Welcome to the CoGrammar CSS and GitHub Lecture

The session will start shortly...

Questions? Drop them in the chat. We'll have dedicated moderators answering questions.

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Skills Bootcamp 8-Week Progression Overview

Fulfil 4 Criteria to Graduation

✅ Criterion 1: Initial Requirements

Timeframe: First 2 Weeks
Guided Learning Hours (GLH): Minimum of 15 hours
Task Completion: First four tasks

Due Date: 24 March 2024

✅ Criterion 2: Mid-Course Progress

60 Guided Learning Hours

Data Science - **13 tasks**
Software Engineering - **13 tasks**
Web Development - **13 tasks**

Due Date: 28 April 2024

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Skills Bootcamp Progression Overview

✅ Criterion 3: Course Progress

Completion: All mandatory tasks, including Build Your Brand and resubmissions by study period end
Interview Invitation: Within 4 weeks post-course
Guided Learning Hours: Minimum of 112 hours by support end date (10.5 hours average, each week)

✅ Criterion 4: Demonstrating Employability

Final Job or Apprenticeship Outcome: Document within 12 weeks post-graduation
Relevance: Progression to employment or related opportunity

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SKILLS FOR LIFE
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Department for Education

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CSS and GitHub

March 2024

Lecture Overview

- → Introduction to CSS
- → Styles
- → Selectors
- → The Box Model
- → GitHub

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CSS

Cascading Style Sheets (CSS) is a language used to change the presentation and styling of a document written in a markup language e.g. HTML

- ❖ Helps us create **visually appealing** and **user-friendly** websites.
- ❖ HTML structures the content, CSS controls how the content looks.
- ❖ CSS uses a **set of rules** written in a **certain syntax** to style HTML.
- ❖ We use CSS to create **style sheets**, which define the appearance and layouts of the elements on a webpage.
- ❖ The various properties which we can control with CSS can be found here.

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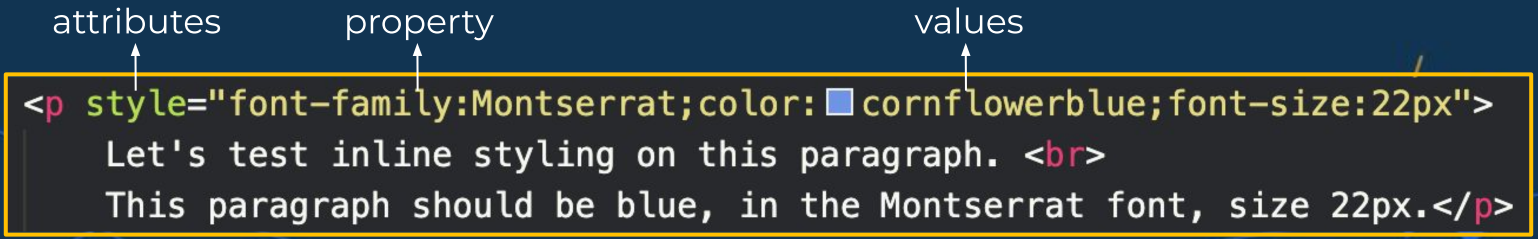
Styles: Inline Style

- HTML elements are described using **attributes** and **properties**.
- One of the attributes of an element is **style**, which we can change by **adjusting its properties** using CSS rules.
- Attributes are adjusted **inside the element's beginning tag**.

<u>For example: Text Elements:</u>



```html
<p style="font-family:Montserrat;color:cornflowerblue;font-size:22px">
    Let's test inline styling on this paragraph. <br>
    This paragraph should be blue, in the Montserrat font, size 22px.</p>
```

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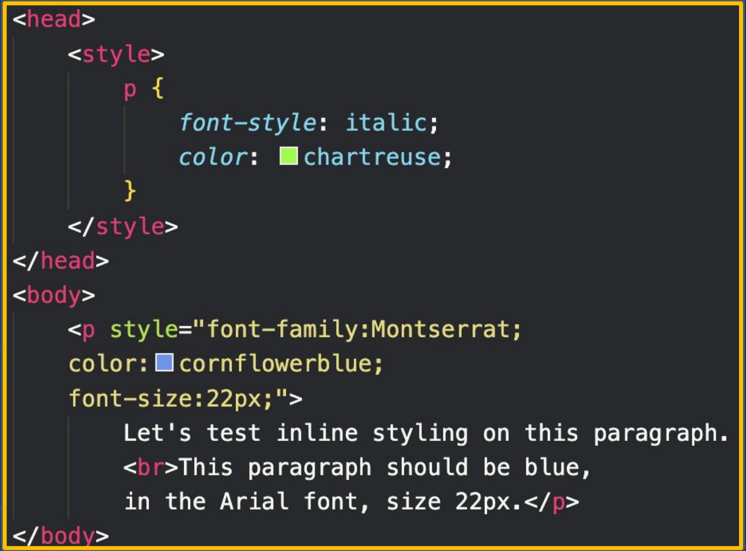
Styles: Internal CSS

❖ CSS rules can be defined in the **head** part of the HTML template, inside the **style element**. This is known as **internal CSS**.

