

Independent Study Title	Version Control System Implemented in PHP	
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ABSTRACT

This project is an attempt to implement a low cost version control system in PHP which can run on low cost web server platforms like Linux. Subversion, the popular existing system, is studied for its functionalities and techniques. The project implements basic version control functionalities, such as versioning, and concurrency handling. It uses MySQL, the database management system, to store and manage repository data. It provides a client application to interface with the system.

Delta compression is applied to reduce disk space of the storage. Content of a newly committed revision is stored as full text while content of the previous revision is replaced with a delta of the new content against the previous content. The size of the storage is $O(N)$, where N is a number of revisions. Time taken to reproduce content of a particular revision is $O(N - M)$, where N is a number of revisions and M is the requested revision number. As a result, content of the head revision takes $O(1)$ to be reproduced. The system has been deployed and tested on a Linux web server. For normal use, the system performs reasonably. The limitations of the system are numbers of revisions, bandwidth, and database disk space in the server.

Keyword: Version Control System / PHP