



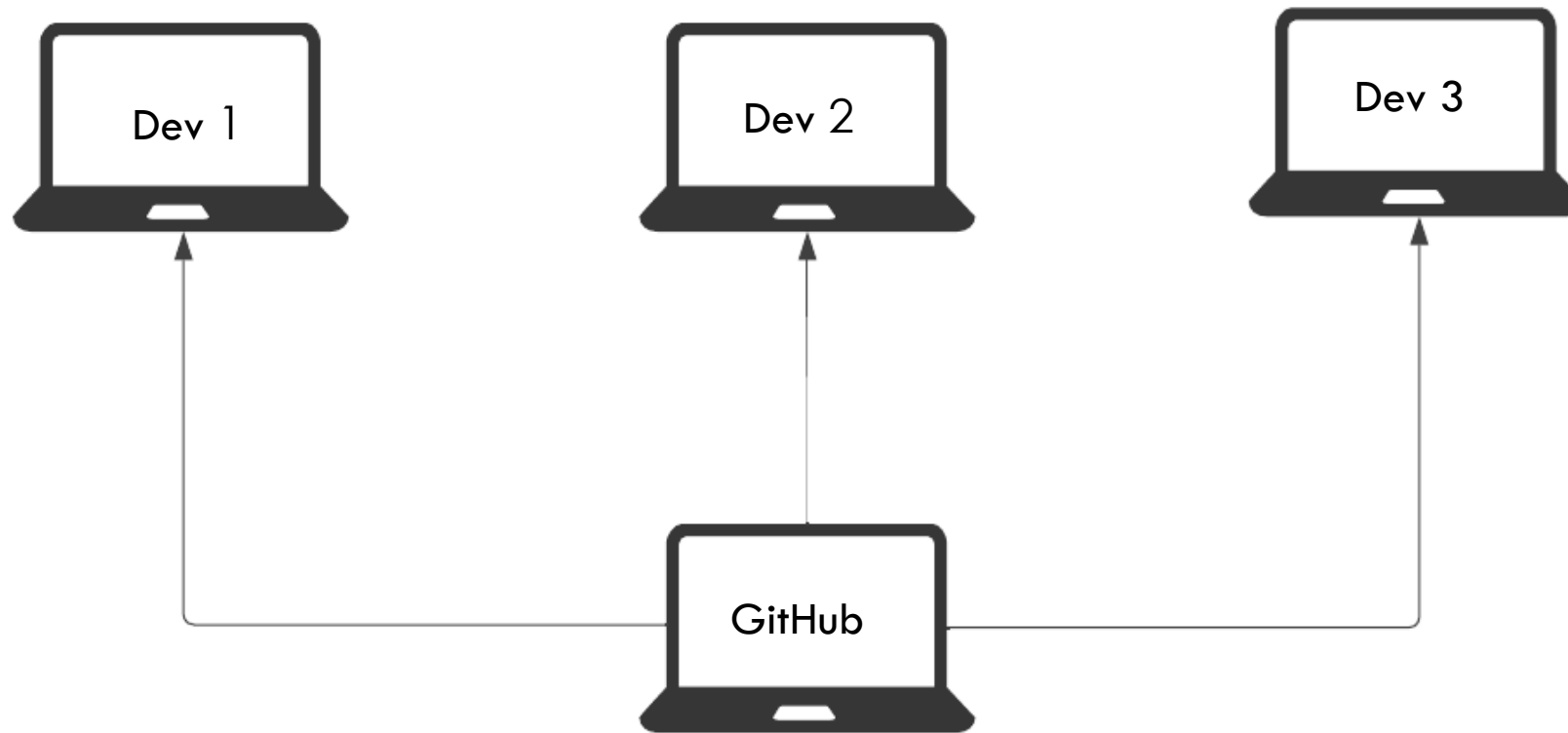
Git and GitHub Terms

Spark and Build Class

Commonly used terms

- **Version control system (VCS)** - it is a system that records changes to a file or set of files over time so that you can recall specific versions later. They can track changes, and allow collaboration, rollback changes, and documentation.
- **Distributed VCS** - Git is a distributed version control system, which means that each developer has their own complete copy of the repository, including its entire history. This allows developers to work offline and makes it easy to recover from data loss or corruption.

