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.NET and C# Training

Session 14

Overall Agenda

~~Session 1 – 6: Basic and Advanced C# and VS~~

~~Session 7: Classes available in .NET BCL~~

~~Session 8: Data Access Basics (ADO.NET)~~

~~Session 9 - 10: C# Advanced concepts~~

~~Session 11 – 12: Data Access with Entity Framework 6~~

~~Session 13 – 14: Version Control with TFVC and~~ **Git**

Session 15 – 16: ASP.NET (RESTful) Web APIS

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Today’s Agenda

1. Review assignments (30 min)
2. .tfignore in TFVC (15 min)
3. Git version control (3 hr)
4. New assignment (15 min)

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Review Last Assignment

Assignment 13

- Option 1
  - Add one of your previous assignments to TFS or Azure DevOps in a TFVC repository
- Option 2
  - Break into groups of 2 or 3
  - On a meeting together, have one person create a TFVC repository in TFS or Azure DevOps
  - Practice checking in and out files, including trying the same files at the same time
  - Practice branching and merging into each other's branches

https://github.com/jonathantower/learning-dotnet

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Git Version Control

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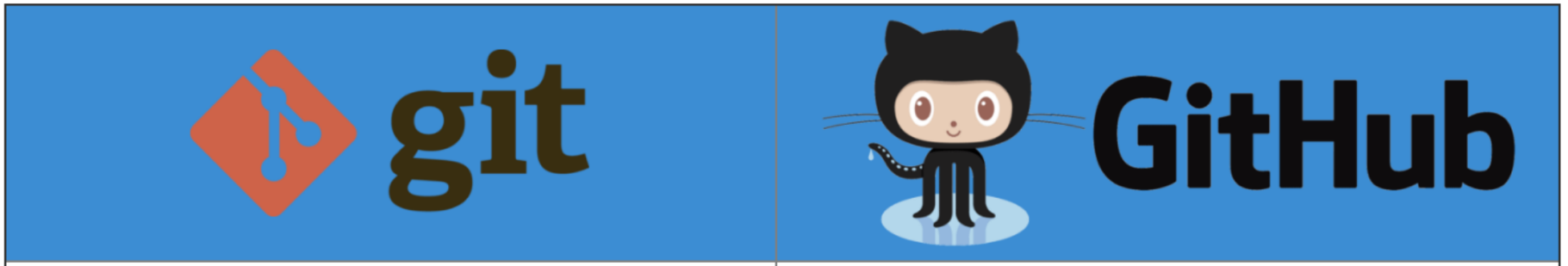
Biggest Confusion: Git vs GitHub

	
1. It is a software	1. It is a service
2. It is installed locally on the system	2. It is hosted on Web
3. It is a command line tool	3. It provides a graphical interface
4. It is a tool to manage different versions of edits, made to files in a git repository	4. It is a space to upload a copy of the **Git** repository
5. It provides functionalities like Version Control System Source Code Management	5. It provides functionalities of Git like VCS, Source Code Management as well as adding few of its own features

Source: https://andersenlab.org/dry-guide/2022-03-09/img/git_v_github.png

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Popular Git Hosts

- GitHub (Microsoft)
- Azure DevOps (Microsoft)
- GitLab
- Bitbucket (Atlassian)
- Launchpad
- SourceForge
- CodeBase
- AWS CodeCommit

Popular Git Clients

- Git CLI (from git-scm.com)
- GUIs
  - Fork*
  - SourceTree
  - GitHub Desktop
  - GitKraken
  - GitTower
  - Visual Studio IDE
  - many more…

