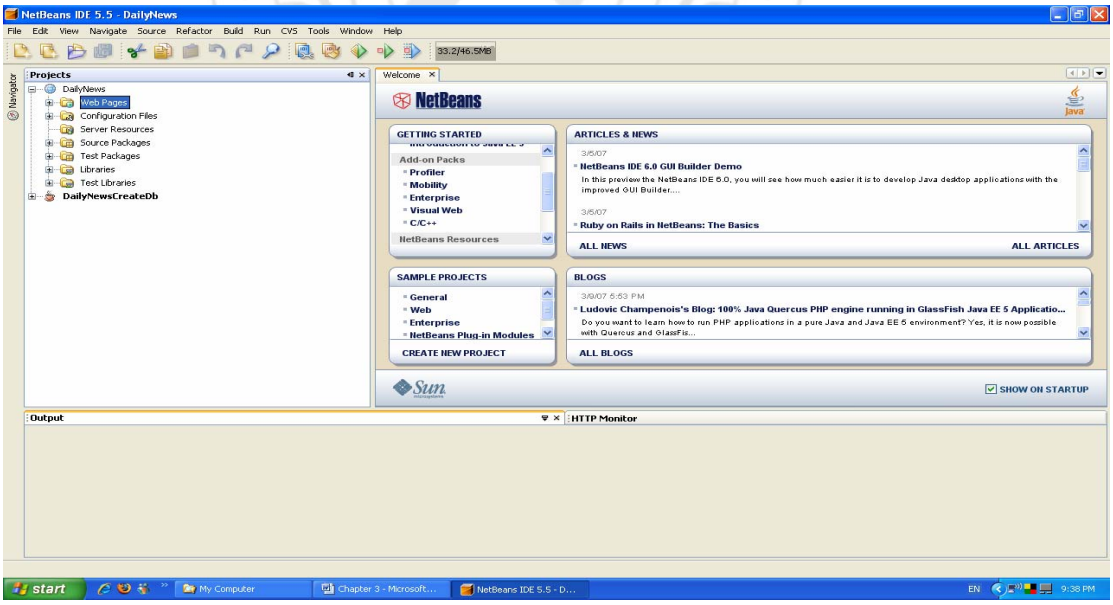

Figure 3.24 Create DailyNews Project

We will begin with Web Pages component that consist of web page environment and JSP code. We start with write code JSP pages or user interface. JSP pages were come from previous step that we have been designed HTML web pages by Macromedia Dreamweaver. See Figure 3.29.

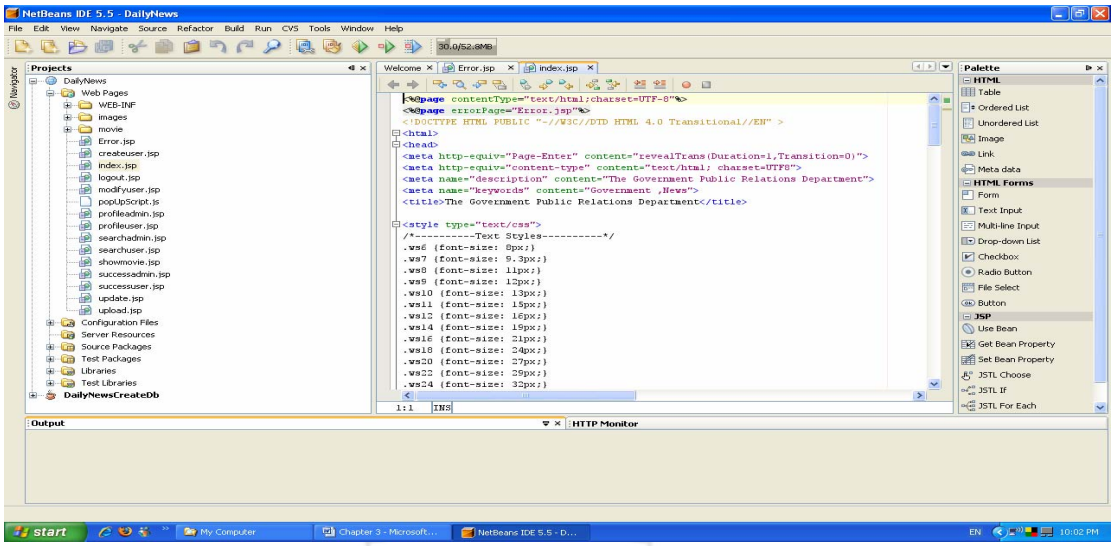

Figure 3.25 Coding JSP Pages

We have to write all JSP pages that related to java bean and java servelet code that do transaction between JSP and database. Source package has been start and coding java servelet. We have to open news package source and coding all java bean and java servelet as CharactorFilters.java, loginSvt.java, CreateSvt.java, MenberBean.java, ModifyUser.java, MysqlManager.java, UpdateSvt.java, and Uploadsvt.java that correspondence to JSP. See Figure 3.30

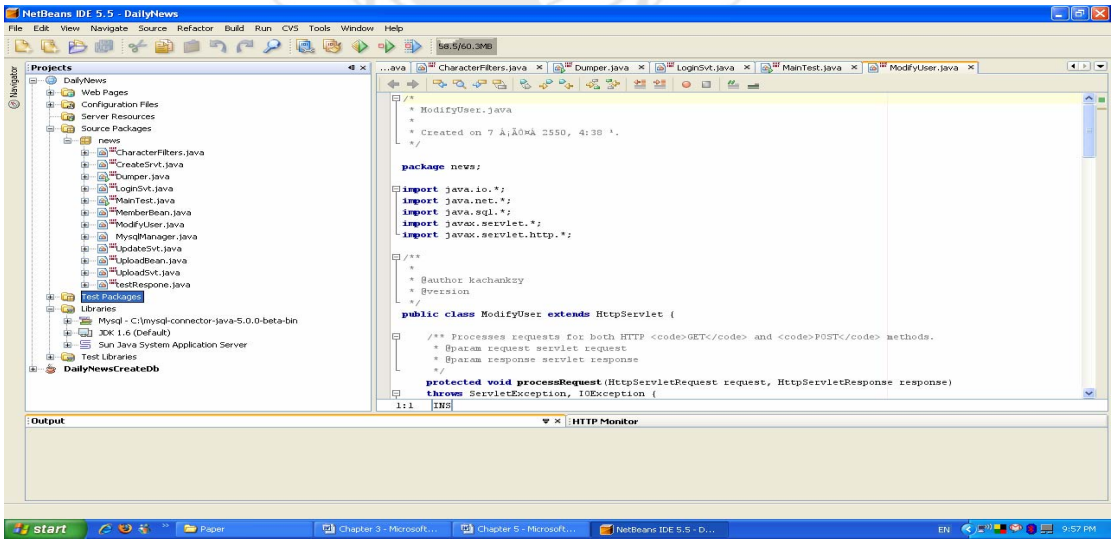

Figure 3.26 Coding Java Bean and Java Servelet

JSP and java servelet code have been created and debug, after that we can complie project by select DailyNews project and click menu build. Project will be complie to DailyNews.war file. That is all of source file compress in to .war file combine with necessary component that use for deployment.

However we should be add server and library to NetBean IDE after installation such as Mysql connector, JDK, and sun java system application server.

CHAPTER 4

SYSTEM FUNCTIONALITY

4.1 Introduction

Web Application System for News Report functions would be performing in the major role of multimedia uploads and downloads web applications. Users could be uploads and download news video clip via this system through broadband internet network. However aimed of this project especially use to improve news video clip transportation system from traditional satellite system to web application system. Most of news video clips produce in several areas that activity or event was occurred. That should be immediately sending such news video clip to news data center in Bangkok and then ready release to broadcast on television broadcasting net work.

4.2 System Architecture

Web Application System for News Report can separate to three main parts. The first part is news report web applications that do the same several software applications. The second part is java application web server that is computer server and operating system. And the last part is database and MySQL database that's keep users profile and news video clip. All of these parts have been related and work together.

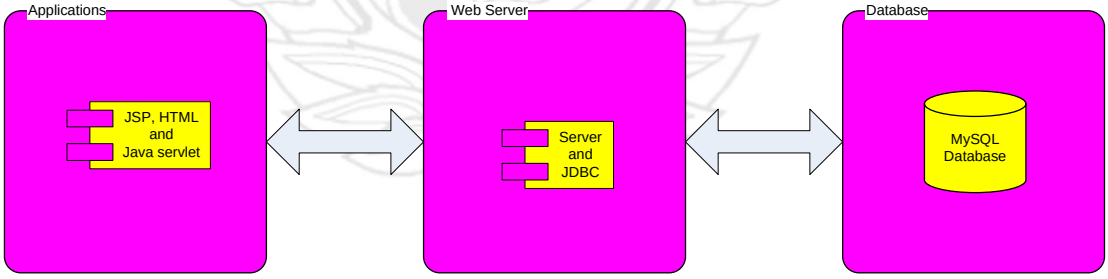

Figure 4.1 Web Application System for News Report Architecture

Their functions will be described on this following.

4.2.1 Web applications

A web application is the main function of this system. It will be deploy on java application web server which perform as middle between users and database and also control work process on the system. Users can access to this system via user

interface or java server page (JSP). Each users will be use user interface in properly function such as admin, reporter, editor, and user.

Admin is first priority user that can access to system and do functions create, update, modify, and search user's profile of the rest users to use this system. Admin access via login user page and perform such functions.