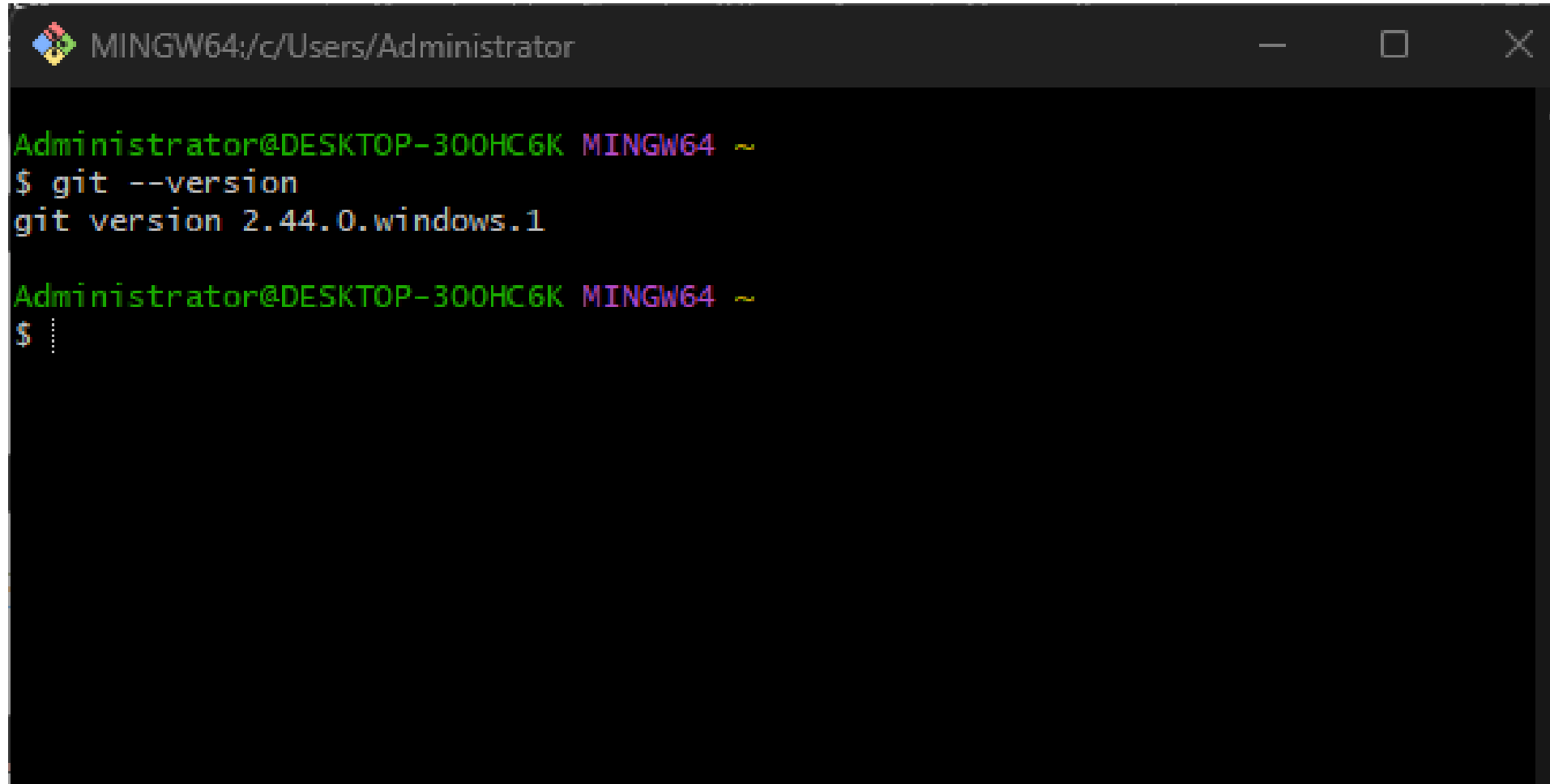
Distributed Version Control System



Commonly used terms

- **Git Bash** - Git Bash is an application for Microsoft Windows environments that provides an emulation layer for a Git command line experience. Bash is an acronym for Bourne Again Shell. A shell is a terminal application used to interface with an operating system through written commands.