❖ Rules can be defined for every type of element in the HTML document.



```
<head>
    <style>
        p {
            font-style: italic;
            color: chartreuse;
        }
    </style>
</head>
<body>
    <p style="font-family:Montserrat;
    color: cornflowerblue;
    font-size:22px;">
        Let's test inline styling on this paragraph.
        <br>This paragraph should be blue,
        in the Arial font, size 22px.</p>
</body>
```

➔ The style sheet consists of **selectors** and **declarations**

- **Selectors:** indicates which element you want to style
- **Declaration block:** contains one or more declarations, separated by semicolons and enclosed in curly brackets.
- **Declaration:** includes a property and a value separated by a colon

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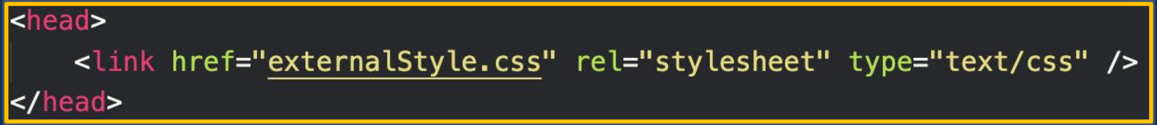
Styles: External CSS

❖ Another way to define the style for an HTML file is by writing all the style rules in a **separate .css file**. This is called **external CSS**.

❖ The external file can be **linked** to any HTML file to apply the style rules.

❖ This method is useful when **applying the same style rule to multiple HTML files**.



```
<head>
    <link href="externalStyle.css" rel="stylesheet" type="text/css" />
</head>
```

➔ In the **head** part of the HTML file, in a **link element** define

- **href:** define the name and path of your file (relative to the current working directory)
- **rel:** describes the type of relation the external file is to the HTML (i.e. stylesheet)
- **type:** tells the browser what sort of file it is (only necessary for old browsers)

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Best Approaches to Styling

- ❖ Styling is applied depending on which rules are **closest to the element**.
- ❖ Inline styling will be applied to individual elements **overwriting the internal or external CSS** defined for the whole web page.
- ❖ Internal styling will overwrite any external styling defined.
- ❖ **External CSS** should be chosen over internal CSS where possible
  - ➢ **Readability:** separating CSS code and HTML makes code easier to read and follow.
  - ➢ **Maintainability:** updating and debugging styling rules is easier since only external CSS files need to change or be replaced.

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CSS Selectors

CSS selectors attach to the HTML elements on web pages which allows for customized styling

- There are three common CSS selectors that we will look at:
  - **Element selector**
    - The same style is applied to elements with the same tag.
  - **ID selector**
    - Styles are applied to specific elements using a unique ID.
  - **Class selector**
    - The same style is applied to elements in the same class.

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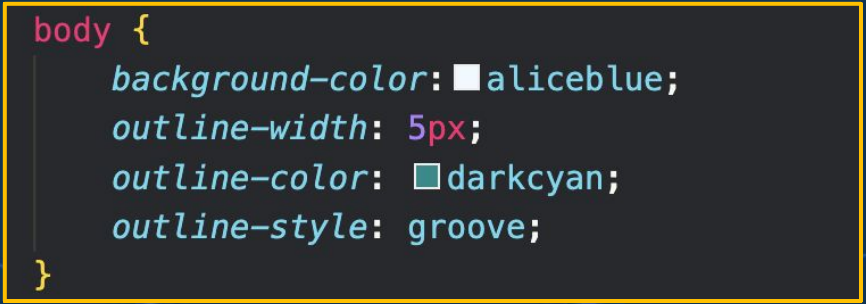
Element Selectors

- ❖ The most basic type of CSS selector.
- ❖ Style rules are defined for all elements of the same type of tag.
- ❖ The selector pinpoints an **element tag** and applies **the same style** to **all elements with that specific tag name**.