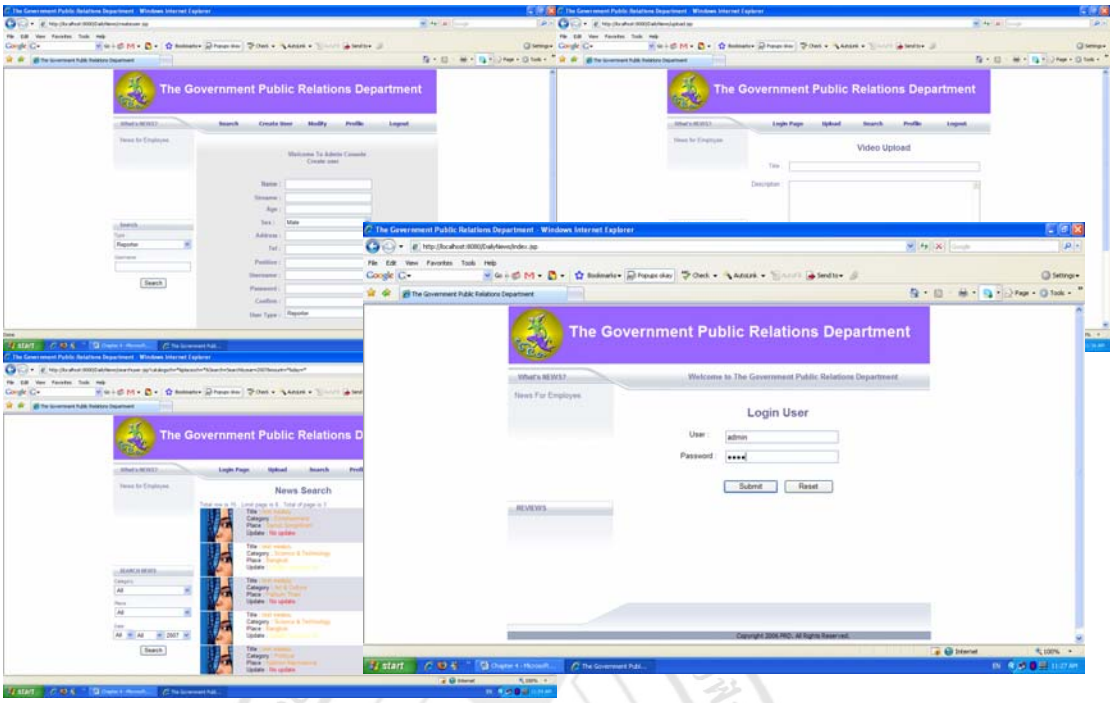

Figure 4.2 Login and User's Function Pages

Reporters are user that can access to this system for function upload, search, and preview news video clips on the system.

Editors are user that can access to this system for function search, download, and update news video clips on the system.

Users are user that can access to this system for function search and download news video clips on the system.

However, all users should be assigned by admin to keep user's profile in user's database. After that users could be access to system and perform their functions.

4.2.2 Applications Web Server

This applications software was developed by Net Bean tools of sun java technologies which more compatible to deploy in java system application server than other application server. In this case, we would like to use sun java system application server plat form edition 9 to test this software and probably use to implement this project. Sun java system application server has duty to deploy this web application and work as web server that keep software property and connect to database.

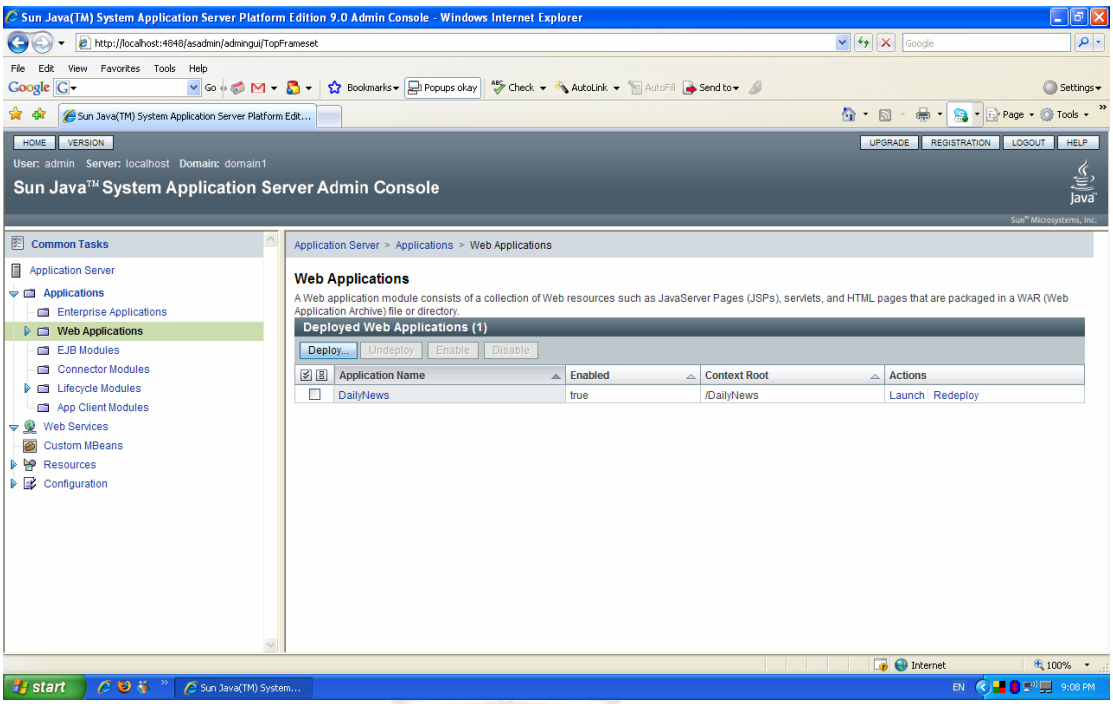

Figure 4.3 Sun java system application server

4.2.3 Database

MySQL database has preferred to use for keep users database and movies database. It could be design database into two sections. The first section use to keep users information as user_news table, user_type table, and status table. For example test.

Table 4.1 User_News Table

user_id	password	firstname	lastname	age	adds	tel	position	num_type	statusId
admin	1234	admin	admin	23	123456/777	99123213	computer	4	1
editor	editor	kachan	kannika	43	61/748 Theparak Rd. Bangplee Smuthprakarn 10540	8.14E+08	Engineer	3	1
reporter	reporter	paweenuch	kannika	15	61/748 Theparak Rd. Bangplee Smuthprakarn 10540	27505933	writer	1	2
user	user	khonthawan	kannika	14	61/748 Theparak Rd. Bangplee Smuthprakarn 10540	27505933	writer	2	2

Table 4.2 User_Type Table

num_type	name_type
1	Reporter
2	User
3	Editor
4	Admin

Table 4.3 Status Table

statusId	statusname
1	Male
2	Female

The second section use to keep movies information as catalog_type table, data_news table, place_type table, upload table, and upload_list table. For example test.

Table 4.4 Catalog Type Table

catalog_id	catalog_name
1	Royal
2	Political
3	Economics
4	Sociality
5	Art & Culture
6	Sports
7	Entertainment
8	Tourism
9	Science & Technology
10	Educational
11	Others

Table 4.5 Data_News Table

data_id	mov_link	title	description	catalog_id	place_id
1	mov1.wmv	test	test	7	25
2	mov2.zip	test	test	9	1
3	mov3.wmv	test	test	5	3
4	mov4.wmv	test	test	9	1
5	mov5.wav	test	test	2	27
6	mov6.wmv	test	test	1	1
7	mov7.m4v	test	cnet technologies report	7	77
8	mov8.m4v	test	Test	9	1
9	mov9.m4v	test	test	10	77
10	mov10.m4v	test	test	8	2

Table 4.6 Place_Type Table

place_id	place_name
1	Bangkok
2	Nonthaburi
3	Pathum Thani
4	Samut Prakarn
5	Ayutthaya
6	Ang Thong
7	Chainat
8	Nakhon Nayok
9	Lop Buri
“	“ “
77	Foreign Country

Table 4.7 Upload Table

upload_id	upload_date
1	2/17/2007
2	2/17/2007
3	2/17/2007
4	2/17/2007
5	2/17/2007
6	2/17/2007
7	2/22/2007
8	2/23/2007
9	2/23/2007
10	2/23/2007

Table 4.8 Upload_List Table

upload_id	data_id	user_id	num_update
1	1	reporter	0
2	2	reporter	1
3	3	reporter	0
4	4	reporter	1
5	5	reporter	0
6	6	reporter	0
7	7	reporter	0
8	8	reporter	0
9	9	reporter	0
10	10	reporter	0
11	11	reporter	1
12	12	editor	0
13	13	editor	1
14	14	reporter	0

4.3 Test Plan

Web Application System for News Report is a web applications software that will be use to transport news video clip from another clients to web server and also ingest the video clips into central database system. This system seems like an upload video file through broadband internet network to web server, and then manage database via this web application. Purpose of this application software is use to improves news video clips transportation system of the Public Relations Department. Therefore this applications software would be prepared to operating test to ensure that this applications software could be work in proper way and achieve expectation of this project.

The new system will do the following.

1. Provide users with web pages user interface in various function and job sequence.
2. Handle upload and download news video clips via web browser through broadband internet network.
3. Keep news video clips in database.
4. Management news video clips by web application.

4.3.1 Testing Scope

This applications software work as media web applications system might be a simple and not complicated. However, this system accommodation have to depend on internet network especially speed for transfer huge of video file. So, it should be operating test in some necessary case.

1. Graphic User Interface (GUI)

Graphic user interface test to ensure that all graphic design, button, fields, and other gadgets of page should not complicate to use and user's function could easy to understand and fit to their's function.

2. Video File Transfer & Data Entry

Upload and download file test is depend on speed of internet net can provide. News report web applications system should allow users upload and download video file and documentaries into database through web browser in proper time and limit speed of internet network infrastructure.

3. Database System

Data base system test to ensure that database can support to keep many of video files in true location and search function can find news video file in accurate position.

4. Security

Security test to ensure that exist users can login to system in proper function and system admin can manage their users if someone done in the wrong way and unauthorized users should not access to this system. News video file should be use with managerial policy and also file loss protection.

4.3.2 Test Strategy

The test strategy consists of a series of different tests that will fully exercise the news report web application system. The primary purpose of these tests is to uncover the systems limitations and measure its full capabilities. A list of the various planned tests and a brief explanation on this following.