GitBash Window



```
MINGW64:/c/Users/Administrator

Administrator@DESKTOP-300HC6K MINGW64 ~
$ git --version
git version 2.44.0.windows.1

Administrator@DESKTOP-300HC6K MINGW64 ~
$
```

Commonly used terms

- **Working folder** - also known as a working tree or working copy, is a directory on your local machine where you have a copy of a Git repository and where you can make changes to files.
- **Staging environment** - a space where you can prepare changes before committing them to your local repository. It's a step between modifying files and committing those changes to your local repository. It is also referred to as 'INDEX'

Concept Diagram



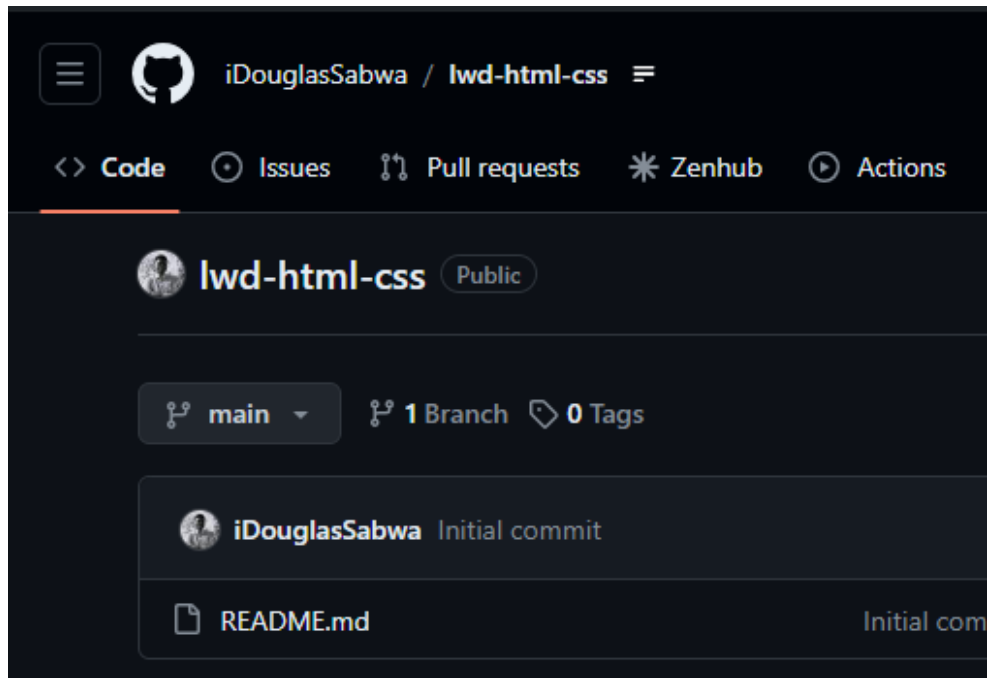
Spark and Build Class

Commonly used terms

- **Repository (repo)** - is a collection of files and directories managed by Git, a distributed version control system. It stores the entire history of changes to the files in the project, along with metadata such as who made the changes and when. A repo can either be local or remote.

Repository (repo)

i) Remote Repository (GitHub servers)



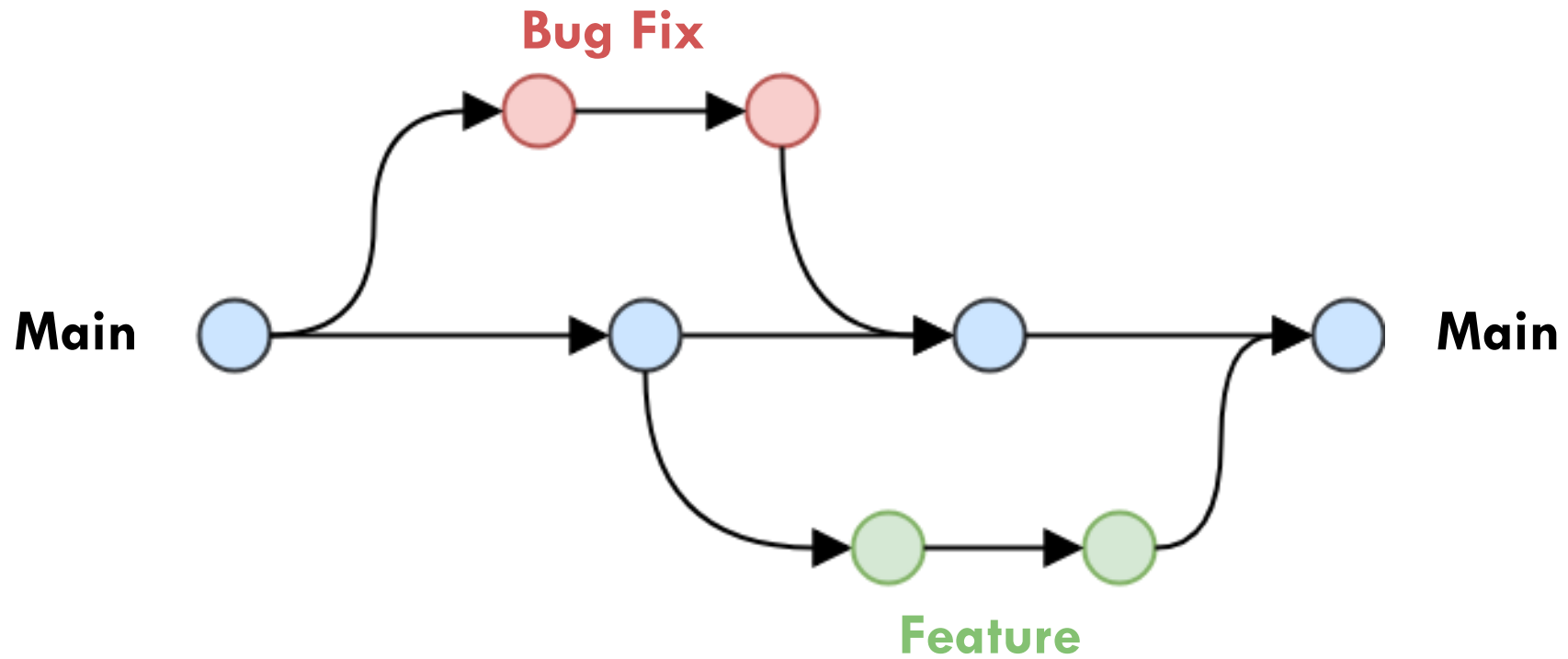
ii) Local Repository (Your PC)

