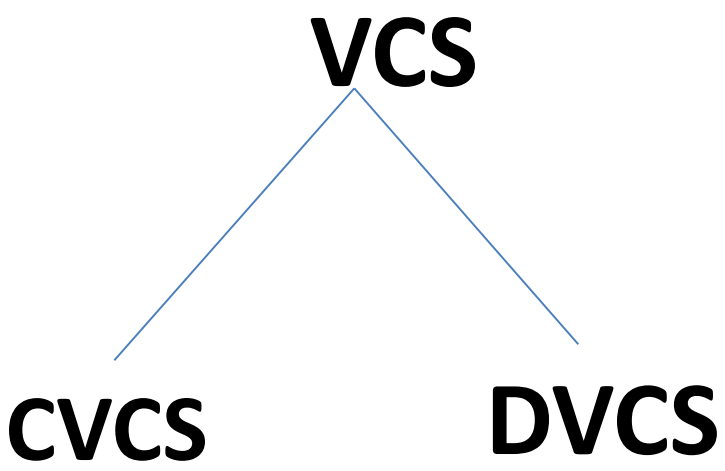
VERSION CONTROL SYSTEMS BASIC CONCEPTS

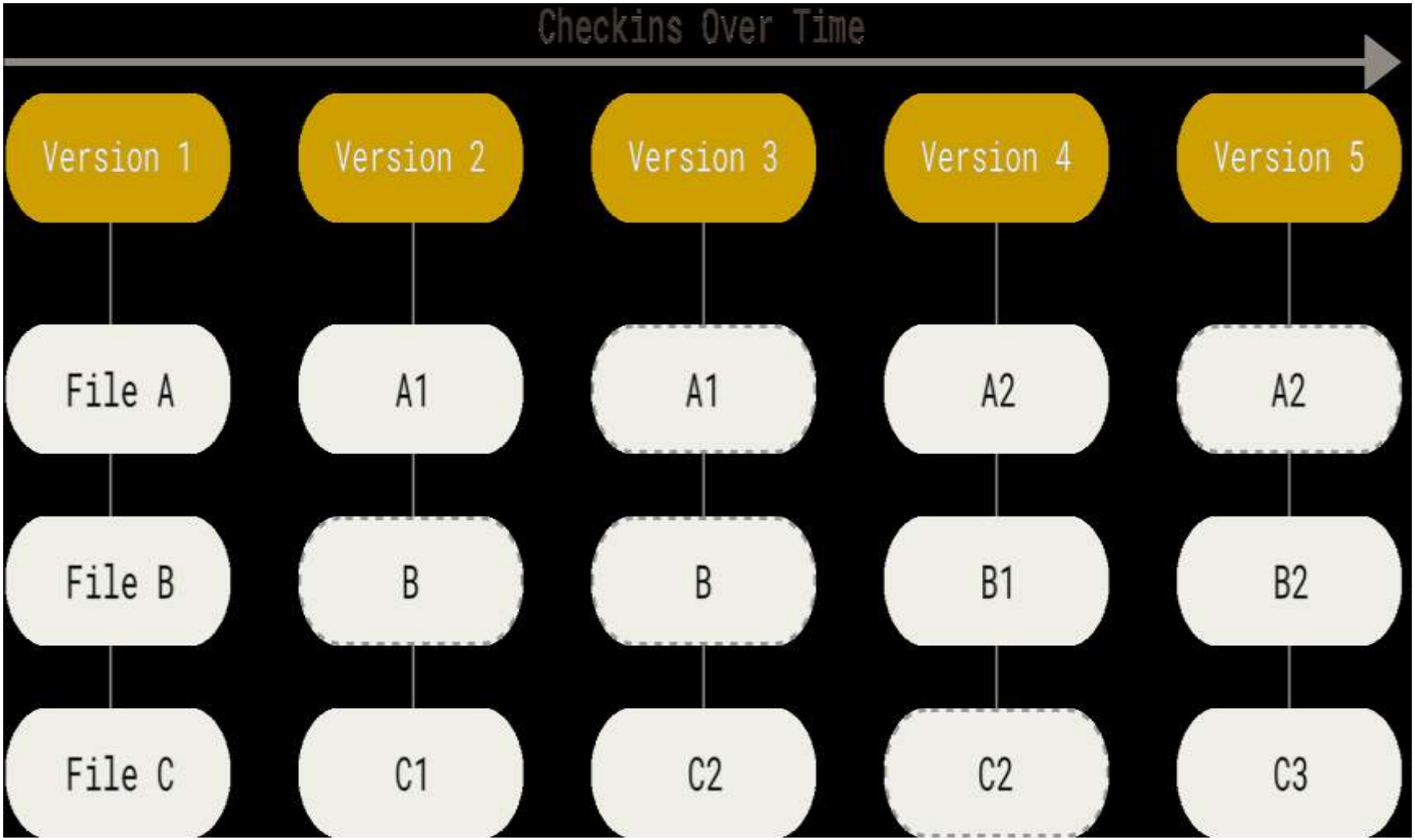
Version Control System

- **Version Control System (VCS)** is a software that helps software developers to work together and maintain a complete history of their work.
- Listed below are the functions of a VCS –
  - Allows developers to work simultaneously.
  - Does not allow overwriting each other's changes.
  - Maintains a history of every version.