1. System Test
2. Performance Test
3. Security Test
4. Stress and Volume Test
5. Recovery Test
6. Documentation Test
7. User Acceptance Test

4.3.3 Test Environment Requirement

User Requirement

1. PC with OS windows XP and web browser
2. Internet Network
3. Video files

System Requirement

1. Server computer with Sun java system application server
2. MySQL database system

4.3.4 Test Schedule

1. Ramp up/System familiarization	15/01/07 – 25/01/07
2. System Test	26/01/07 – 27/02/07
3. User Acceptance test	28/02/07 – 10/03/07

4.3.5 Function to be Test

The following is a list of functions that will be tested:

1. System admin function that create, modify and remove user profile
2. News Reporter function that upload, search and preview news video clip also news documentation
3. News Editor function that search, preview, download and update news video clip
4. News User function that search, preview and download news video clip
5. Security feature
6. Search feature
7. Preview plug in player tool
8. Screen mapping
9. Error message
10. Video file format
11. Database create and control
12. Upload and Download time

4.3.6 Test System Environment and Specification

1. Server Environment Specification
   Hardware: Acer Power ST Pentium 4 1.8 MHz RAM 512 MHz
   OS: Windows XP
   Web Server Application: Sun java system applications server PE9
   Database server: MySQL
2. Public Network Environment
   ADSL: 512/256 Kbps from True Vision Plc.
3. Client Environment Specification
   Hardware1: Notebook Acer Aspire 5500 CPU Intel Centrino

1.73 GHz RAM DDR2 768 MHz OS:Windows XP
Hardware2: Notebook Toshiba CPU Intel Celeron Mobile 1.6 MHz RAM 512 MHz OS: Window XP

4. Server configuration
Set HTTP Service and HTTP file cache
Timeout: 7200 (2 Hours)
Maximum file size: 200 Megabytes

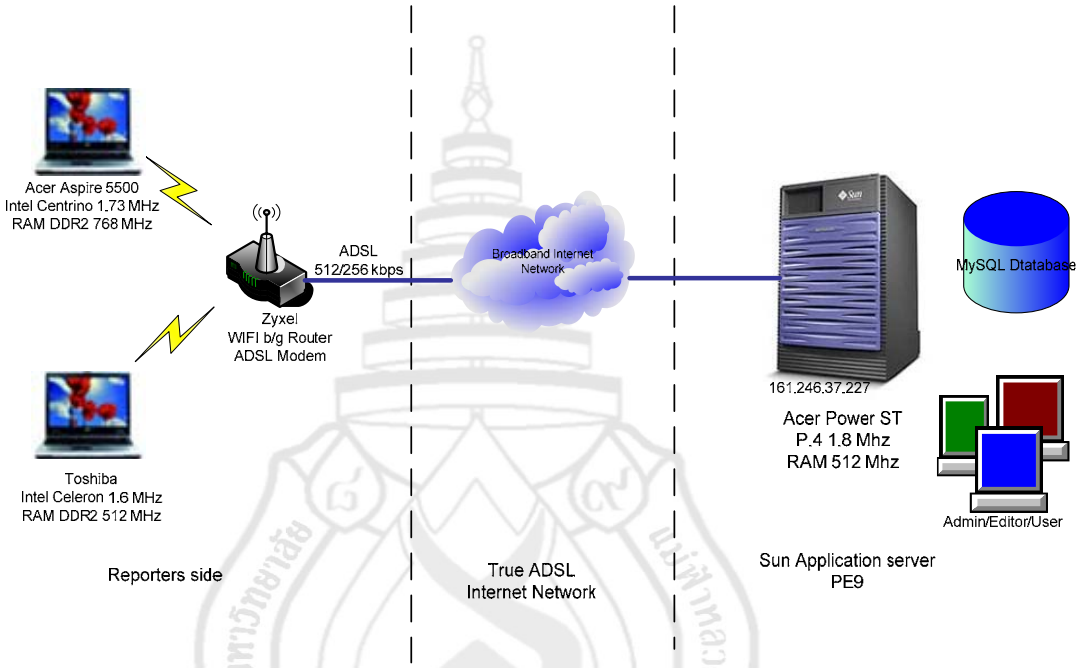

Figure 4.4 Test System Environments

This test system has established on currently environment of ADSL high speed internet services in Thailand. This system would be set up PC Acer power ST 1.8 Mhz as a server that operate under windows XP operation system and install sun application web server and MySQL database server that perform like a server side. The server side has located at under King Mongkut Institute of Technology Ladkrabang (KMITL) network that provided IP 161.245.37.227 for server but nothing DNS server. Client side as reporter function would be set up a network as home network that consist of ADSL internet modem and WIFI router connected to ADSL services line from True Vision Plc, and then set up two computer notebook could be connect to this WIFI network.

This test system we would like emphasize on test system performance, video down load, video upload, search function and database consistency. However, we would be test GUI of this application that could be properly for every user. Upload test is important to measure time that related to file size by using different video file size and format for upload to the system. Download test is testing on the same file size and format from upload in reverse way.

4.3.7 Graphic User Interface Test

Table 4.9 Test Result

No	Topic	Condition			Comment
		Good	Moderate	Modify	
1.	Windows Compliance Standards				
	1.1 Application		/		
	1.2 For each windows in application		/		
	1.3 Text Area	/			
	1.4 Command Buttons	/			
	1.5 Drop Down List Box		/		
2.	Screen Validate Checklist				
	2.1 Aesthetic		/		
	2.2 Validation	/			
	2.3 Navigation	/			
	2.4 Usability	/			
	2.5 Data Integrity		/		
	2.6 Modes(editable read-only)	/			
	2.7 General		/		
3.	Specific Field	/			
	3.1 Date Field	/			
	3.2 Numeric Field	/			
	3.3 Alpha Field	/			

1. Window Compliance Standard

Application: First web page that should be login page. Unauthenticated user should not allow to access system and indicated notation script page that no permission. Log out from system should be indicated notation script page that successful logout.

For Each window in application: Window caption for every application should have the name of application and the window name. For each window is depending on user function that separated also some windows could be used in common windows for more one user.

Text Area: Move mouse cursor into enterable text area. Mouse cursor should be change from arrow to insert bar. Text area can support Thai and English language and also can accept enough words for news context that appropriate for news report.

Command Buttons: In every command buttons could be activated by

1. Once click on each button.
2. Tab to each button and press space bar.
3. Tab to each button and press return.

Drop down List Box: Pressing the arrow should give list of option. This list may be scrollable. It should not be able type text in text box. Press a letter should bring to the first item in the list with that start with that letter.

2. Screen Validate Check List[8]

Aesthetic Conditions:

1) The general screen background should be correct color.
2) The field prompts should be correct color.
3) Field backgrounds should be correct color.
4) In read-only mode, field prompts should be correct color.
5) In read-only mode, field backgrounds should be correct color.
6) All the screen prompts specified that should be correct screen font.
7) Text in all fields specified that should be correct screen font.
8) All the field prompts aligned that should be properly on the screen.
9) The entire field edits boxes aligned that should be properly on the screen.
10) All group boxes aligned should be correctly on the screen.
11) The screen should be resizable.
12) The screen should be minimisable.
13) All the error message text should be spelt correctly.
14) All user input captured in UPPER case or lower case are consistently.
15) Where the database requires a value (other than null) then this should be defaulted into fields. The user must either enter an alternative valid value or leave the default value intact.
16) Assure that all windows have a consistent look and feel.
17) Assure that all dialog boxes have a consistent look and feel.

Validation Conditions:

1) Failure of validation on every field that should be causes to response user error message.
2) If the user enters an invalid value and clicks on the submit button that should be invalid entry has identified and highlighted correctly with an error message.
3) For all numeric fields check whether negative numbers can and should be able to be entered.
4) For all numeric fields check the minimum and maximum values and also

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[8]Barry Dorgan, **GUI Testing Check List** [Online], Available from http//:www.methodsandtools.com/archive/archive.php?id=37 (20 April, 2007)

5) some mid-range values should be allowable.

6) For all character/alphanumeric fields check the field to ensure that there is a character limit specified and that this limit is exactly correct for the specified database size.

If any of the database columns don't allow null values then the corresponding screen fields must be mandatory. (If any field which initially was mandatory has become optional then check whether null values are allowed in this field)

Navigation Conditions:

1) The screen be accessed that could be correctly from the menu.

2) All screens accessible via buttons on this screen be accessed that could be correctly.

3) The screen modal, user should be prevented from accessing other functions when this screen is active and this is correct.

Usability Conditions:

1) All the dropdowns on this screen could be sorted correctly.

2) All date entry could be required in the correct format.

3) All pushbuttons on the screen should have given appropriate shortcut keys.

4) TAB order specified on the screen should go in sequence from top left to bottom right. This is the default unless otherwise specified.

5) All read-only fields should avoid in the TAB sequence.

6) All disabled fields should avoid in the TAB sequence.

7) The cursor could be placed in the micro help text box by clicking on the text box with the mouse.

8) The cursor could be placed in read-only fields by clicking in the field with the mouse?

9) The cursor positioned should be in the first input field or control when the screen is opened.

Data Integrity Conditions:

1) Data should be saved when the window is closed by double clicking on the close box.

2) Check the maximum field lengths to ensure that there are no truncated characters.

3) Where the database requires a value (other than null) then this should be defaulted into fields. The user must either enter an alternative valid value or leave the default value intact.

4) Check maximum and minimum field values for numeric field.

5) If numeric fields accept negative values can these be stored correctly on the database and does it make sense for the field to accept negative numbers?

6) If a particular set of data is saved to the database check that each value gets saved fully to the database. Beware of truncation (of strings) and rounding of numeric values.

Modes (Editable Read-only) Conditions:

1) The screen and field colors should be adjusted correctly for read-only mode.
2) A read-only mode should be provided for this screen.
3) All fields and controls should be disabled in read-only mode.
4) The screen could be accessed from the previous screen/menu/toolbar in read-only mode.
5) Check that no validation is performed in read-only mode.

General Conditions:

1) In drop down list boxes, ensure that the names are not abbreviations / cut short
2) In drop down list boxes, assure that the list and each entry in the list can be accessed via appropriate key / hot key combinations.
3) Assure that the Cancel button operates as a Close button when changes have been made that cannot be undone.
4) Assure that OK and Cancel buttons are grouped separately from other command buttons.
5) Assure that command button names are not abbreviations.
6) Assure that all field labels/names are not technical labels, but rather are names meaningful to system users.
7) Assure that command buttons are all of similar size and shape, and same font and font size.
8) Assure that each command button can be accessed via a hot key combination.
9) Assure that command buttons in the same window/dialog box do not have duplicate hot keys.
10) Assure that all option buttons (and radio buttons) names are not abbreviations.
11) Assure that option button names are not technical labels, but rather are names meaningful to system users.
12) Assure that option box names are not abbreviations.
13) Assure that option boxes, option buttons, and command buttons are logically grouped together in clearly demarcated areas "Group Box".
14) Assure that the Tab key sequence which traverses the screens does so in a logical way.
15) Assure consistency of mouse actions across windows.
16) Assure that the screen/window does not have a cluttered appearance.
17) Ctrl + F6 opens next tab within tabbed window.
18) Shift + Ctrl + F6 opens previous tab within tabbed window.
19) Banner style and size and display exact same as existing windows.
20) If 8 or less options in a list box, display all options on open of list box - should be no need to scroll.
21) All fonts to be the same

22) Alt+F4 will close the tabbed window and return you to main screen or previous screen (as appropriate), generating "changes will be lost" message if necessary.