Name	Date modified
.git	12/03/2024 08:13
css	15/02/2024 23:28
images	04/03/2024 21:02
colors	26/02/2024 00:29
douglas	05/03/2024 21:51
external	15/02/2024 23:20
form	07/02/2024 23:34
index	23/01/2024 21:49

Commonly used terms

- **Branch** – A branch is a parallel version of a repository's code. It allows you to work on different features, fixes, or experiments without affecting the main codebase. Branches are commonly used for feature development and bug fixes
- **Main** - The default development branch. Whenever you create a git repository, a branch named "main" is created, and becomes the active branch. You can always change this in the configuration settings.

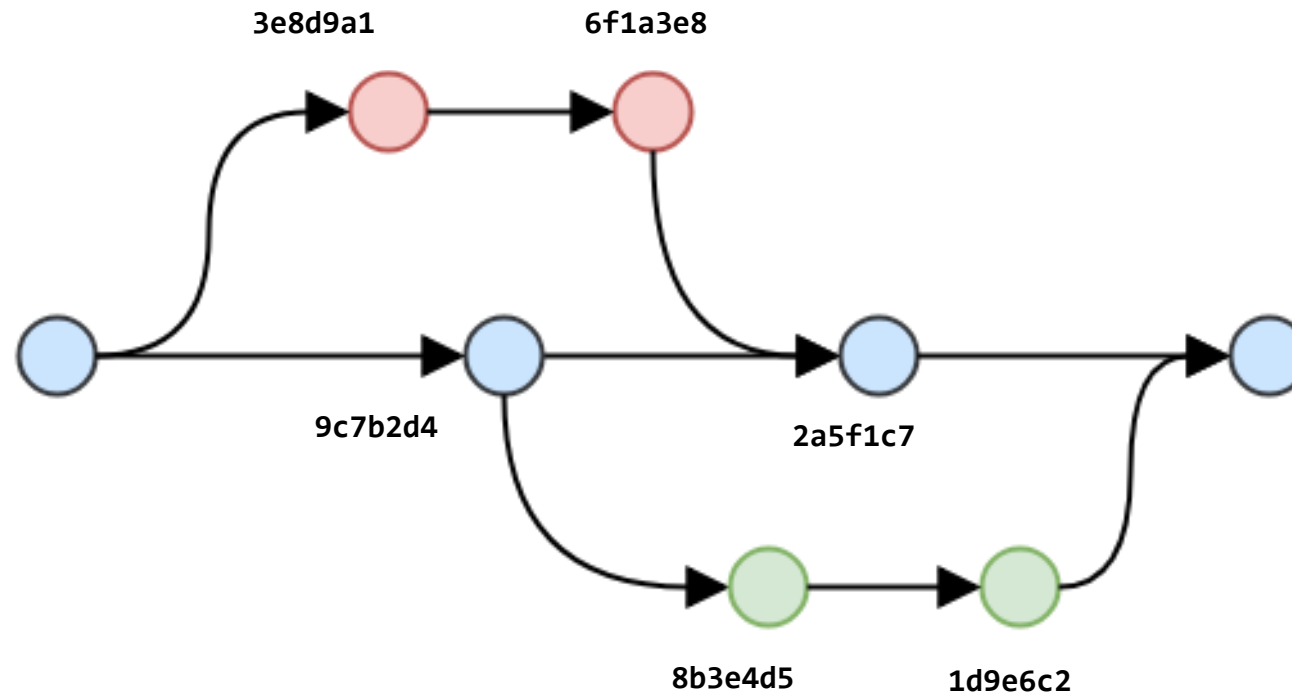