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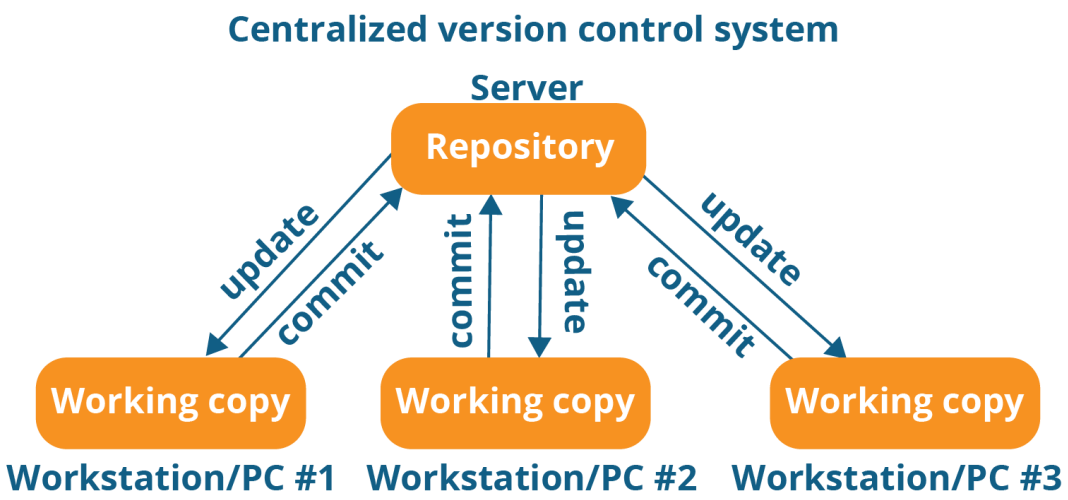
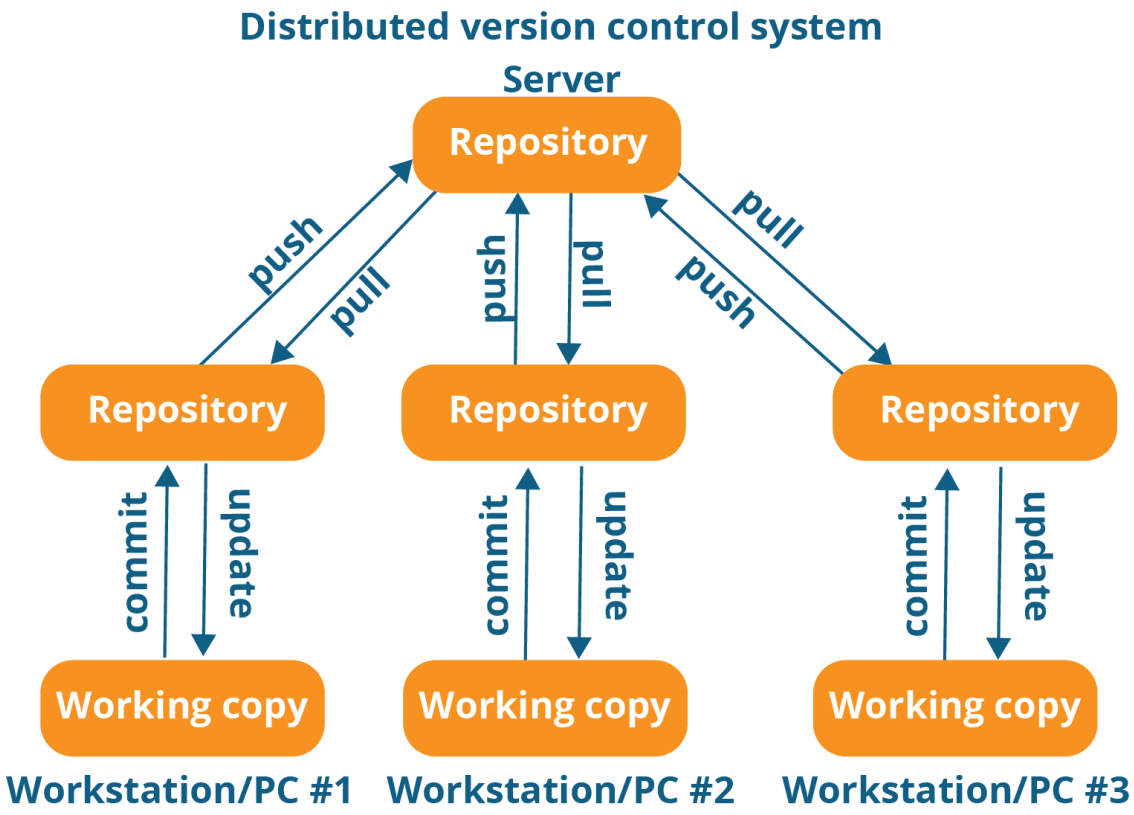
Git is Distributed Source Control