23) If retrieve on load of tabbed window fails window should not open.

3. Specific Field Test

Date Field Check:

1) Assure that leap years are validated correctly and do not cause errors/miscalculations.
2) Assure that month code 00 and 13 are validated correctly and do not cause errors/miscalculations.
3) Assure that 00 and 13 are reported as errors.
4) Assure that day values 00 and 32 are validated correctly and do not cause errors/miscalculations.
5) Assure that Feb. 28, 29, 30 are validated correctly and do not cause errors/ miscalculations.
6) Assure that Feb. 30 is reported as an error.
7) Assure that century change is validated correctly and does not cause errors/ miscalculations.
8) Assure that out of cycle dates are validated correctly and do not cause errors/miscalculations.

Numeric Fields:

1) Assure that lowest and highest values are handled correctly.
2) Assure that invalid values are logged and reported.
3) Assure that valid values are handles by the correct procedure.
4) Assure that numeric fields with a blank in position 1 are processed or reported as an error.
5) Assure that fields with a blank in the last position are processed or reported as an error an error.
6) Assure that both + and - values are correctly processed.
7) Assure that division by zero does not occur.
8) Include value zero in all calculations.
9) Include at least one in-range value.
10) Include maximum and minimum range values.
11) Include out of range values above the maximum and below the minimum.
12) Assure that upper and lower values in ranges are handled correctly

Alpha Field Checks:

1) Use blank and non-blank data.
2) Include lowest and highest values.
3) Include invalid characters and symbols.
4) Include valid characters.
5) Include data items with first position blank.
6) Include data items with last position blank.

4.3.8 Video File Upload Time Test

Video file upload time test would be used variety of video files and formats for upload test in the same environment then measured interval time upload related with video file size on this following.

Files format has been used to test on this system are consists of several formats as MPEG4, WMV, MP3, AVI and MOV file. All of them can upload to system, however, on preview function on show movie player tools should have download plug in that can support to playing each of file.

Table 4.10 Upload Time Test

No	File Size	File Type	Upload Time/Minutes	Download Time/Minutes	Comment
1.	10 Mb	WMV	6	4	Most of file
2.	50 Mb	WMV	29	15	size have an
3.	100 Mb	MOV	57	31	error not over
4.	150 Mb	WMV	86	48	2 %
5.	200 Mb	AVI	115	65	

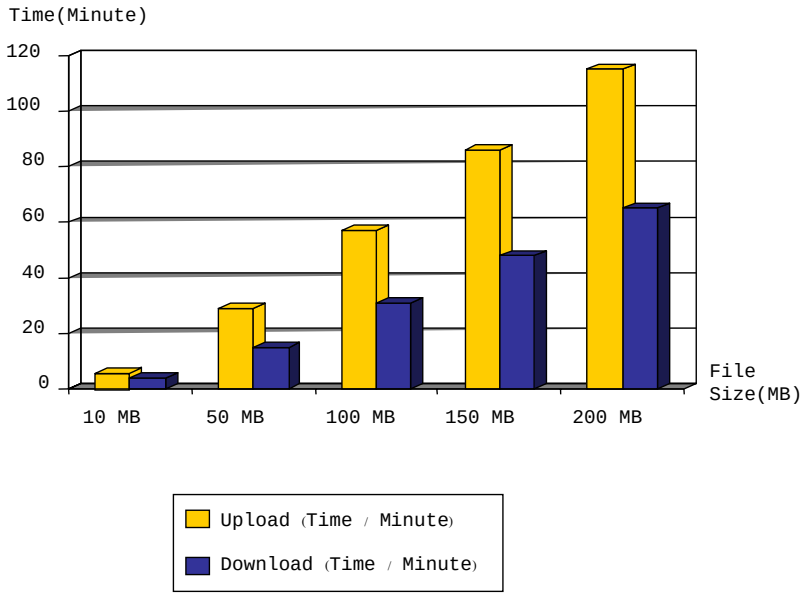

Figure 4.5 Upload Time Graph

4.3.9 Database Capacity Test

Database capacity of news report web application system has been related two factors, first is capacity of hard disk that allocated for sun java application server and second is server configuration that should be set time out and http cache to support upload time and http cache memory. Because of this application design to

keep news clips in directory C:\Sun\AppServer\domains\domain1\applications\j2ee-modules\DailyNews\movie that depending on movie directory that related to mov_link in data_news table which assign by varchar(15) could be keep news clip name from mov.1 to mov99999999.

For movies volume test in this application system that performs on big size of video files, as a result it has consume more bandwidth budgets. However, we would be tested by upload many of video file size and format and then check space of database. This way could be evaluated amount of video file that system should be supported. Anyway capacity of database is depending on server disk drive volume.

Nevertheless, the system should be depending on operation system that this web application deploys under operation system. Such as, windows server 2003, Solaris and Linux that are most of them can support different volume and file size. So that, the effective of this application have to concern about OS file system that all owner OS system claim that on this following.

Table 4.11 Comparison of NTFS and FAT File Systems[9]

Subject of comparison	NTFS	FAT16	FAT32
Operating system compatibility	A computer running Windows Vista, Windows Server 2003, Windows 2000, or Windows XP can access files on an NTFS partition. A computer running Windows NT 4.0 with Service Pack 4 or later can access files on the partition, but some NTFS features, such as Disk Quotas, are not available. Other operating systems allow no access.	File access is available to computers running Microsoft® MS-DOS®, all versions of Windows, Windows NT, Windows XP, Windows Vista, and OS/2.	File access is available only to computers running Microsoft® Windows 95 OSR2, Windows 98, Windows Me, Windows 2000, Windows XP, and Windows Vista.
Volume size	Recommended minimum volume size is approximately 10 MB. Recommended practical maximum for volumes is 2 terabytes. Much larger sizes are possible. Cannot be used on floppy disks.	Volumes up to 4 GB. Cannot be used on floppy disks.	Volumes from 512 MB to 2 terabytes. In Windows Vista, you can format a FAT32 volume only up to 32 GB. Cannot be used on floppy disks.
File size	Maximum file size 16 terabytes minus 64 KB (2^{44} minus 64 KB)	Maximum file size 4 GB	Maximum file size 4 GB
Files per volume	4,294,967,295 (2^{32} minus 1 files)	65,536 (2^{16} files)	Approximately 4,177,920

[9]Microsoft TechNet, **Comparison of NTFS and FAT File Systems** [Online], 23 April, 2007 Available from http://technet2. micro soft.com/WindowsVista/en/library / 5025760b-0433-4ba1-a2f4-9338915fdb4b1033. mspx?mfr=true

Solaris operating system used UNIX file system (UFS) that are two variants, logging UFS and the metatrans UFS. All current of UFS have a nominal maximum file system size of 1 terabyte (the limit will be raised to 16 terabyte in the Solaris 10 OS) a single file stored in any of them must fit in side a file system, so the maximum size file is slightly smaller, about 1009 gigabyte of 1024 gigabyte file system. No reasonable to the number of file systems that can be built in a single system; systems have been run with over 2880 UFS file systems.

Linux operating system is a simple description of the UNIX system that could be describe on this compare file size and file system table.

Table 4.12 Linux File Systems and File Size [10]

File System	File size Limit	File system Size Limit
ext2/ext3 with 1 KB blocksize	16448 MB (~ 16 GB)	2048 GB (= 2 TB)
ext2/3 with 2 KB blocksize	256 GB	8192 GB (= 8 TB)
ext2/3 with 4 KB blocksize	2048 GB (= 2 TB)	8192 GB (= 8 TB)
ext2/3 with 8 KB blocksize (Systems with 8 KB pages like Alpha only)	65568 GB (~ 64 TB)	32768 GB (= 32 TB)
ReiserFS 3.5	2 GB	16384 GB (= 16 TB)
ReiserFS 3.6 (as in Linux 2.4)	1 EB	16384 GB (= 16 TB)
XFS	8 EB	8 EB
JFS with 512 Bytes blocksize	8 EB	512 TB
JFS with 4KB blocksize	8 EB	4 PB
NFSv2 (client side)	2 GB	8 EB
NFSv3 (client side)	8 EB	8 EB

4.3.10 Test Conclusion

News reporter web application has been tested for GUI test, Upload time test, Stress and volume test. We can gather information and evaluated this application in three main elements on this following.

1. GUI test, we can check about screen and every button, field, function that work properly. This application, all of GUI check can work suitable for any users and function but it has some screen or some function may be or may be not change for improve this application in the future.

2. Upload time test, we can check time for upload video clip through web browser over hi speed internet network. This test is work properly and suitable for news report in various file size and file format. Most of waiting time for upload and preview video are depend on bandwidth of web server and internet network speed for client but this the same when upload same video and environment to popular video website as youtube.

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[10]Andrea Jaeger, **LFS in Linux** [Online], 23 April, 2007 Available from http://www.suse.de/~aj/linux_lfs.html

3. Database capacity test, we can check maximum capacity for keep news clip in system. This test is difficult to work in a short time because upload news clip is very big file and take more time. We can evaluate by approximately check by upload a lot of video file that we can upload and check rest of volume of server disk drive.

Video file formats for test this system has been used MP4,WMV,AVI and MP3. All formats could be uploaded, MP4, MP3 and WMV are more comfortable for used to upload and preview via this system because it's less bitrates and consume low bandwidth, but AVI is higher bitrates and higher resolutions then take more time to upload and preview. Nevertheless, news user and editor function could have suite perform to preview, update and download because they do work as workstation of system that has more bandwidth.

However, web application system for news report would be implementing to gain efficiency and capability. The first one this system should be deploying in web server that can provide high bandwidth which related to support upload huge video file in realistic work. The second one is this system should be limit video file format for upload to system such as file type may be WMV format that available on windows and comfortable to upload and save capacity of database. (The same video length AVI has more capacity than WMV)

CHAPTER 5

SUMMARY AND SUGGESTION

This chapter is summarized all of project that's developer conduct the task from initial to end of this project. That's how to confront the problem, how to solve the problem and how to meet achieve goal of this project. The project might be change in some element for user satisfaction and fit to their function. That's developer challenge to develop a new system.

5.1 Project Summary

Web Application System for News Report has been designed to use on internet environment that user can access through web browser. It's been designed in three major parts are user interface, work flow management and database system.

