GIT- Distributed Version Control System

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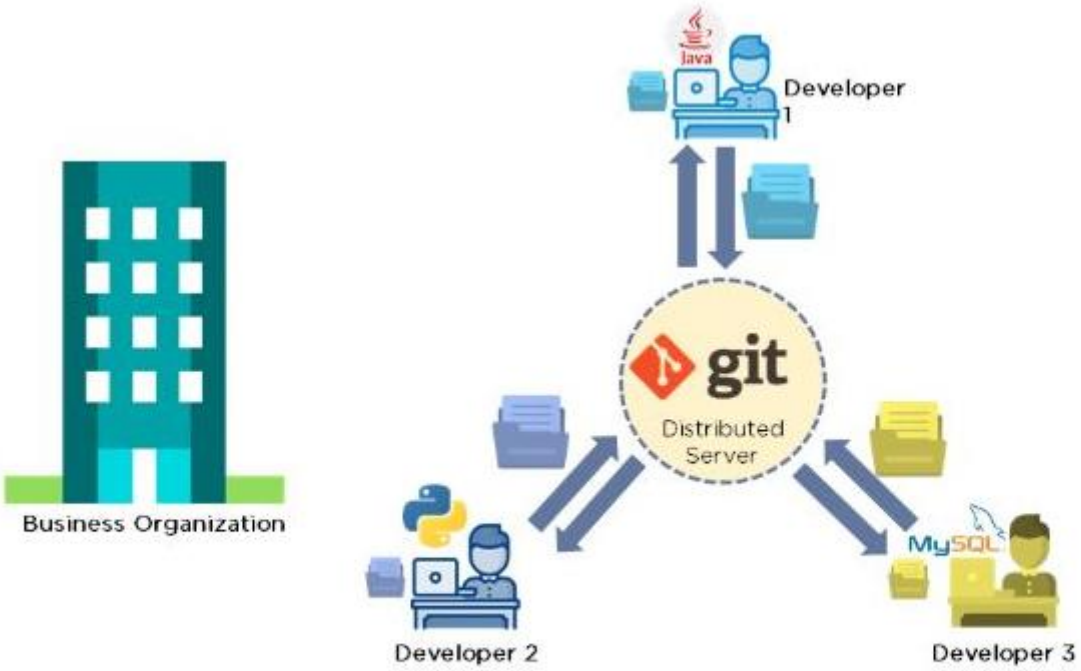
CVS – Concurrent Versioning System

- CVS is primarily used as a source code control system for text files.
- Programmers will generate revisions to individual source code files.
- A collection of these files may define a specific software release.
- CVS aims to manage the collection of these files and the respective revisions of the individual files that make up the collection.