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Install Git Command Line

- Download from https://git-scm.com

Windows

```
winget install --id Git.Git -e --source winget
```

Mac

```
brew install git
```

Linux

```
apt-get install git
```

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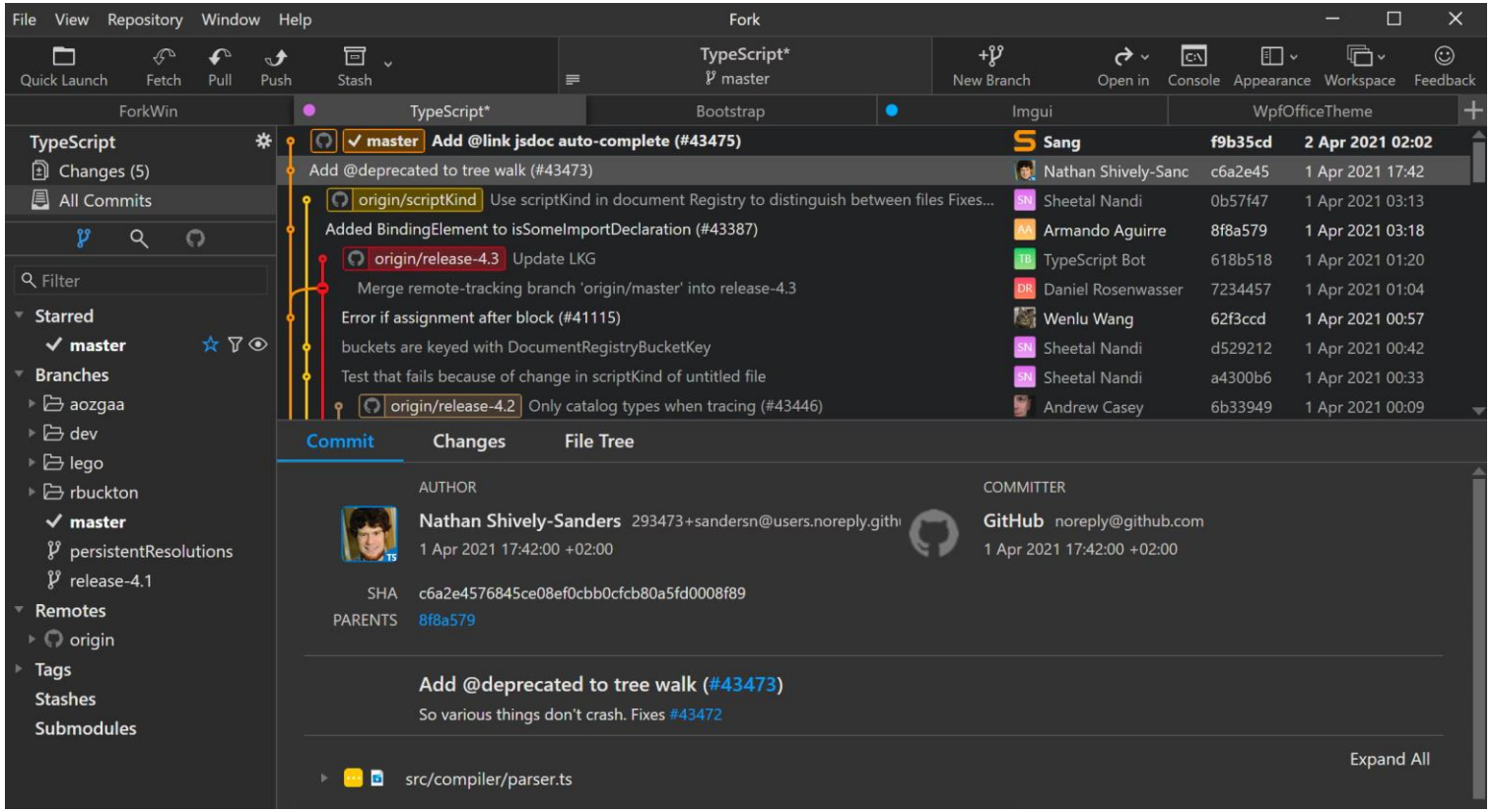
Install Git GUI “Fork”

- Download at https://git-fork.com/
- Free Evaluation
- $50



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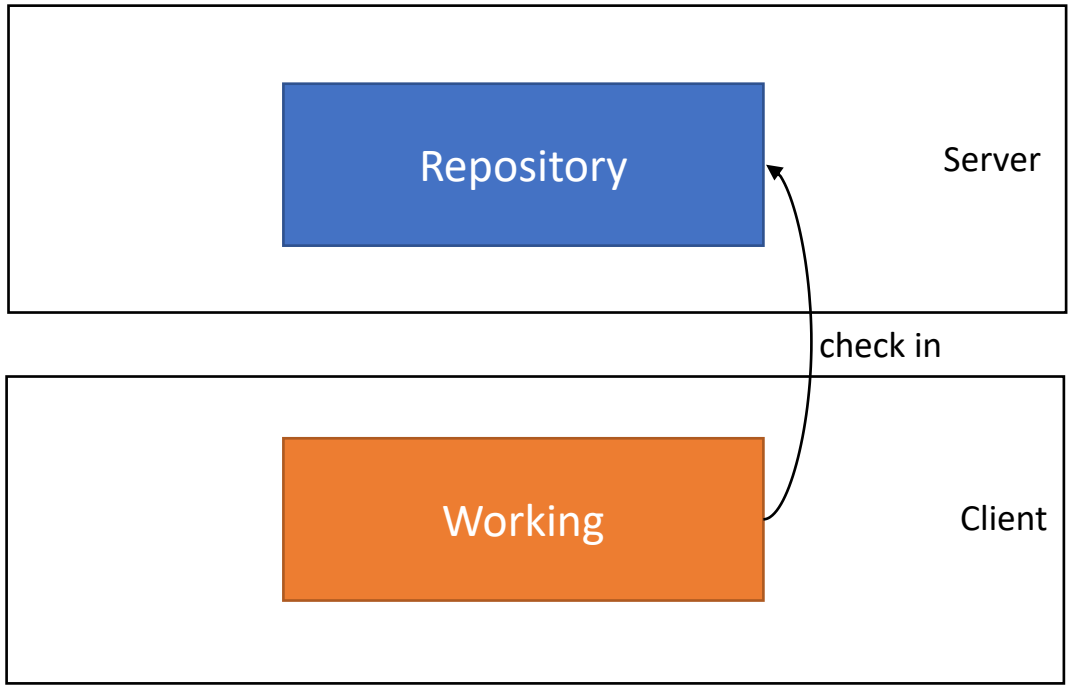
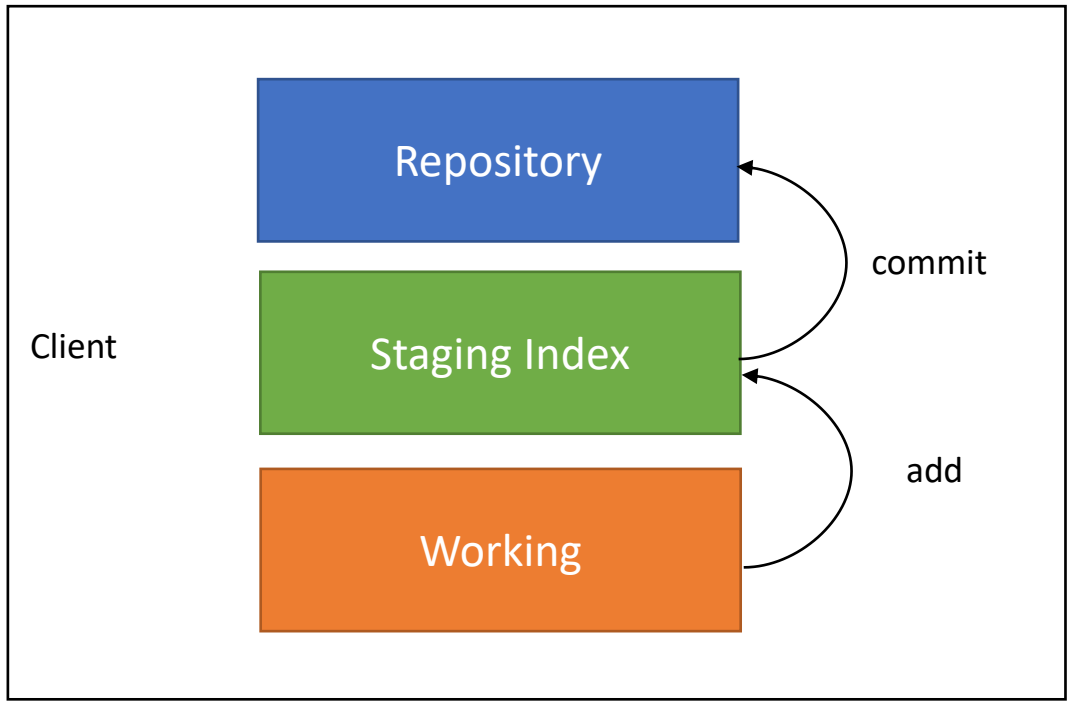
Git's Three Trees