Git Branches



Commonly used terms

- **Commit** – A commit is a snapshot of changes made to a repository at a specific point in time. Each commit has a unique identifier (hash), a commit message describing the changes, and information about the author.

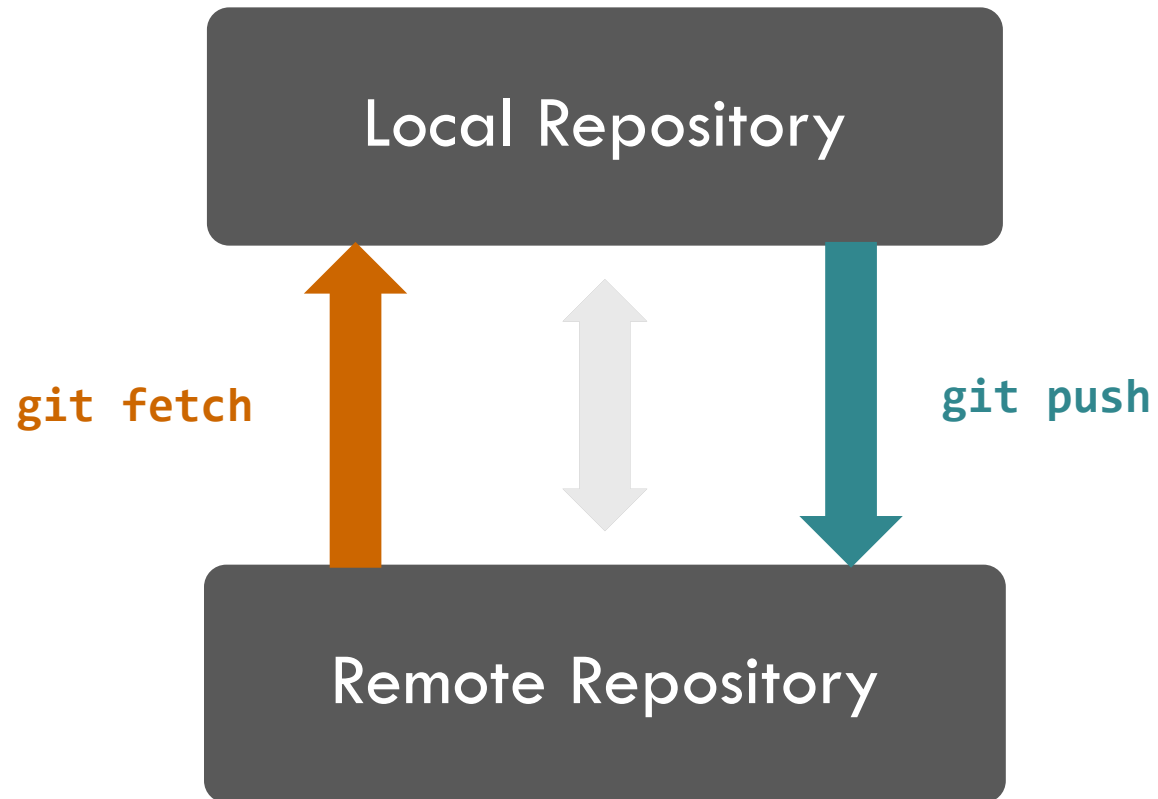
Git Commits



Commonly used terms

- **Push** – Pushing is the process of uploading your local changes to a remote repository. It updates the remote repository with your latest commits.
- **Fetch** – Fetching is the process of downloading changes from a remote repository to your local repository without merging them into your current branch. It updates your local repository with the latest changes from the remote repository.

