Introduction to Git, GitHub & Version Control

git

GitHub

Agenda

- What is Git & GitHub?
- Understanding the core Concepts.
- Working with Local & Remote repositories.
- Design & Host Portfolio

What is Version Control?

- Time
- Who took it
- Location

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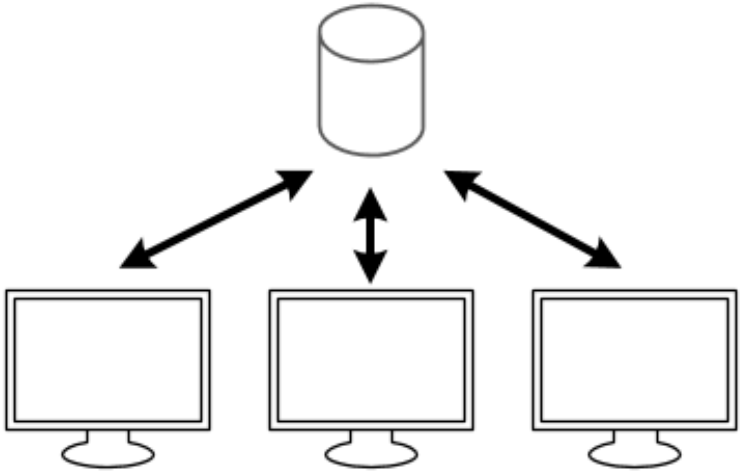
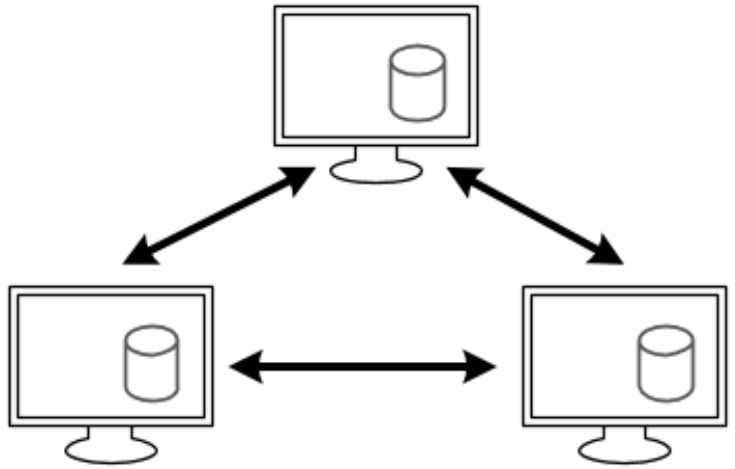
Version Control Systems (VCS)

Centralized (CVCS)



Distributed (DVCS)



Most Popular Version Control Systems

- Git
- Subversion
- Mercurial

How to get Git?

MacOS / Windows

Go to git-scm.com/downloads

Download the software for Mac/Windows

Install Git, choosing all of the default options

Linux

$ sudo apt-get install git

git-cheat-sheet-education (github.com)

First-Time Git Configuration

```
# sets up Git with your name
git config --global user.name "<Your-Full-Name>"

# sets up Git with your email
git config --global user.email "<your-email-address>"

# ensures that Git output is colored
git config --global color.ui auto
```

Working with a Local Repository

- Create a Git Local Repository.
- Make Changes, add, and commit them.
- Review the repository’s history.

Initializing a Local Git Repository

```
$git init
```

Common terminal commands

```
$ls    - used to list files and directories
$mkdir - used to create a new directory
$cd    - used to change directories
$rm    - used to remove files and directories
$pwd   - used to print working directory
$touch - used to create and modify files
$start - used to open files or directories
```

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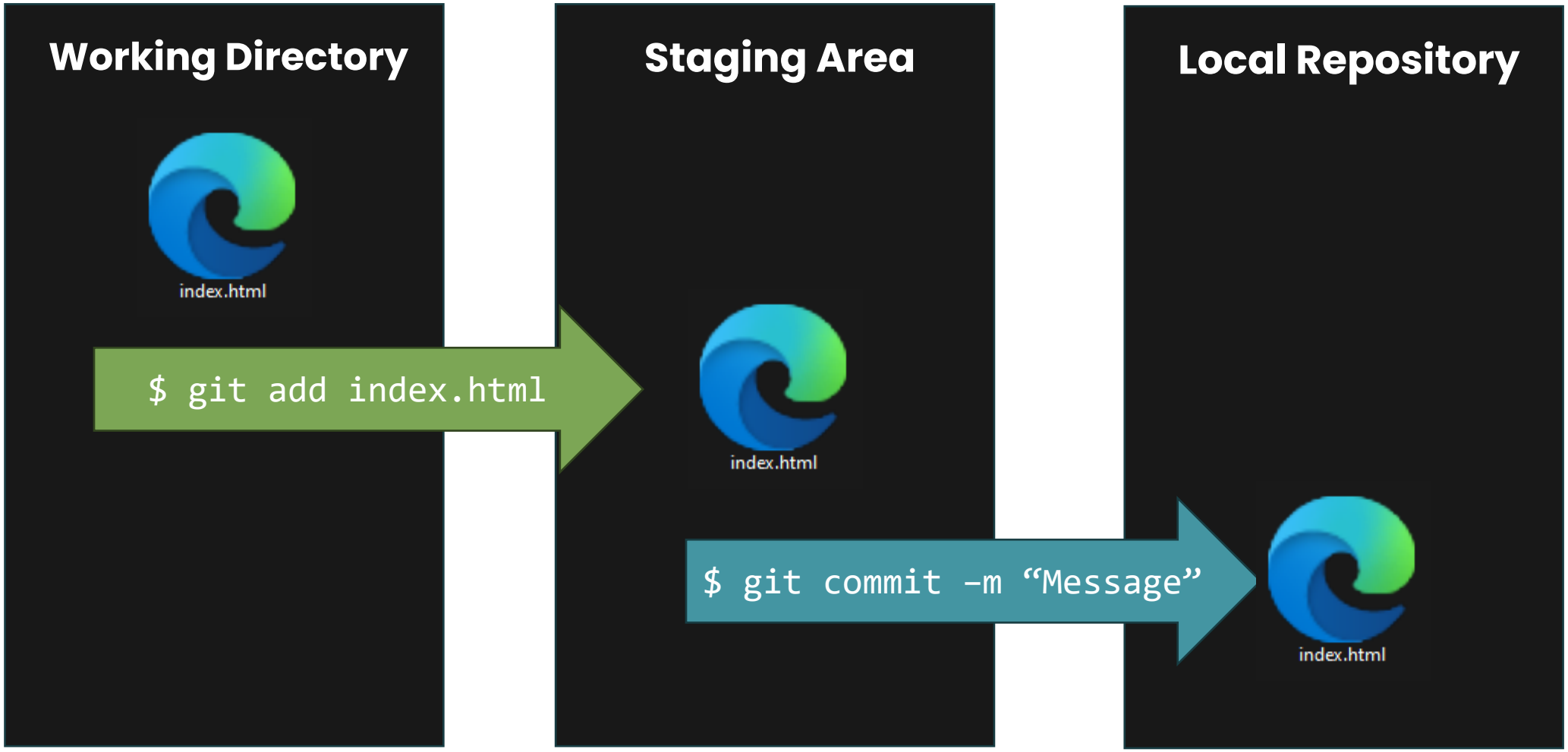
How does Git work?