<u>For example: Styling the body element</u>



```css
body {
    background-color: aliceblue;
    outline-width: 5px;
    outline-color: darkcyan;
    outline-style: groove;
}
```

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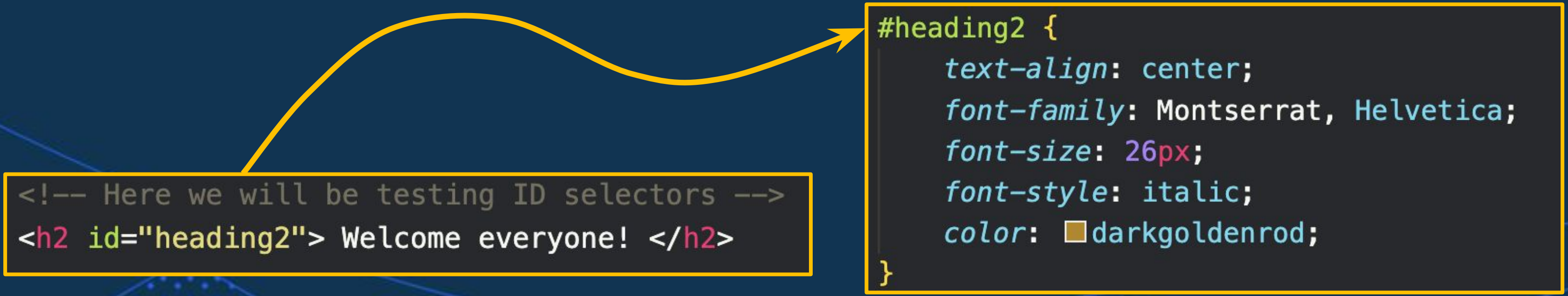
ID Selectors

- ID selectors apply styles to HTML elements which are identified by its **unique ID name**.
- The ID of an element is an **attribute** defined at the beginning of the HTML tag. The value assigned to this attribute must be **unique**.
- The ID selector is called using a **hash (#)**, followed by the **ID name**.



```html
<!-- Here we will be testing ID selectors -->
<h2 id="heading2"> Welcome everyone! </h2>
```

```css
#heading2 {
    text-align: center;
    font-family: Montserrat, Helvetica;
    font-size: 26px;
    font-style: italic;
    color: darkgoldenrod;
}
```

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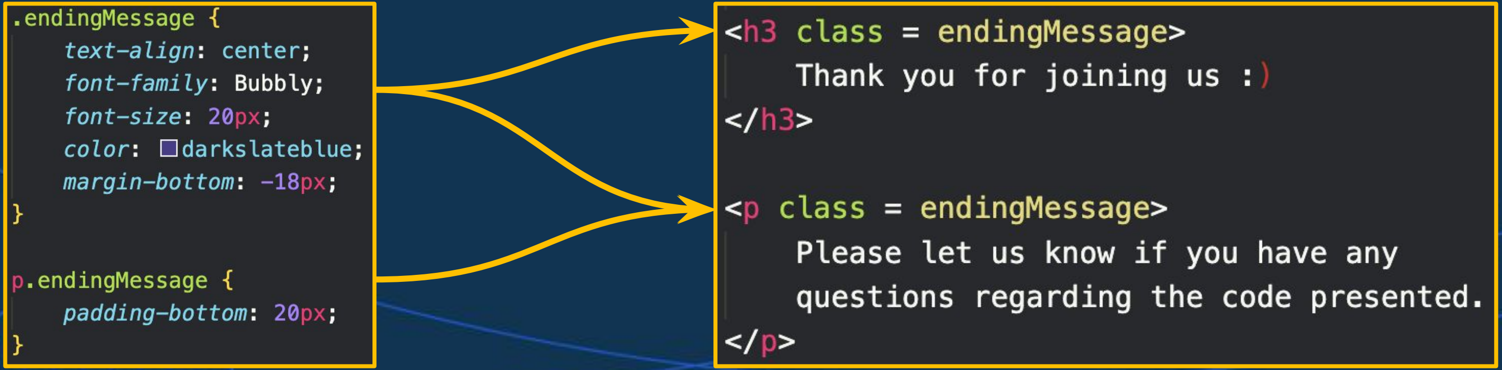
Class Selectors

- Class selector aims to change **all HTML elements associated with a specific class**.
- **Class** is also an **attribute**, defined like an ID, but it is **not unique**.
- It is called using a **dot (.) followed by the class name**.
- The **element tag** belonging to that class can be referenced as well.



```css
.endingMessage {
    text-align: center;
    font-family: Bubbly;
    font-size: 20px;
    color: ■darkslateblue;
    margin-bottom: -18px;
}

p.endingMessage {
    padding-bottom: 20px;
}
```

```html
<h3 class = endingMessage>
    Thank you for joining us :)
</h3>

<p class = endingMessage>
    Please let us know if you have any
    questions regarding the code presented.
</p>
```