Two Trees



Three Trees

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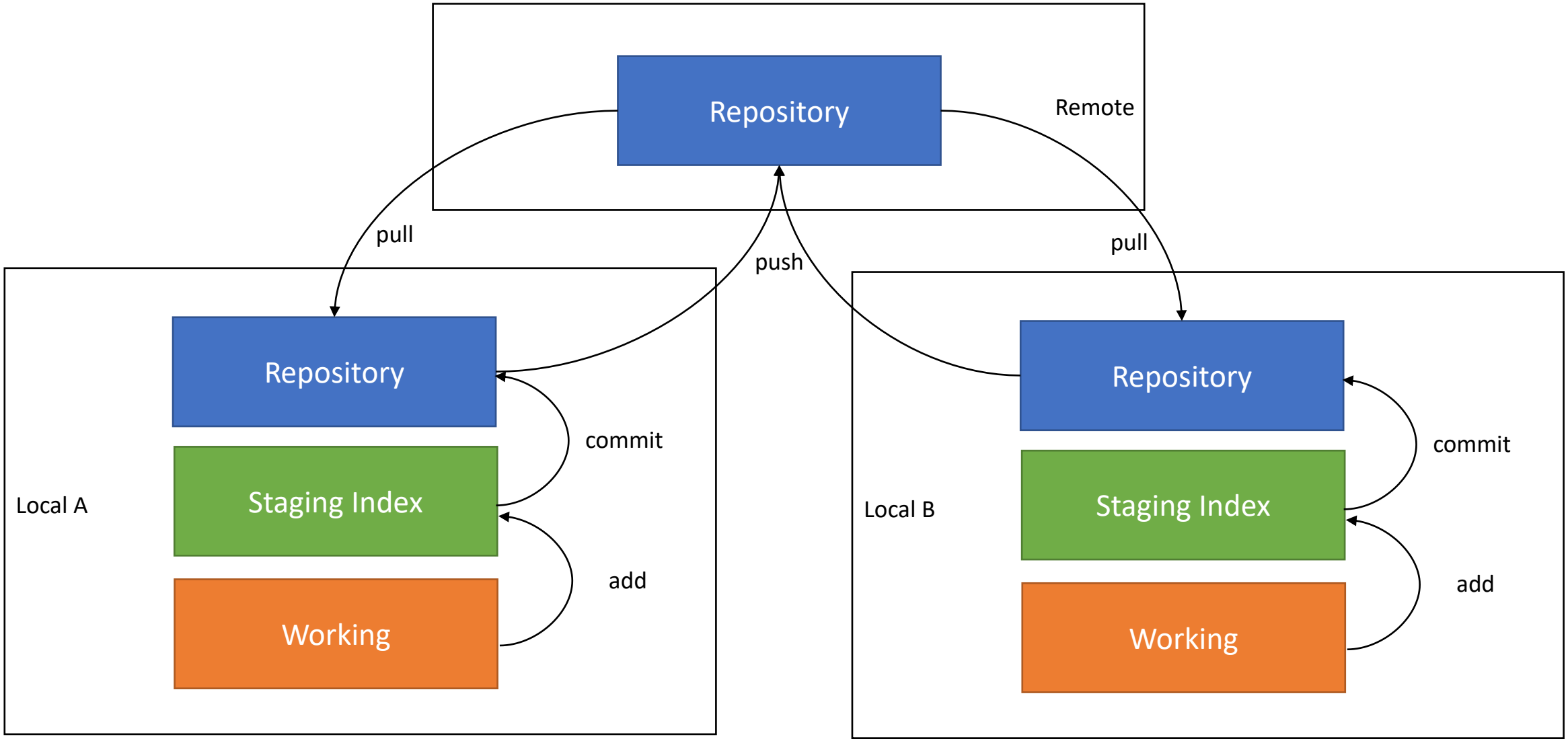
Three Trees + Distributed