The first part is graphic user interface. It's been designed by use JSP and HTML tag to indicate in different function of users. Such as, reporter users should be used upload page, search news page, and preview page but could not used download page. Because of reporter user's requirement is unnecessary to used news video clip for broadcast. Editor should be used search page, preview page and download & Update page. Because of editor user's requirement would like to editing news video clips and update to database. News User should be used search page, preview page, and download page. Because of news users user's requirement would like to download news video clip to broadcast on TV network that's unnecessary to procreate news clip.

The second part is workflow management of data that many user use the system such as file upload to database, search file on database, and management news video clip on database through web server. It's been designed by use java servelet technique that work together with JSP page and MySQL database.

The last part is database system for keep user's profile and news video clip. It's been designed by use MySQL database system that properly use with java server system application. It's been designed to keep news upload data, news category data, news upload place data, news description data, and also keep upload date. User's profile has been kept in user's ID, user type, username and password.

NetBeans IDE 5.5 tool has been selected to develop whole of this project. The reason is first NetBeans IDE 5.5 is a free tool that can download from sun web site, second this project develops by use java language and MySQL database system that's NetBeans IDE 5.5 can support, third developer can be use only NetBeans IDE 5.5 tool to develop this project.

5.2 Problems Encountered and Solutions

This project has been encountered with upload media file through internet network. Because of media file as news video clip has many format and sizable file. Internet network limitation is file transfer speed. First of all, we would like to use upload bean that developed by apache to use for upload video file through internet network. However, upload bean must be applied for suitable this project. So, we have to decide to change upload scheme from complete upload bean to create new upload servelets to convey document and video file to database.

File format is another problem is occurred when user upload and download through internet network. Actually news video clip has many formats such as avi, wmv, mpeg 2, mpeg 4, m4v and etc, which some format might be a problem to preview by window media player tools that plug in this application and also might be a problem download file from database via web browser. The way that easy to solve this problem is convert file format to avi, or wmv, format that suitable to preview, upload and download file. Nevertheless, if necessary it can be zip file before upload that could not preview on web applications but it can download and unzip to preview out of this application by some player tools. Whatever this application is web applications that develop under request for comment (RFC1867) form-based file upload in HTML.

Database system is another problem that we have not sure that can support huge of video file. Because of actually work may be having many users and video file on database.

5.3 Suggestions for Further Development

Web Application System for News Report has been developed by use java language and MySQL for free applications development under short time period and also developer may not programmer. It has difficult to educate in every section in this case. We decided to use some free tools as NetBean and MySQL-Front to implement this project. Cause of use software free version that will probably have limit some feature such as number of users and volume of database.

This project has developed aim to use for particular purpose as news report in the government Public Relations Department. That is close system. If we would like to gain benefit in the future, I think we should be extend to develop this project to support many users and huge of video file that we can open system for volunteer to upload news clip to broadcast on TV system. However in the future telecommunication equipment and net work as mobile telephone and digital camera has been developing in quality of picture and speed that can promote to use for TV broadcast system. It might be develop the system that can support mobile phone and PDA phone to upload video clip as well.

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APPENDIX A

SYSTEM CONFIGURATIONS

System Configurations

1. Install JDK 1.6 First
2. Install Sun Application Server 9
3. Install MySQL Database
4. Configuration System

Build Datbase name DailyNews, This project we have program help to create database to generate all table in database system. First we double click on folder DailyNewsDatabaseCreate and double click on DailyNewsDatabaseCreate.exe file then windows will be popup and fill user name and password that we create on MySQL installation process. By default user name is 'root' and passwords depend on we initiate. After that it will be generate all table in this system. When we generated database it will be initiate username and password by default for access to database, user: admin, password: 1234.

Configuration Web.xml file

This application we have file web.xml in folder /DailyNews/WEB-INF which use for correlation between system source file and database configuration. We could be edit web.xml source file that relation java source and database on this following.

Fix tag format like this.

```
<context-param>
      <param-name>valiable  name</param-name>
      <param-value>valiable value</param-value>
</context-param>
```

Fix Variable and url of database server.

```
   <context-param>
      <param-name>url</param-name>
      <param-value>jdbc:mysql://localhost:3306/dailynews</param-value>
   </context-param>
```

Fix Driver of Database.

```
   <context-param>
      <param-name>driver</param-name>
      <param-value>com.mysql.jdbc.Driver</param-value>
   </context-param>
```

Fix Users of database.

```
<context-param>
      <param-name>userdb</param-name>
      <param-value>root</param-value>
   </context-param>
```

Fix Password ofdatabase.

```
<context-param>
      <param-name>passworddb</param-name>
      <param-value>tumnarak</param-value>
   </context-param>
```

Fix Movie folder of web application.

```
   <context-param>
      <param-name>Moviefolder</param-name>
```

```
      <param-value>movie</param-value>
   </context-param>
```

Fix Path of sun application server modules that located web application.

```
   <context-param>
      <param-name>path</param-name>
<param-value>C:/Sun/AppServer/domains/domain1/applications/j2ee-modules</param-value>
   </context-param>
```

Fix Host name of sun application server.

```
<context-param>
      <param-name>hostname</param-name>
      <param-value>localhost:8080</param-value>
   </context-param>
```

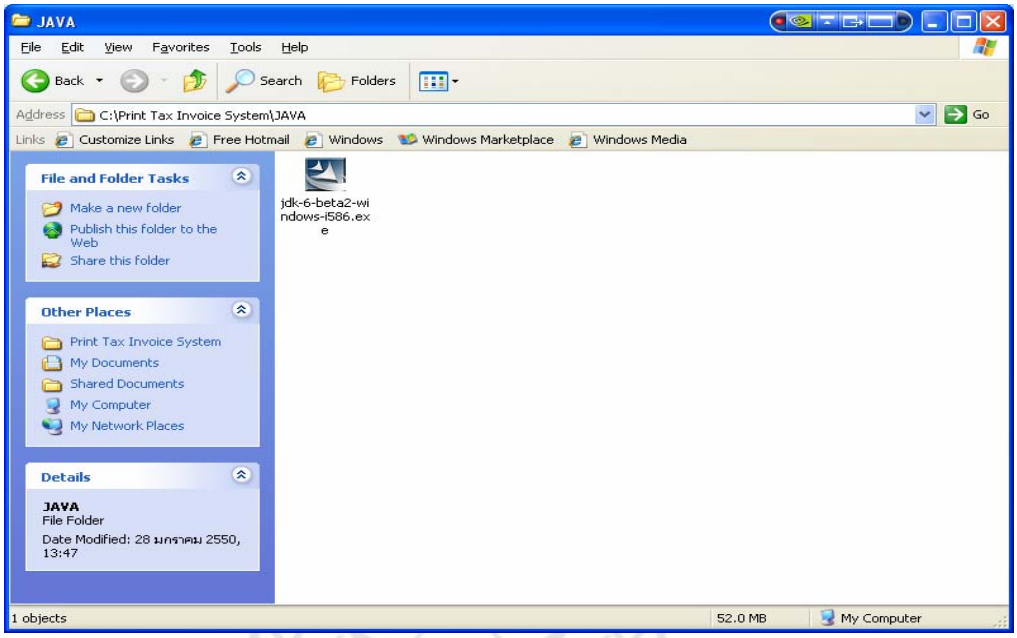
After that save file and update to sun application server.