Git Add

```
$ git add <file1> <file2> … <fileN>

$ git add .
```

This command moves your changes to the staging area.

Git Commit

```
$ git commit –m “Initial commit”
```

This command moves your changes to the local repository.

Try to always write your commit message imperatively.

Reviewing the Repository’s History

```
$ git status
```

On branch master

Your branch is up-to-date with 'origin/master’.

There is nothing to commit; the working directory clean

This command displays the status of the working directory and the staging area.

Reviewing the Repository's History

```
$ git log
```

This command will show you the history of changes in the repository.

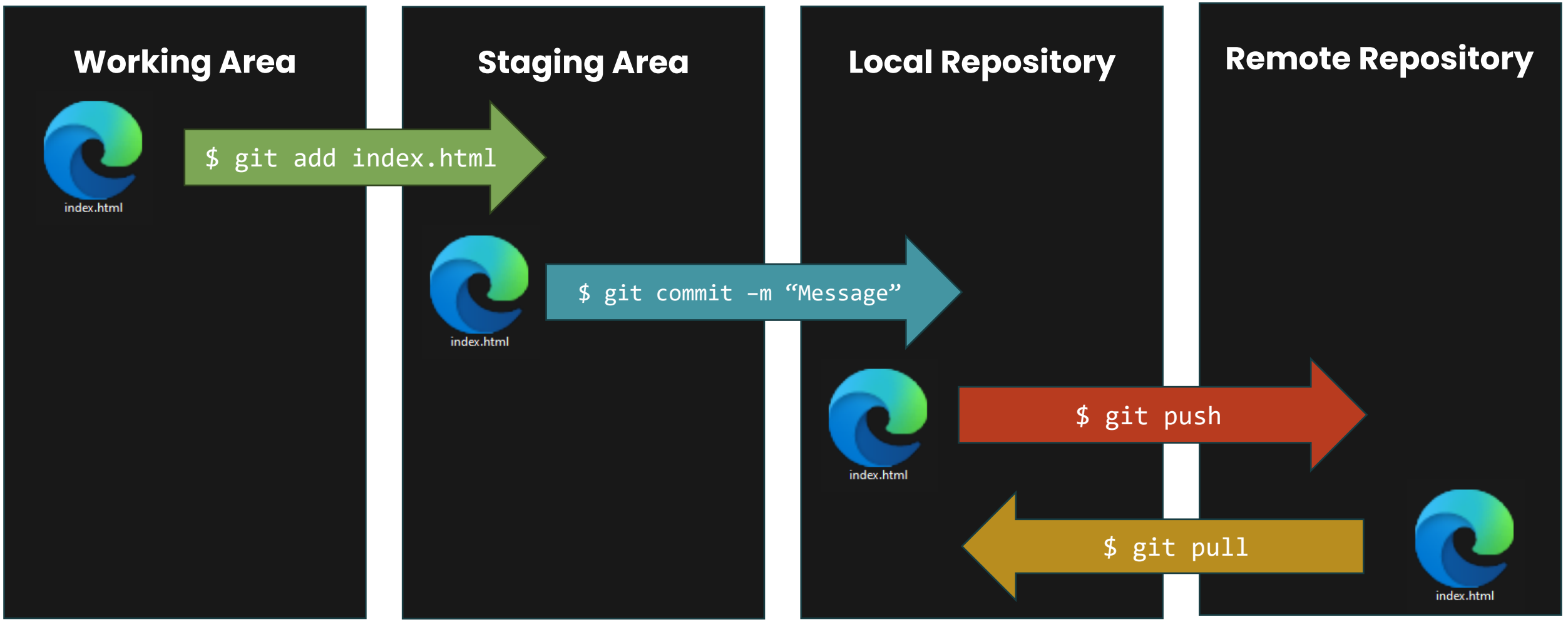
- the SHA
- the author
- the date
- the commit message

```
$ git log --oneline
```

Working with a Remote Repository

- Create a GitHub repository and clone it.
- Make changes and push to GitHub.
- Make changes and pull from GitHub.
- Fork a repository and make a pull request.

How does Git work?



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