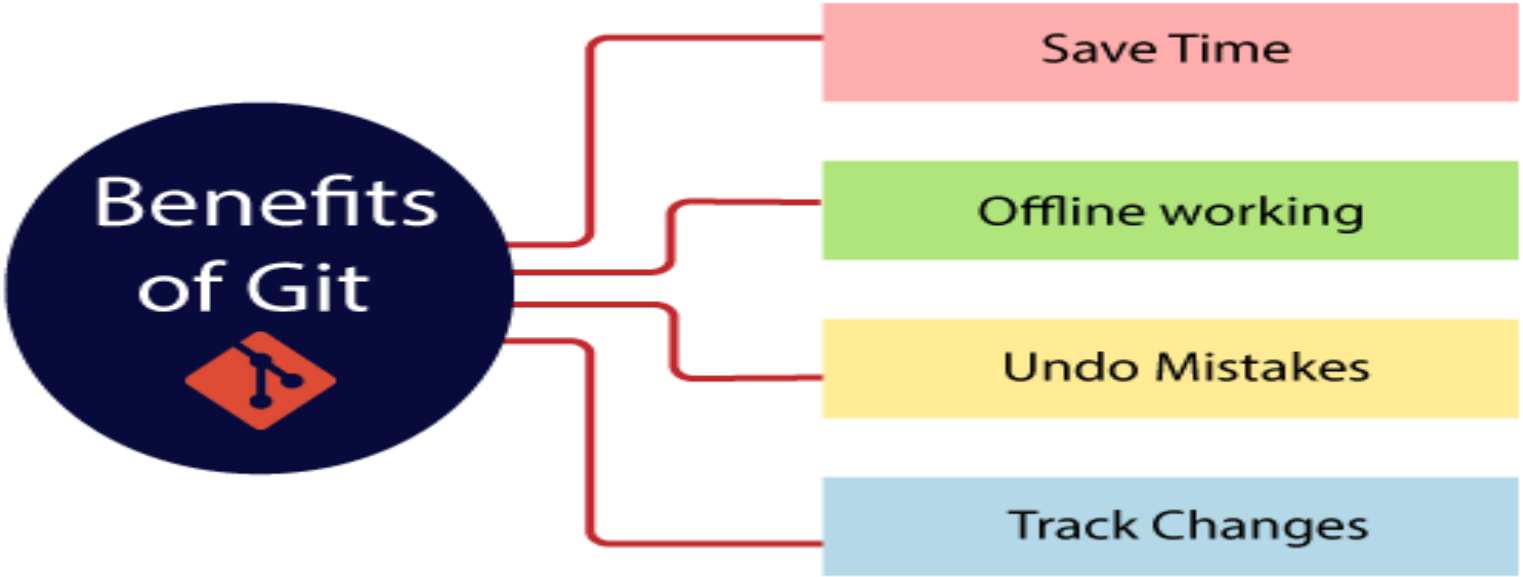
GIT

- **Git** is an **open-source distributed version control system**.
- It is designed to handle minor to major projects with high speed and efficiency.
- It is developed to co-ordinate the work among the developers.
- The version control allows us to track and work together with our team members at the same workspace.

GIT – Big Picture



Benefits of GIT



Benefits of GIT

- Saves Time:
  - Git is lightning fast technology. Each command takes only a few seconds to execute so we can save a lot of time

- Offline Working
  - One of the most important benefits of Git is that it supports offline working.
  - If we are facing internet connectivity issues, it will not affect our work.

- Undo Mistakes
  - One additional benefit of Git is we can Undo mistakes.
  - Sometimes the undo can be a savior option for us.
  - Git provides the undo option for almost everything.
- Track the Changes
  - Git allows to track changes so we can check the status, compare our files or branches.

CVS Terminology

- Repository:
  - The most fundamental unit.
  - Essentially a project folder.
  - It saves every file of a project.
- Commit:
  - A commit is like saving an updated file to its original folder.
- Clone :
  - Copy of a repository that stores in developer’s system instead of storing on server.
- Branch:
  - Parallel version of a repository
  - It does not affect the master / primary branch

CVS terminology . . .

- Fetch:
  - Refers to getting the latest changes from the repository
- Push:
  - Refers to sending the committed changes.
- Issues:
  - Suggested improvements for the project.
- Merge:
  - Merging takes the changes from one branch and applies them into another.
- Checkout:
  - Every checkout is a full backup of the repository.

CVS terminology . . .

- Working Directory:
  - The working directory is the place where files are checked out.
- Staging Area :
  - The staging area, is what files are going to be a part of your next commit.
  - It's how Git knows what is going to change between the current commit and the next one.

GIT StagingArea Ex.

```
# First commit
[bash]$ git add sort.c

# adds file to the staging area
[bash]$ git commit -m “Added sort operation”

# Second commit
[bash]$ git add search.c

# adds file to the staging area
[bash]$ git commit -m “Added search operation”
```

GIT - Workflow

- Every Git directory on every computer is a full-fledged local repository with.,

  - complete history and full version tracking abilities.
  - independent of network access or a central server.
  - This is the key feature that enables remote repositories on github and still manage versions completely on local repository.

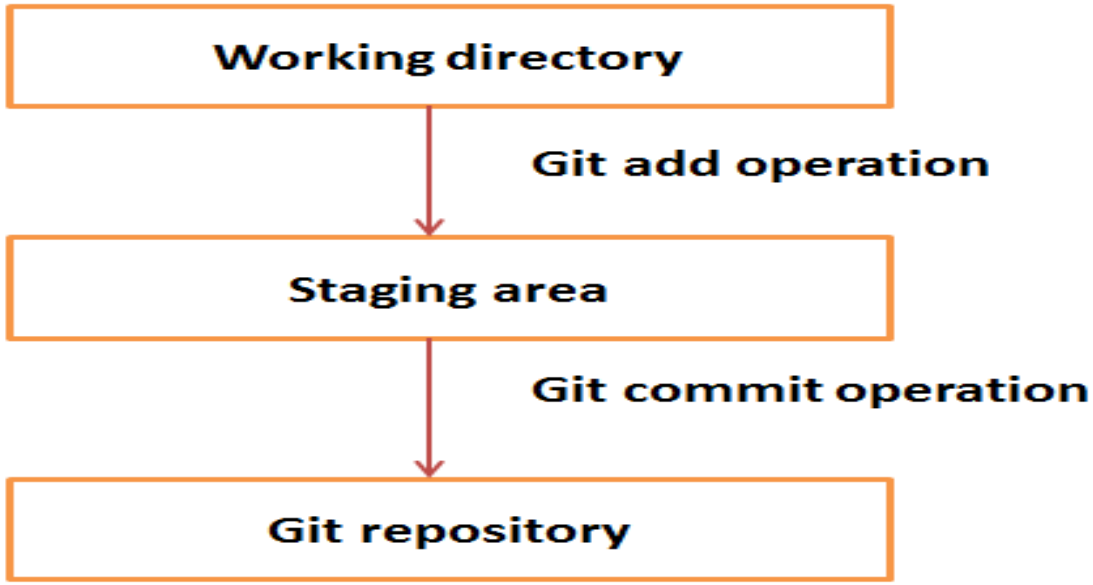
** Show Diagram

GIT Workflow . . .