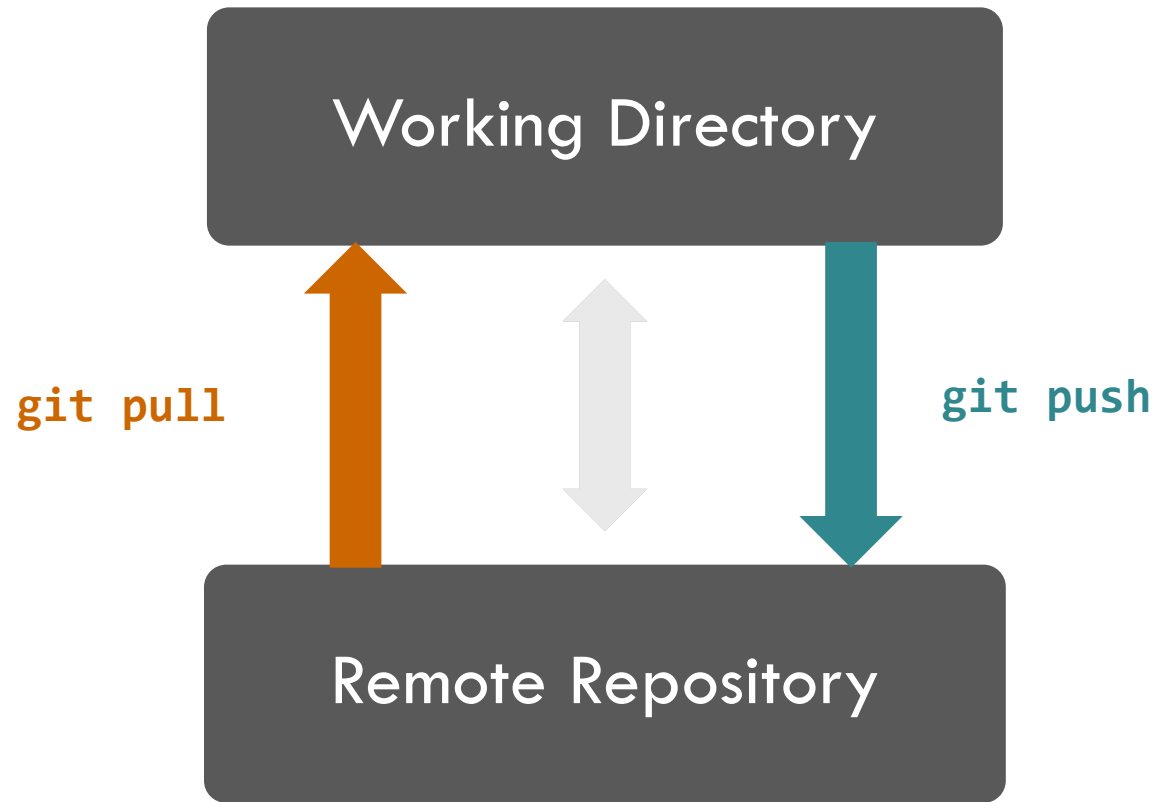
Pushing and Fetching



Commonly used terms

- **Pull** – Pulling is the process of fetching changes from a remote repository and merging them into your current branch. It's a combination of the `git fetch` and `git merge` commands.
- **Merge** – Merging is the process of combining changes from one branch (source branch) into another branch (target branch). It's often used to integrate the changes made in feature branches back into the main branch.