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Let's take a break

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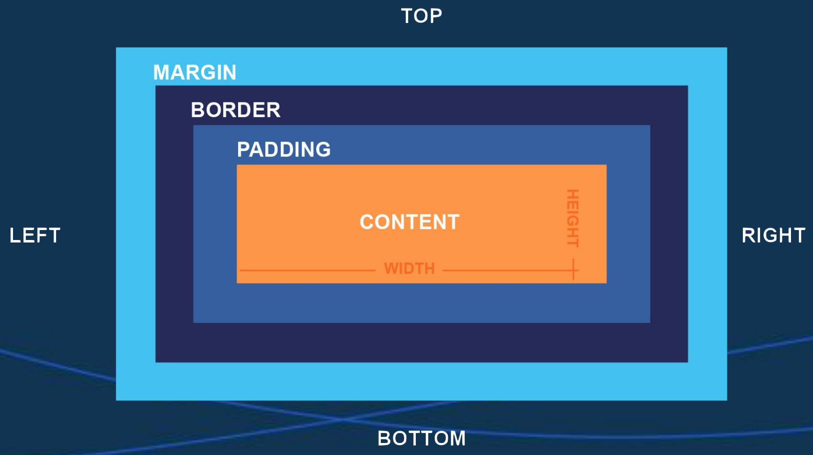
The Box Model

- A **rectangle** is created for each element in the HTML document.
- The **box model** describes how the **padding, border, and margin** are added to the content to create the rectangle.
- Each area is surrounded by a perimeter called an **edge**.

Source: GCFGlobal



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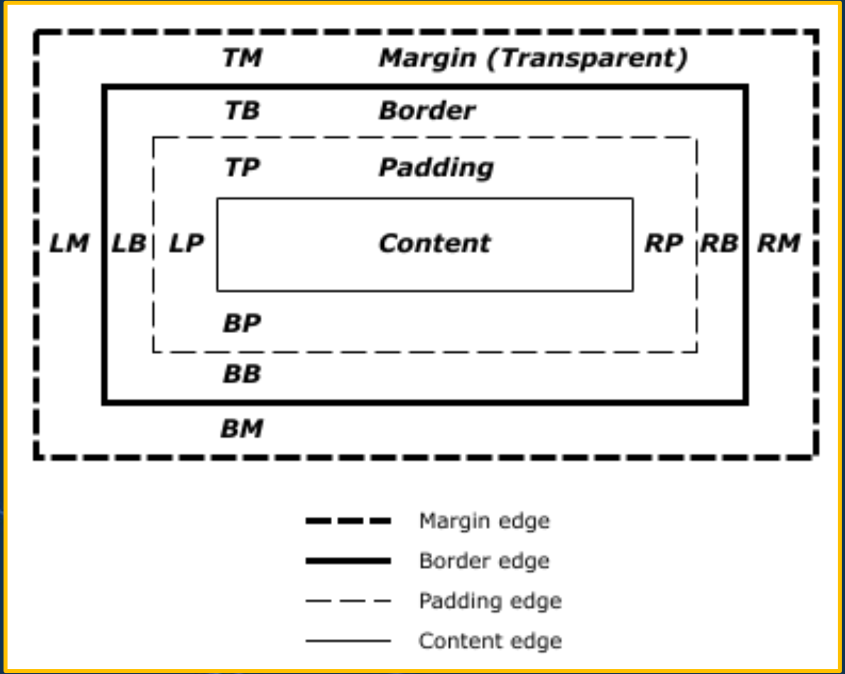

- **Content Edge or Inner Edge**
  - Surrounds the rectangle given by the width and height of the box, depending on the content.
- **Padding Edge**
  - Surrounds the box padding.
  - *padding, padding-top, padding-bottom, padding-left, padding-right*
- **Border Edge**
  - Surrounds the box's border.
  - *border, border-top, border-bottom, border-left, border-right*
- **Margin Edge or Outer Edge**
  - Surrounds the box margin.
  - *margin, margin-top, margin-bottom, margin-left, margin-right*

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CSS Validator

- ❖ An important step in your development journey is **testing** and **debugging** your code.
- ❖ Using tools like VSCode allows us to identify errors in our **syntax** and **formatting**, but some errors may go unnoticed.
- ❖ We can use other tools like this CSS Validation Service, to check our CSS code as well.
- ❖ When our code doesn't behave as expected, or our web pages don't look the way we intended, understanding how to **identify errors** is an important first step before we can **debug**.