- Following are the types of VCS –
  - Centralized version control system (CVCS).
  - Distributed/Decentralized version control system (DVCS).



Storing data as snapshots of the project over time



The Three States

- Git has three main states that your files can reside in: ***modified, staged and committed:***
- Modified means that you have changed the file but have not committed it to your database yet.
- Staged means that you have marked a modified file in its current version to go into your next commit snapshot.
- Committed means that the data is safely stored in your local database.

This leads us to the three main sections of a Git project: the working tree, the staging area, and the Git directory.

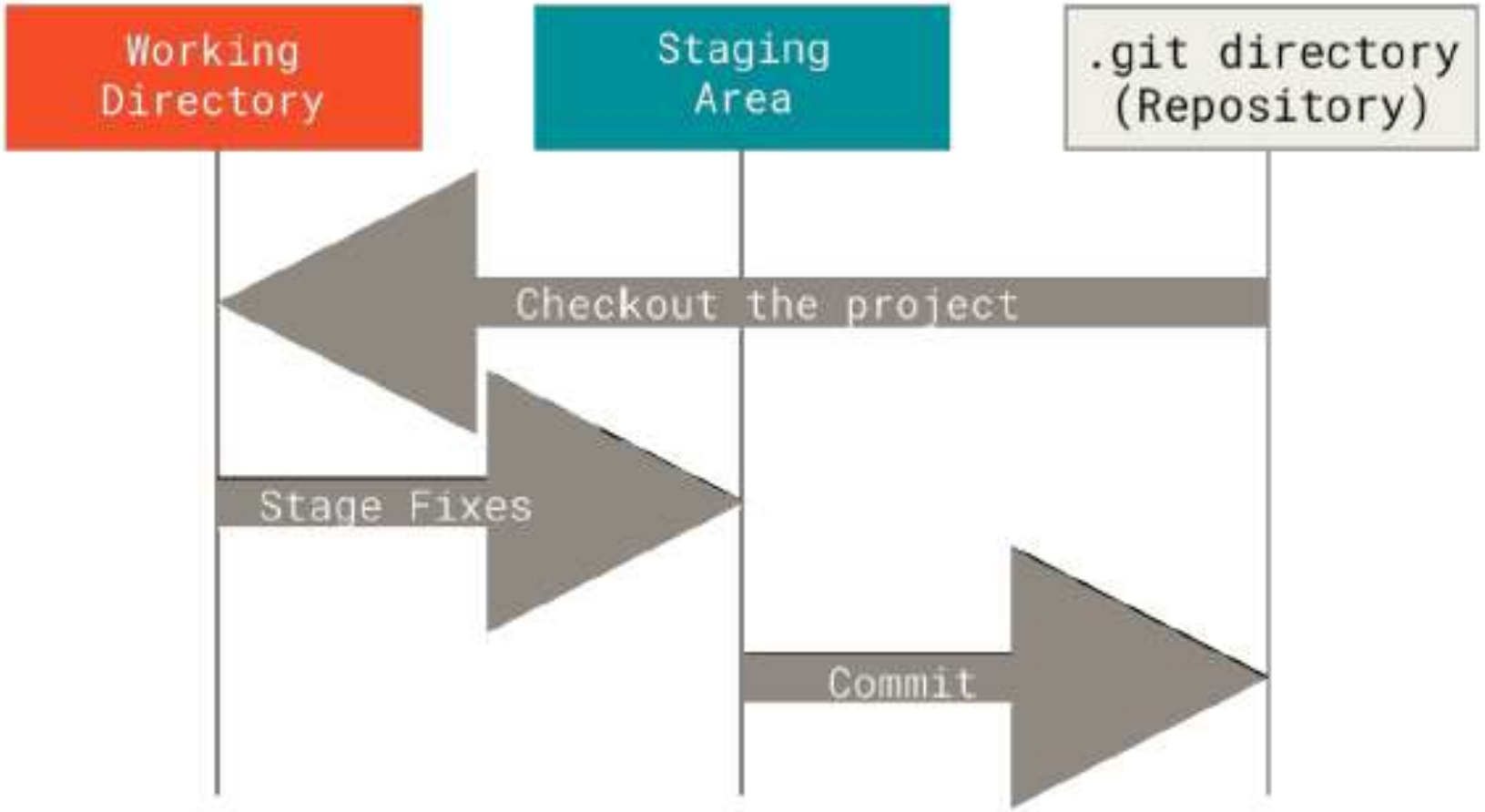


Figure 6. Working tree, staging area, and Git directory

- The working tree is a single checkout of one version of the project. These files are pulled out of the compressed database in the Git directory and placed on disk for you to use or modify.
- The staging area is a file, generally contained in your Git directory, that stores information about what will go into your next commit. Its technical name in Git parlance is the “index”, but the phrase “staging area” works just as well.