DEMO

Initializing Git

DEMO

Git’s Hidden .git Folder

DEMO

Git Add

DEMO

Git’s Status

DEMO

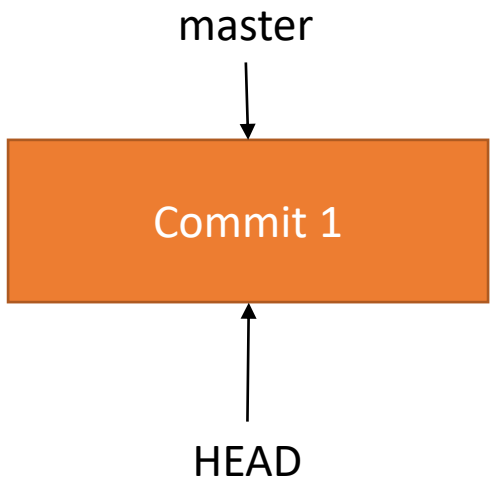
Git Commit

DEMO

Git Log & Commit SHA Values

HEAD pointer

HEAD pointer



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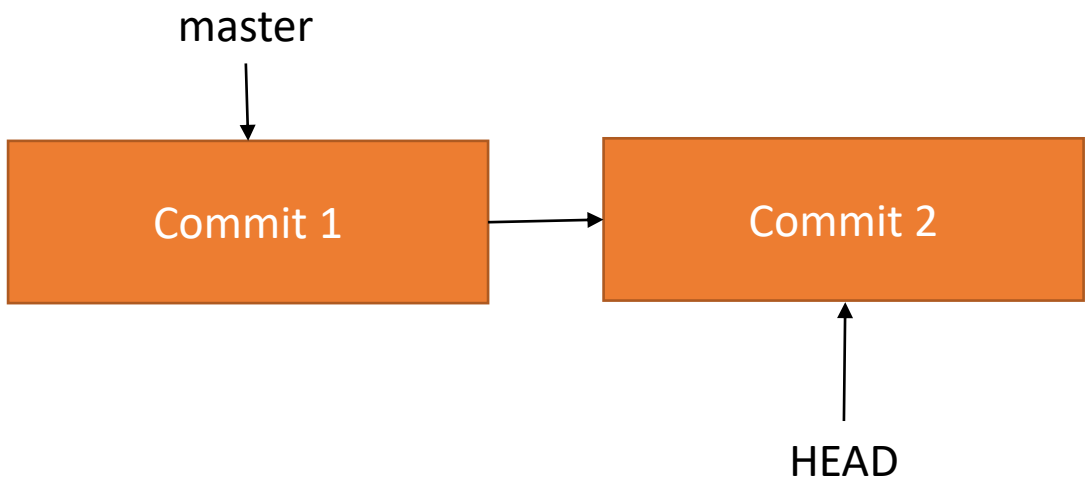