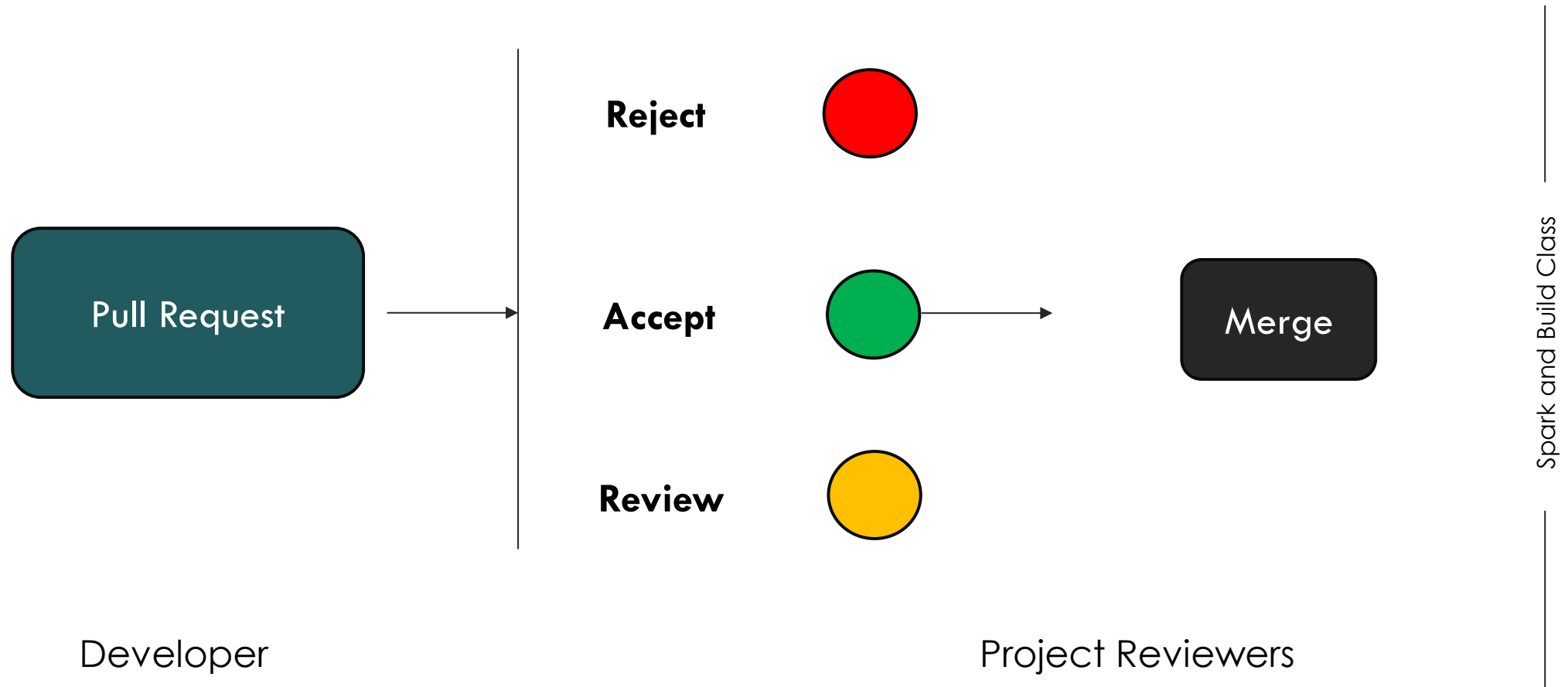
Pulling



Commonly used terms

- **Pull Request (PR)** – A pull request is a request to merge changes from one branch into another. It's commonly used in collaborative development workflows, allowing contributors to propose changes, discuss them, and review them before they are merged.

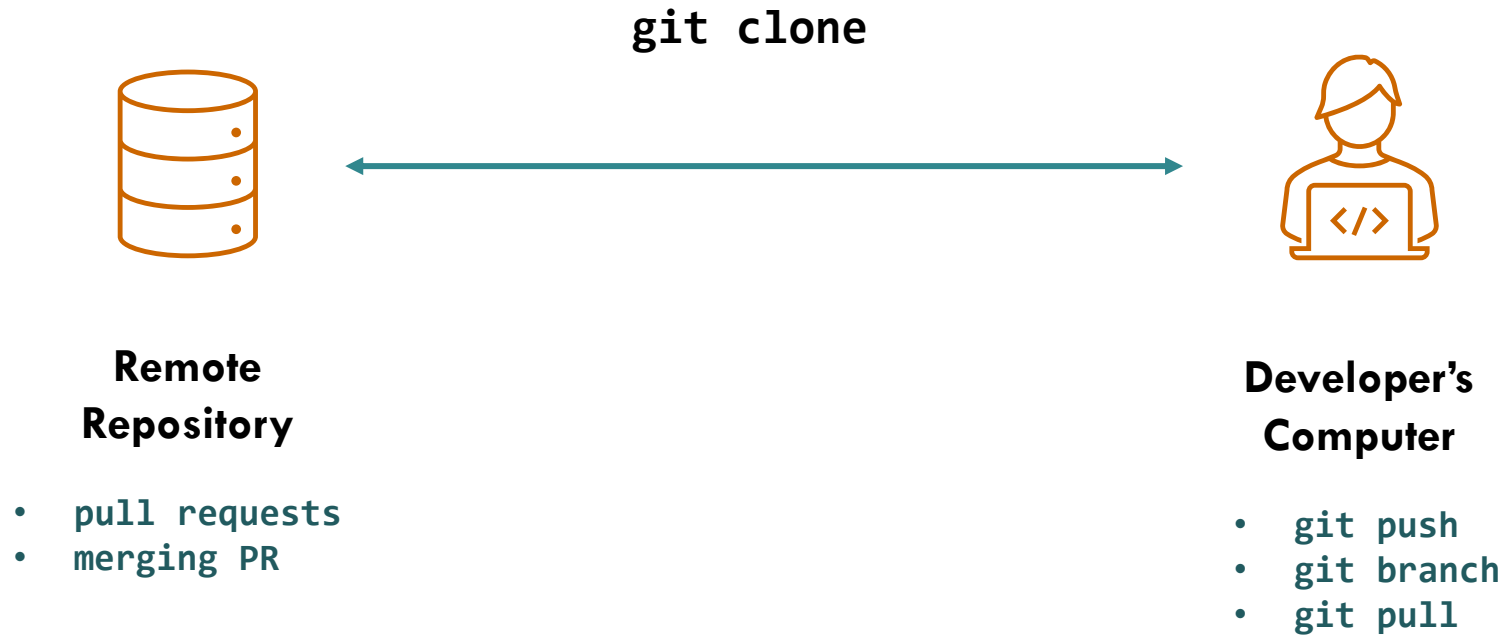
Pull Request (PR)