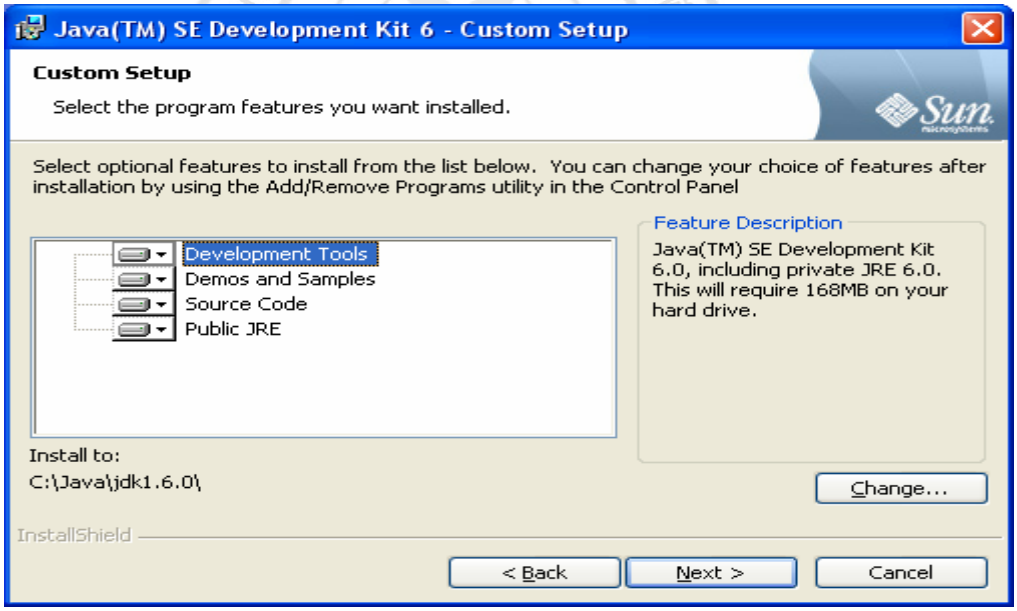
APPENDIX B

PROGRAM INSTALLATION MANUAL

Program Installation Manual

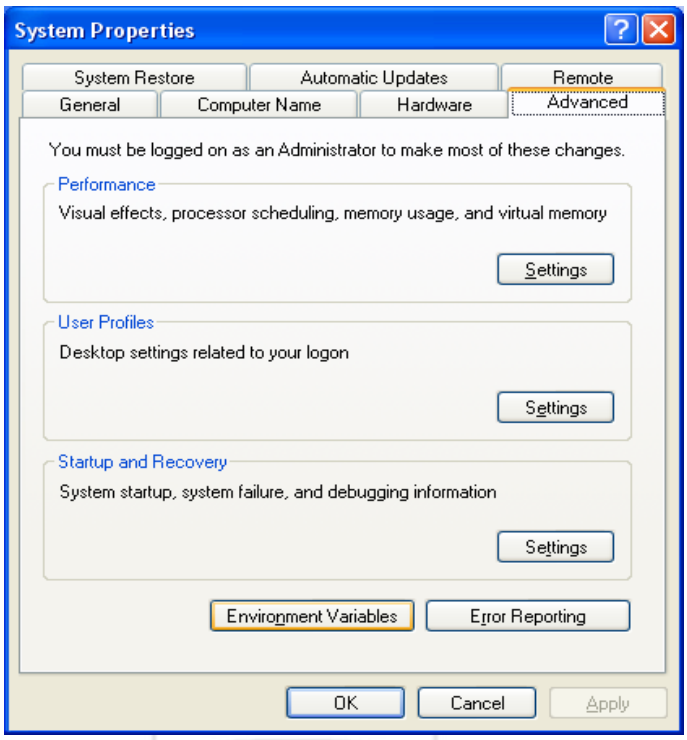
JAVA jdk 1.6 Installation





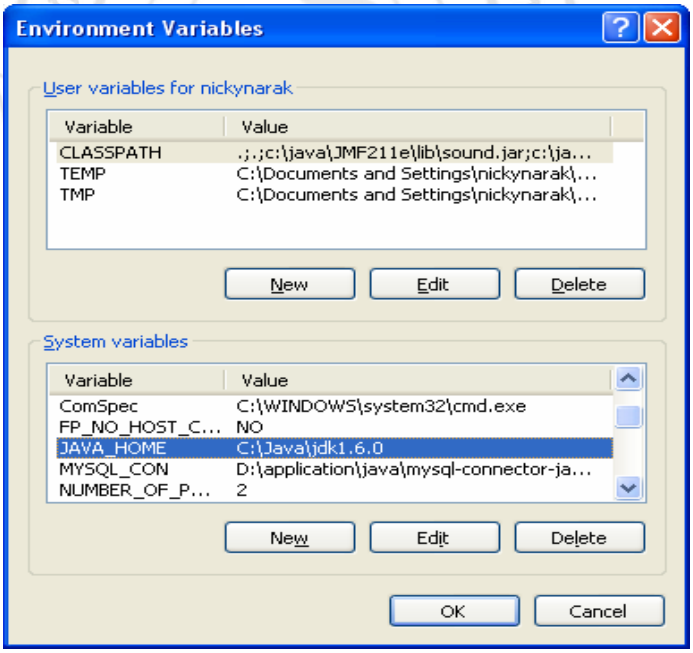
Double click on file.exe and Fix root directory to C:\Java\jdk1.6.0\ and set conform install wizard.

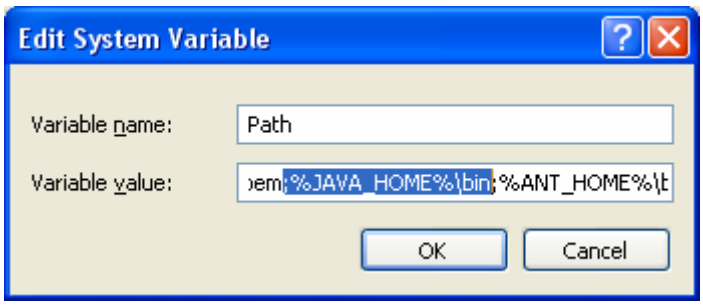
Fix Variable of system after install JAVA by right click my computer → Properties



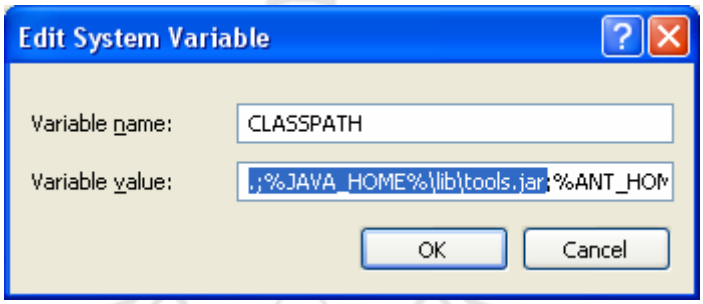
Then click Environment Variables

At system variable choose new button and create new variable name JAVA_HOME and fix variable value root at c:\java\jdk1.6.0

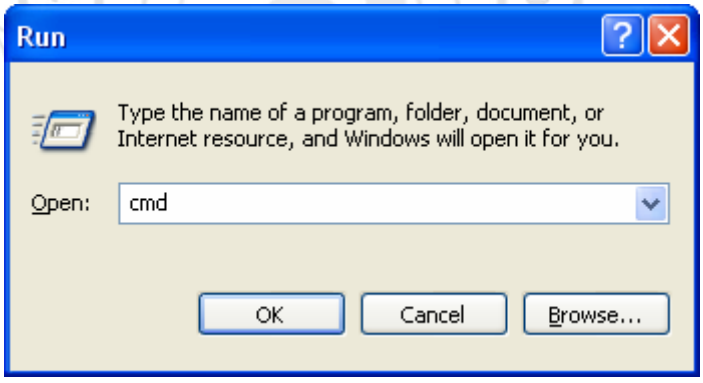




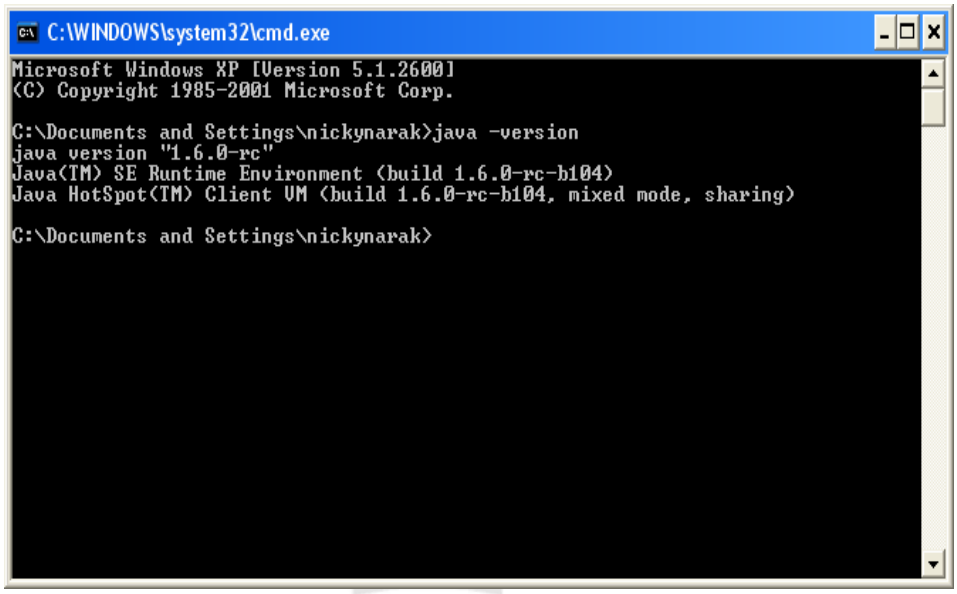
At system variable click Edit button and set variable value to .;%JAVA_HOME%\lib\tools.jar



Next step click ok to quit setting.
After that test environment setting by click on start button → run and type cmd and click ok.

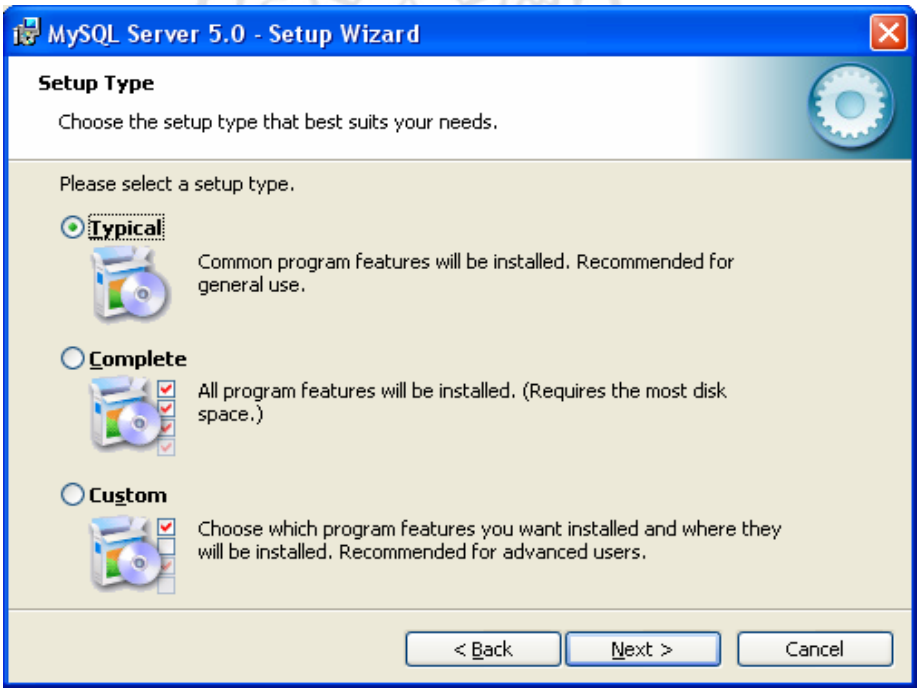


Type java –version on command prompt window that should be indicate java version and description.



Installation information can download from java.sun.com.