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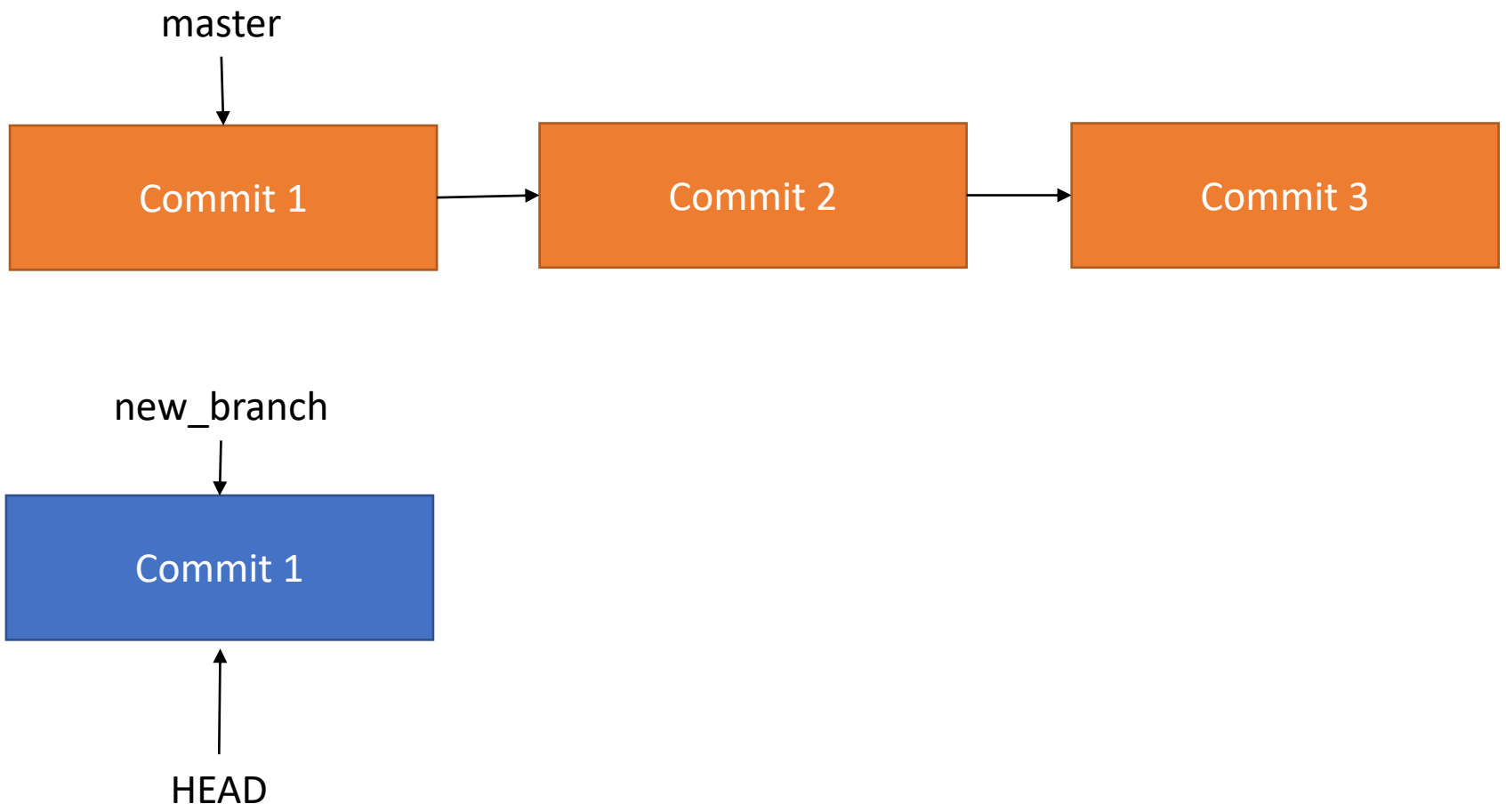

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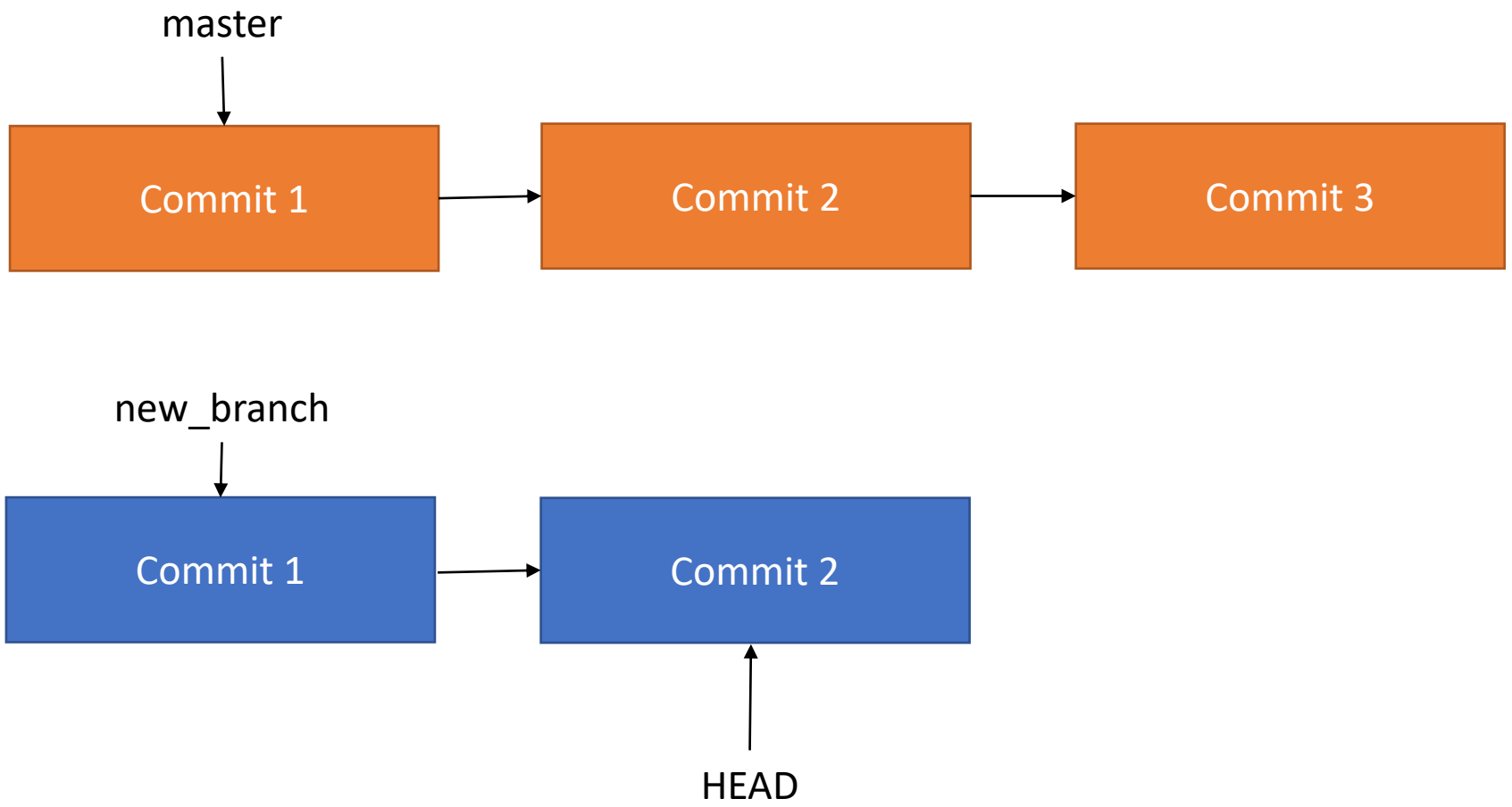