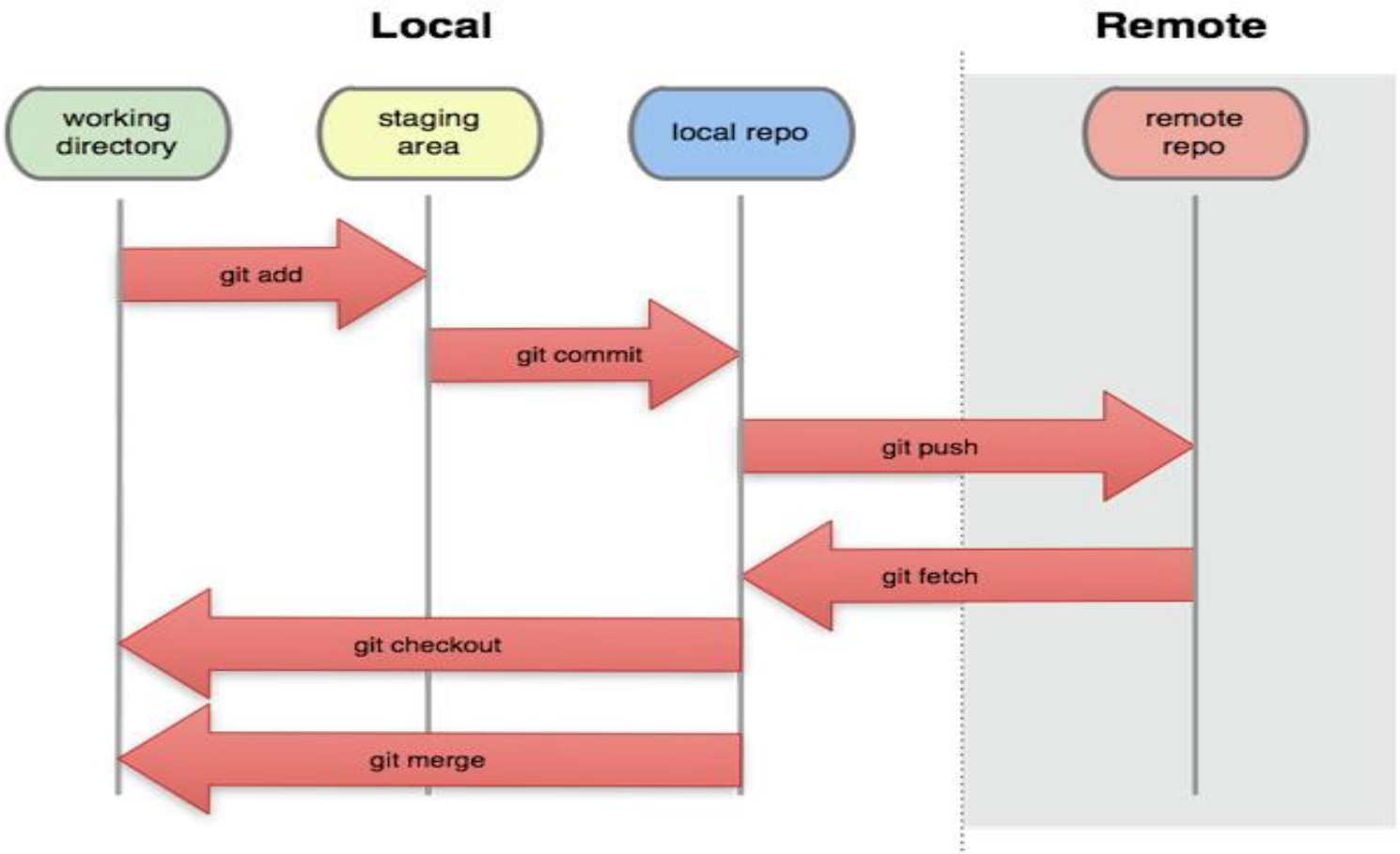
Step 1 – You modify a file from the working directory.

Step 2 – You add these files to the staging area.

Step 3 – You perform commit operation that moves the files from the staging area. After push operation, it stores the changes permanently to the Git repository.



GIT Workflow . . .




return
THANK
YOU
control