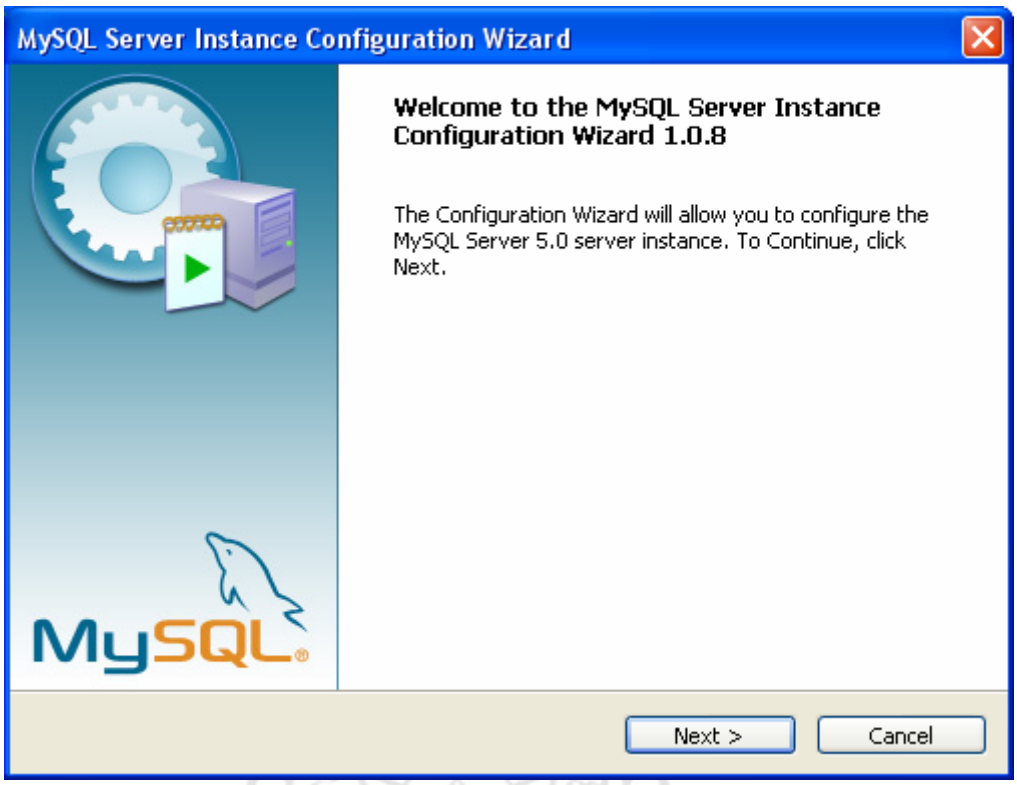
MySQL Installation



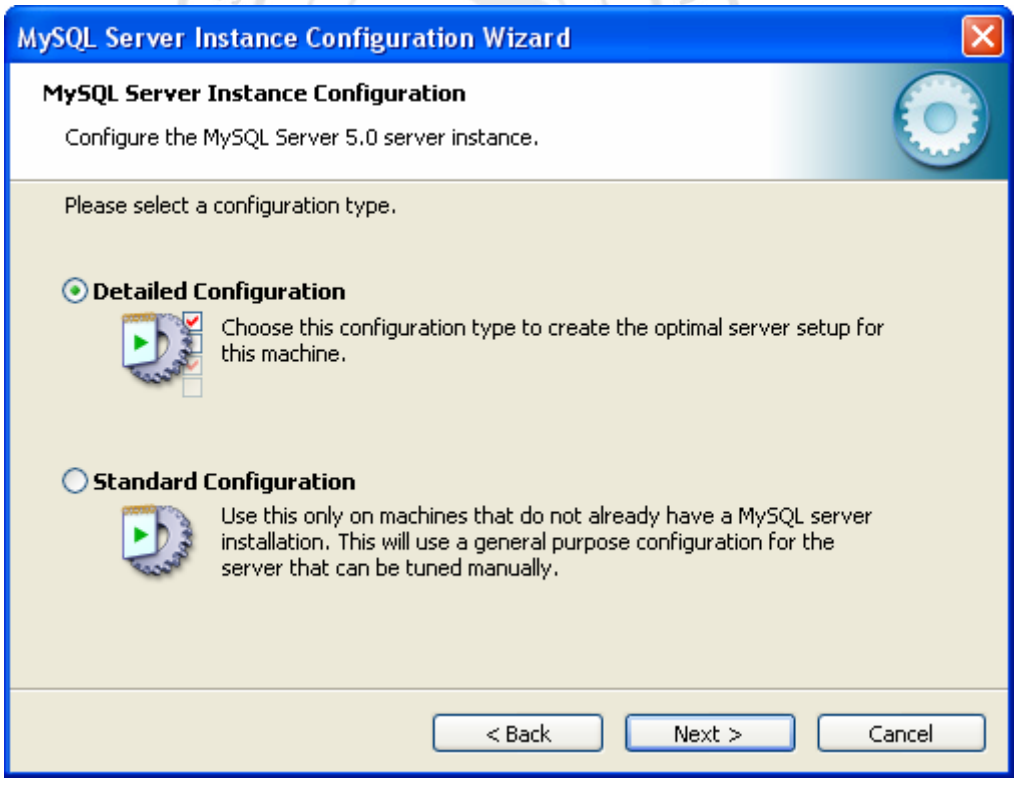
Then click Next button

Choose Skip Sign-Up then click Next

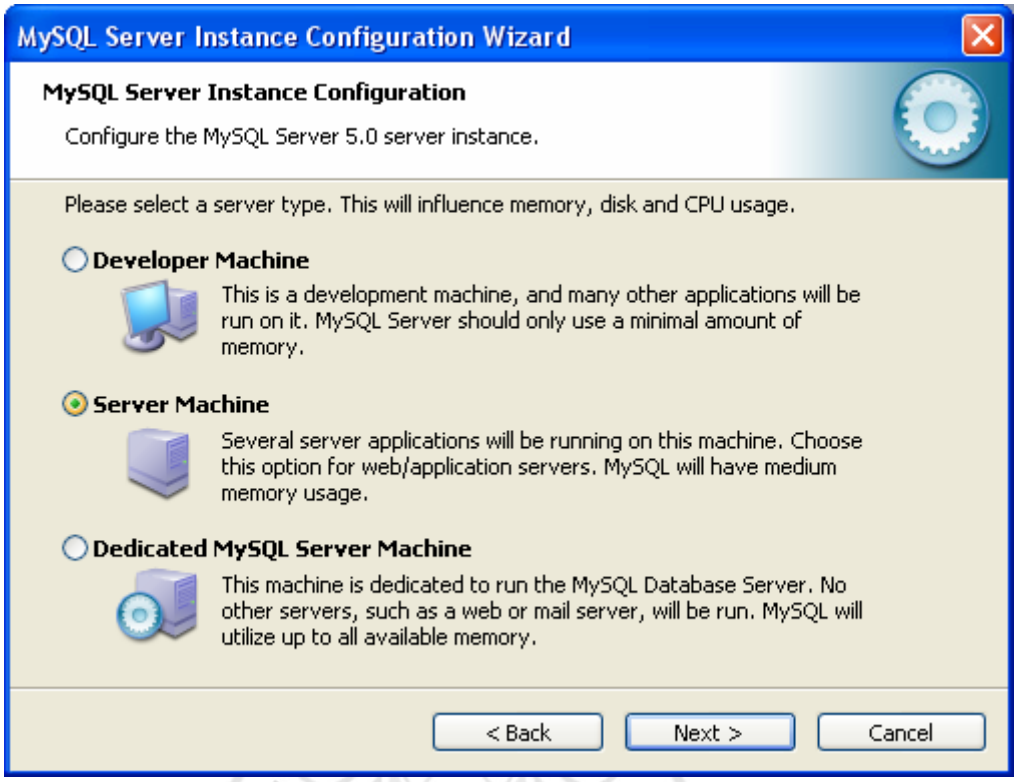
Then click Finish



Click Next button for configuration wizard

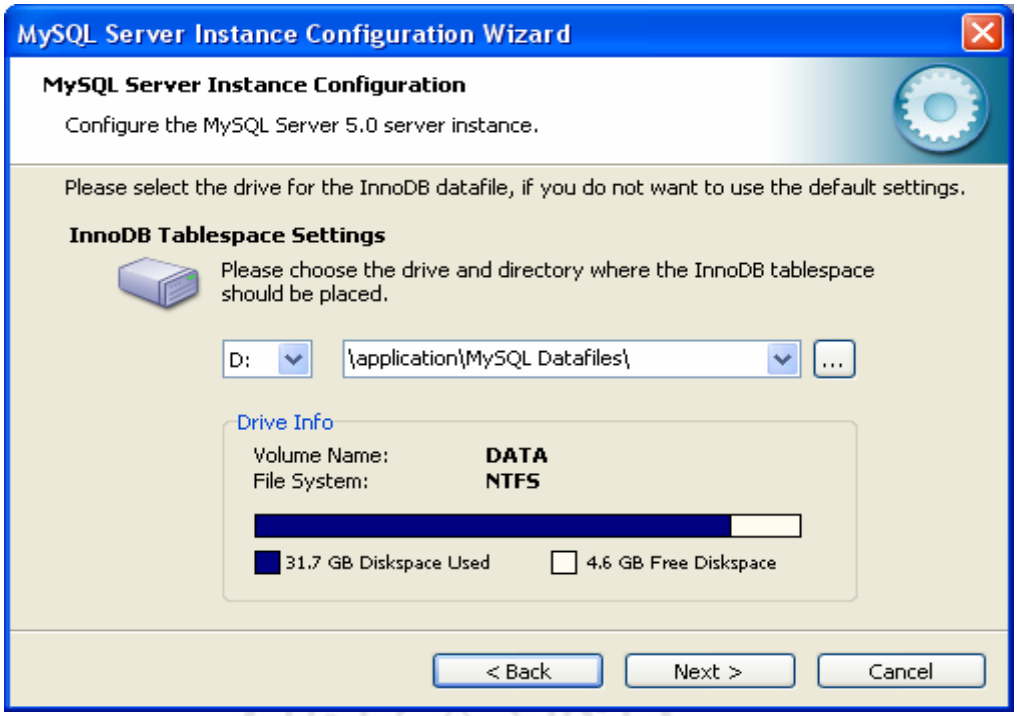


Choose Detailed Configuration then click Next button

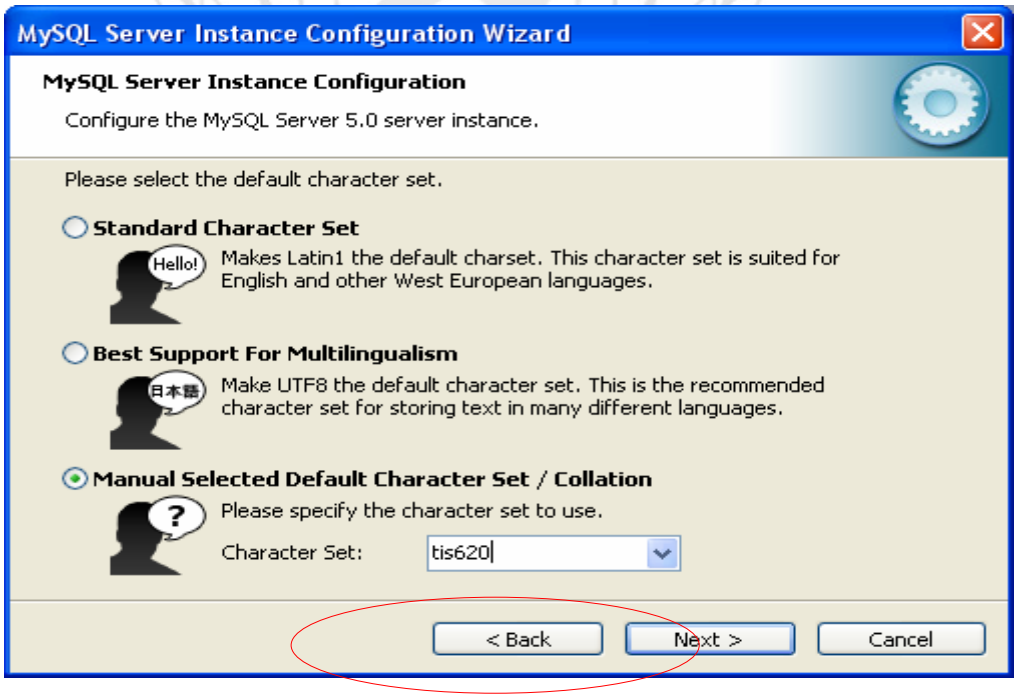


Choose Server Machine then click Next button

Choose Multifunction Database then click Next button

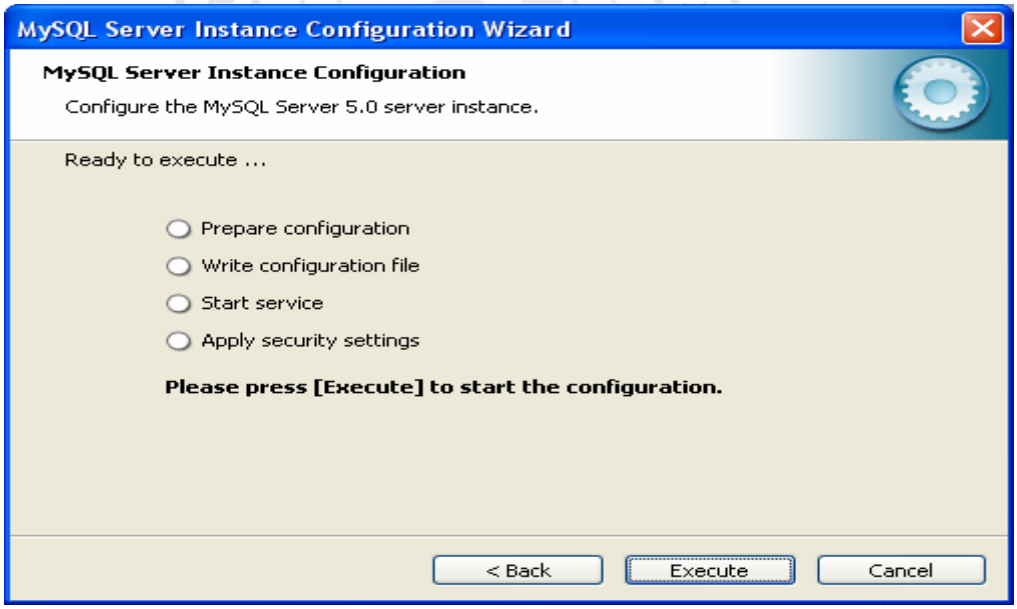


Choose drive and folder root directory that we would like to install which not the same drive with windows that prevent information lost if windows must be format.



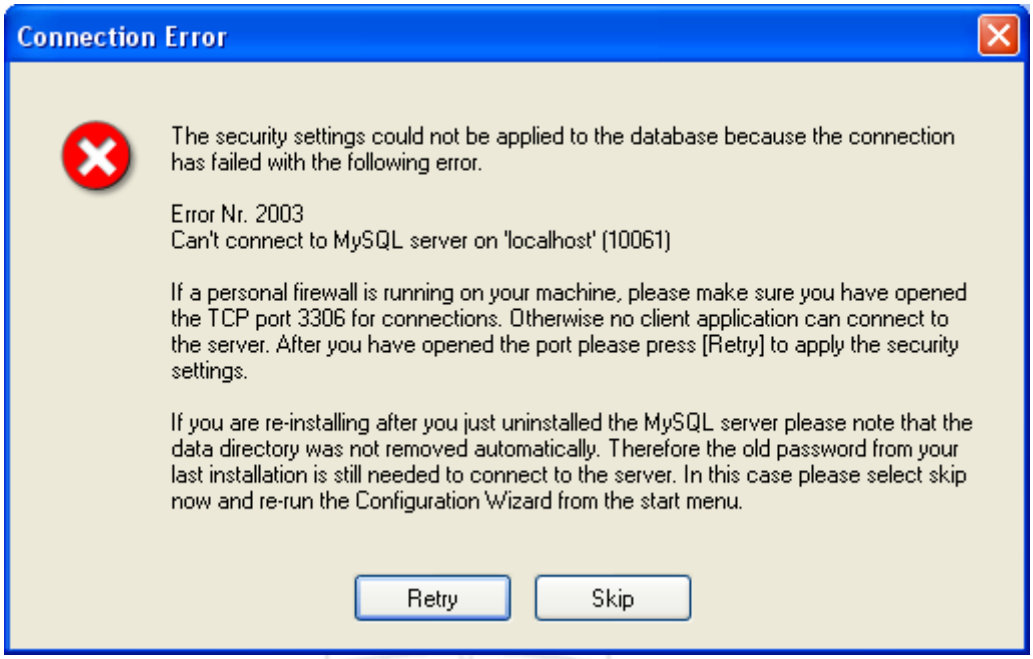
Choose Manual selected default character set/collation then click Next button

Choose Install as windows service and including bin directory in windows Path then click Next button. After that fill user name and password for database system that should be related with web.xml file.

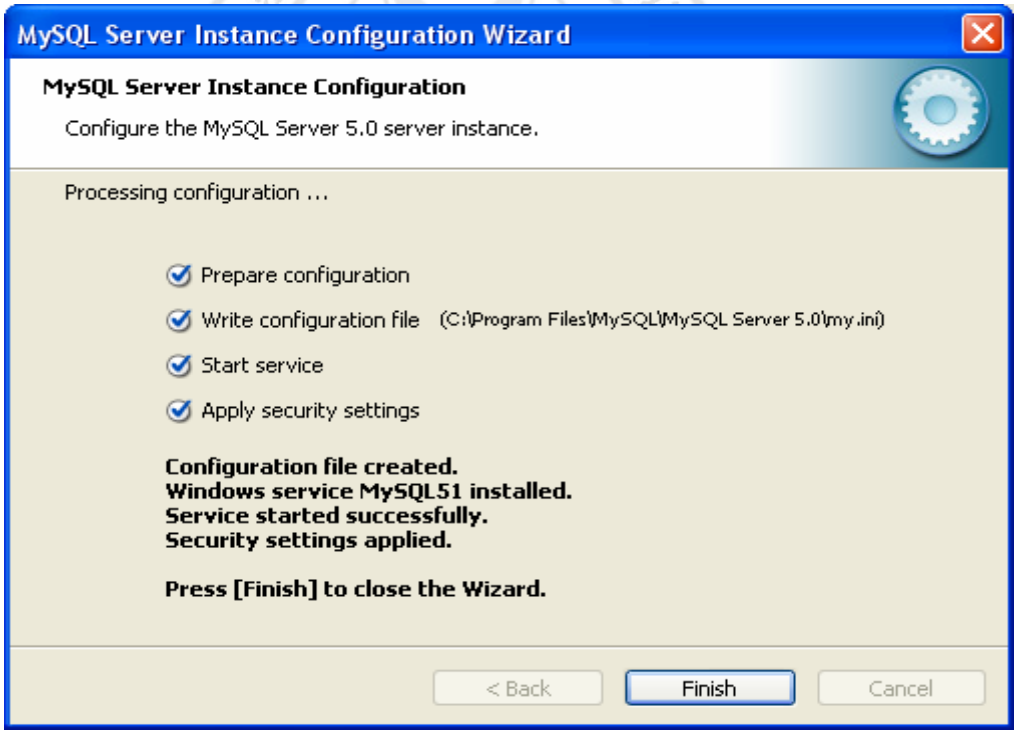


Then click Execute button

Trouble shooting



If it has error page occurred that should be click on retry button.



Then click Finish to install MySQL database

APPENDIX C

ARCHIVE OF SOURCE FILES

Archive of Source Files

Source files of this project have been divided in to three parts. The First part is JSP file that has located directory root directory. C:\Sun\AppServer\domains \domain1\applications\j2ee-modules\DailyNews. The Second part is java servelet source has located at root directory.C:\Sun\AppServer\domains\domain1\applications \j2ee-modules\DailyNews\WEB-INF\classes\news.The third part is MySQL database source code that generated by software tool keep in root directory. C:\Sun\AppServer \domains\domain1\applications\j2ee-modules\DailyNews\WEB-INF\sql.