Commonly used terms

- **Clone** – Cloning a repository creates a local copy of it on your computer. You can clone repositories from remote servers (like GitHub, GitLab, or Bitbucket) to work on them locally, make changes, and push those changes back to the remote repository.

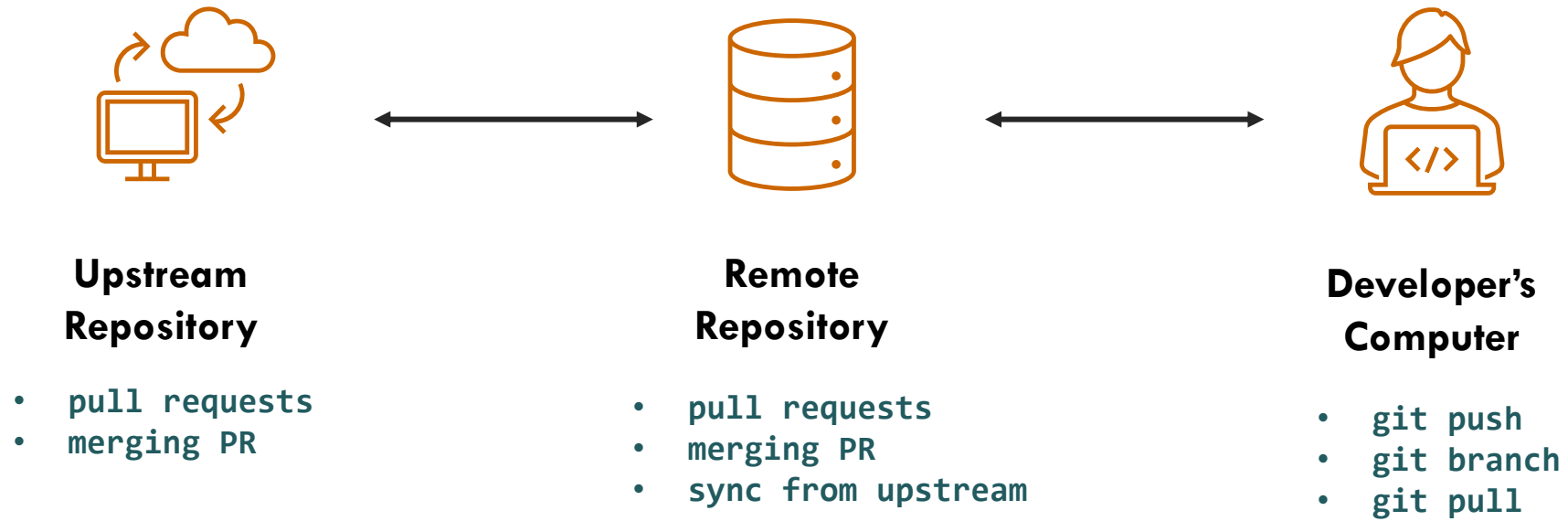
Cloning



Commonly used terms

- **Fork** – A fork is a copy of a repository. When you fork a repository, you create your own copy of it in your GitHub account.
- You can make changes to the forked repository without affecting the original repository.
- Forks are commonly used for contributing to open-source projects.

Forking



Commonly used terms

- **Checkout** – It is the act of switching between different versions of a target entity. The git checkout command operates upon three distinct entities: files, commits, and branches.