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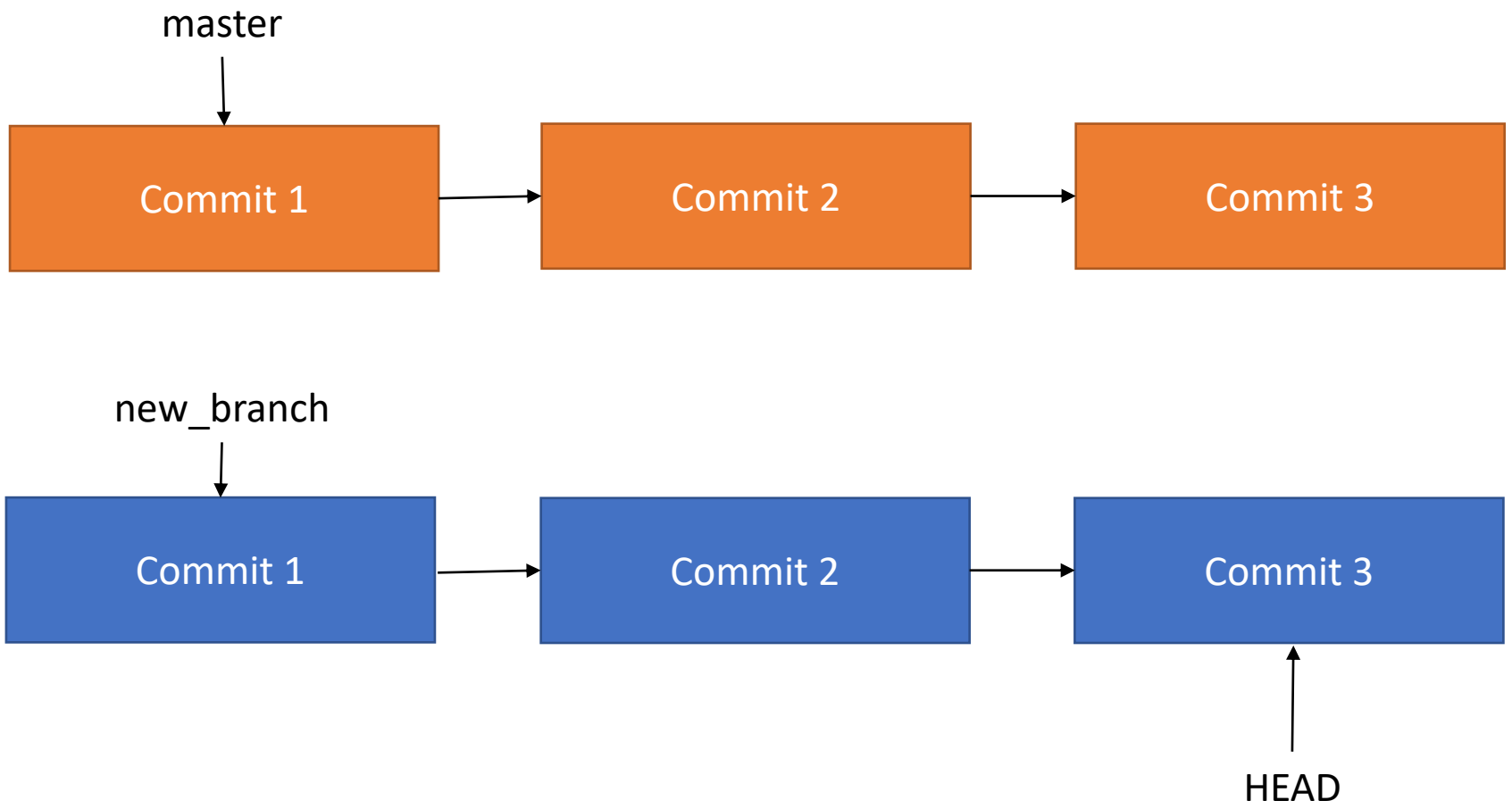