APPENDIX D

DATA DICTIONARY

Data Dictionary

Organization	**The Government Public Relations Department**		**Function**		**Radio & Television Network Planning**	
Section	**Exploration and Planning for Radio & Television System**		**Department**		**Technical Promotion and Development Bureau**	
Creator	**Mr.Kachan Kannika**		**Update Date**		**10/04/2007**	
Table	**Name**	**Data Type**	**Null**	**PK**	**FK**	**Definition**
data_news	data_id	int(10)	No	/	/	News ID
	mov_link	varchar(15)	Yes			News Directory
	title	text	Yes			News Name
	description	text	Yes			News Context
	catalog_id	int(2)	Yes		/	News Category ID
	place_id	int(2)	Yes		/	News Place ID
catalog_type	catalog_id	int(2)	No	/		News Category ID
	catalog_name	varchar(30)	Yes			News Category Name
place_type	place_id	int(2)	No	/		Province ID
	place_name	varchar(30)	Yes			Province Name
user_news	user_id	varchar(15)	No	/		User Name
	password	varchar(15)	No			User Password
	firstname	varchar(30)	Yes			User First Name
	lastname	varchar(30)	Yes			User Last Name
	age	int(2)	Yes			User Age
	adds	varchar(50)	Yes			User Address
	tel	int(20)	Yes			User Telephone
	position	varchar(30)	Yes			User Position
	num_type	int(2)	Yes			User Type ID
	status_id	int(1)	Yes			User Status ID
status	statusid	int(1)	No	/		User Status ID
	statusname	varchar(11)	Yes			User Status Name
user_type	num_type	int(2)	No	/		User Type ID
	name_type	varchar(10)	Yes			User Type Name
upload	upload_id	int(10)	No			News Upload ID
	upload_date	date	Yes			News Upload Date
upload_list	upload_id	int(10)	No	/	/	News Upload ID
	Data_id	int(10)	No	/	/	News ID
	User_id	varchar(15)	No	/	/	User Name
	Num_update	int(2)	Yes			News Update Number

CURRICULUM VITAE

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