SYNOPSIS

College Name: D.Y. Patil Technical Campus, Faculty of Engineering and Faculty of Management, Talsande, Kolhapur
Course Name: Computer Science and Engineering

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Title Name: Version Control System

Abstract:

Version Control System (VCS) have been used by many software developers during project developments as it helps them to manage the source code and enables them to keep every version of the project they have worked on. It is the way towards managing, organizing, and coordinating the development of objects. In Software Engineering, software developers need to collaborate with each other to develop a better project. Thus, VCS is very useful because it also supports a collaborative framework that makes it easy for software developers to work together effectively. Without VCS collaboration is very challenging.

Keywords:

Version Control System, VCS, Source Code Management, Integrity.

Objective:

To provide a systematic approach to managing changes in software development projects
To facilitate track modification made to files.
To facilitate rollback to previous versions.
To ensure the integrity and consistency of project versions.

Literature Review:

Existing literature on VCS highlights their significance in modern software development practices.
Studied emphasize the benefits of using VCS in terms of improving team productivity, code quality and project management efficiency. Various VCS tools like Git, SVN, and Microsoft VSS have been extensively studied and compared based on their features, performance, and stability for different project requirements.

Methodology:

The methodology of VCS involves the implementation of algorithms and protocols to manage file versions, track changes. These includes techniques for versioning files, resolving conflicts and ensuring data integrity.
Common methodologies employed by VCS include centralised, distributed and hybrid approaches, each offering different trade-offs in terms of scalability, performance, and flexibility.

System Architecture:

The architecture of version control system typically consists of three main components as: Source Code, Repository and Command Line User Interface. Here the system pushes the code changes to its defined repository and branch including commits.

System Specifications:

Operating System used: Windows.
Programming Language used: C++ 17
Compiler used: G++ compiler.
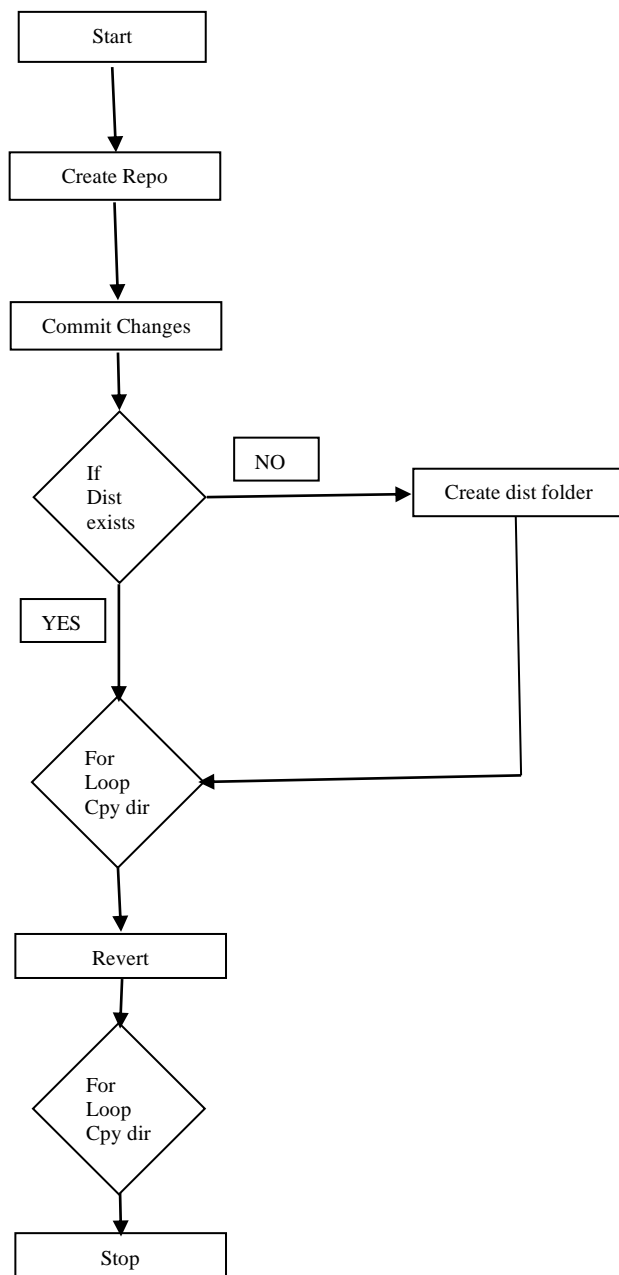
Data Flow Diagram:

Fig. Version Control System DFD

Conclusion:

This version control system provides mechanisms for managing changes and ensuring the integrity of project versions.
By implementing robust methodologies and architecture, VCS enables teams to work efficiently, track progress, and maintain code quality throughout the development lifecycle.

Reference:

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Geeks for Geeks

Student Name	Roll No.	Sign
Prajwal Shripati Jadhav	2016	
Nikhil Gurudev Lonari	2017	
Omkar Bajrang Bhosale	2007	

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