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DEMO

Connecting Local Repo to a Remote

DEMO

Push

DEMO

Cloning a Remote

DEMO

Pull

DEMO

Branch and Checkout

DEMO

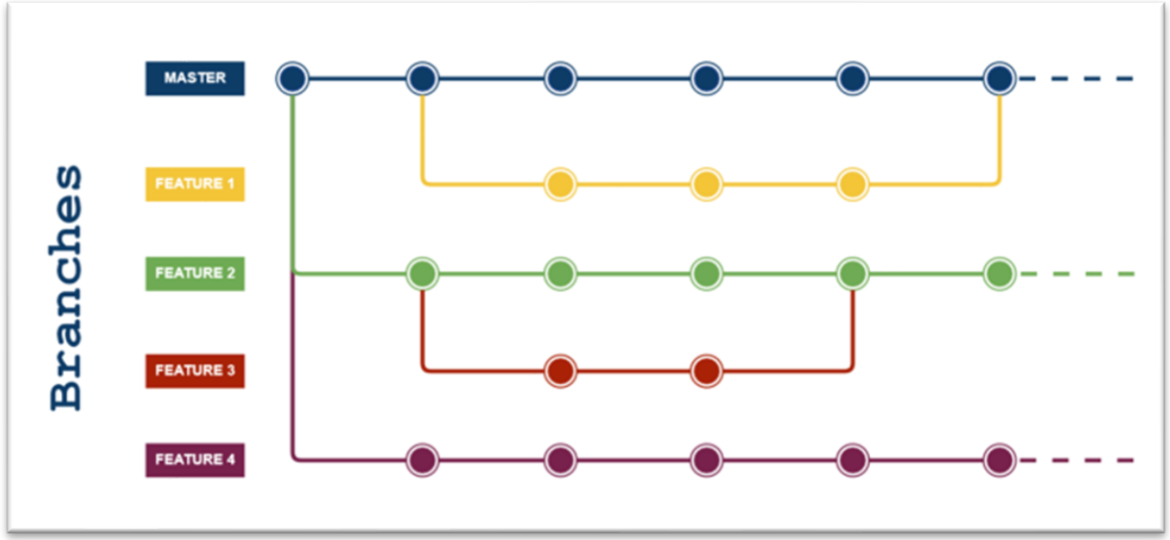
Merge

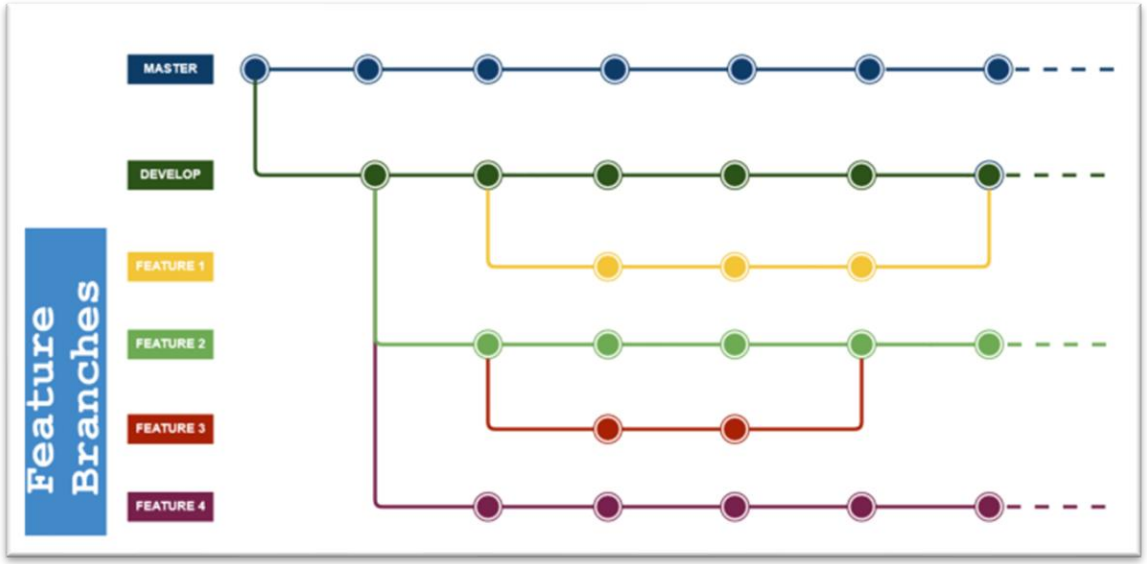
DEMO

GUI Git Client: Git-Fork.com

Many Git Workflows

- Basic Workflow
- Feature Branch Workflow
- Git Flow
- Gitlab Flow
- Many Others





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Team Foundation Version Control (TFVC)

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DEMO

.tfignore File

Assignment 14

- Read W3 Schools' Git Tutorial and complete the included exercises at https://www.w3schools.com/git/

- CHALLENGE
  - Create your own Git repository on GitHub or Azure DevOps
  - Add an assignment from this class to the repository
  - Connect to the remote and push you code to it
  - Practice making changes, adding, committing and pushing them
  - Try making a branch with a new feature and merging it back to the master/main branch

https://github.com/jonathantower/learning-dotnet

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