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Version Control

- Version control systems **record modifications** to a file or set of files so that you can **recall** specific versions of it later on.
- There are many **benefits** to using version control:
  - **Collaboration:** When working with a team, multiple people can work on the project simultaneously and changes will be merged to a common version and stored in a central place.
  - **Storing versions:** A current version of the project is worked on and is stored locally and all previous versions are stored and managed by the version control system.
  - **Restoring previous versions:** If any changes are made that result in errors or have unintended results, a previous version of the project can easily be restored.

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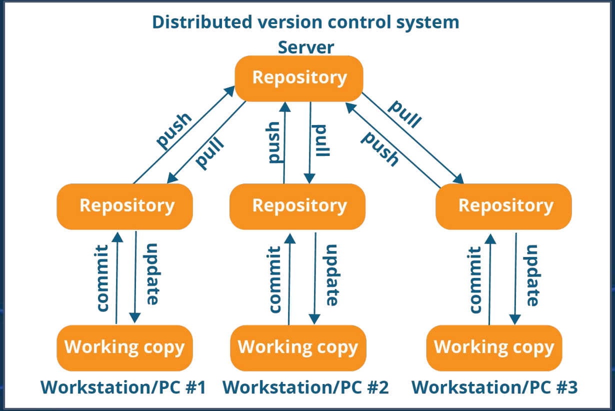
Version Control

- **Benefits** continued:
  - **Understanding what happened:** Whenever changes are made which result in a new version of the project, a short description needs to be provided which describes the changes. This means any changes, why they were made and who made them can be tracked.
  - **Backup:** Every member of the team has a complete version of the project on their disk, which includes the project's complete history. If the central server breaks down or your backup fails, a team members local version can be used instead.

Git Version Control

- Git is the most widely used modern version control system. It is **free**, **open-source**, and **scalable** with project size.
- Git has a **distributed architecture** and is an example of a distributed version control system (DVCS).
- Every developer's working copy of the code is also a repository that contains the **full history of all changes**.

Source: TechJunction



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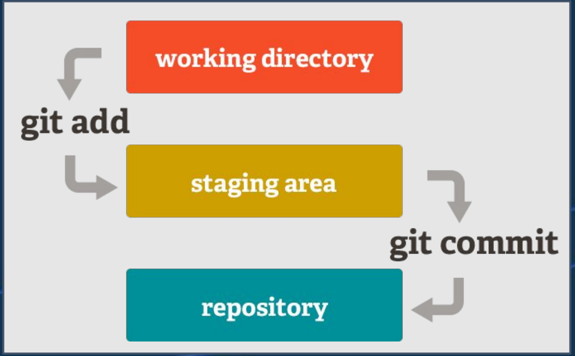
Git Version Control

- Files can have three main states: **committed**, **modified**, and **staged**.
  - **Committed:** Files are safely stored in your local database.
  - **Modified:** Files have changed but are yet to be committed to your local database.
  - **Staged:** Modified files have been marked to go into the next commit in its current version.
- There are three main sections of a Git project:
  - **Working directory**
  - **Staging area**
  - **Git repository**



Source: Medium

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Installing Git

- Install Git using one of the following links:
  - Windows
  - Mac
  - Linux
- Verify that the installation was successful by typing the following into the terminal:
  - `git --version`
- Configure your Git credentials:
  - `git config --global user.name "Your Name"`
  - `git config --global user.email "youremail@email.com"`

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GitHub

- GitHub is an online Git **repository hosting service**, which provides a **web-based graphical interface**.
- GitHub also offers a service called GitHub Desktop, which grants users access to all Git tools and GitHub services on their **local desktop**.
- GitHub is not just a project-hosting service, it is also a large **social networking site** for developers and programmers.
- This allows users to create a **technical portfolio**, which showcases their work and technical capabilities.

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Repositories

- A repository in Git is a **hidden folder called '.git'**, which is located in the root directory of your project.
- This is where your version control system stores all the files for a particular project.
- A **local repository** is located on your local computer as the '.git' folder inside the project's root folder.
- A **remote repository** is located on a remote server on the internet or in your local network.
- **Local repositories** are created by either **initialising a new repository** or **cloning**

Common Git commands

- Initialise a new repository in the current directory
  - `git init`
- Add a new file to the repository staging area
  - `git add fileName.js`
- Check the status of the files in your working directory
  - `git status`
- Committing staged changes with a meaningful message
  - `git commit -m "Added new file fileName.js"`
- Reviewing the change history
  - `git log`

Let's try adding the files we created in this lecture to a new repo!

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Using remote repositories

- To synchronise a **local repository** to a **remote repository** hosted by GitHub, authenticated access to your GitHub account is needed.
- For this, **GitHub Command Line Interface** needs to be used.
- Once installed, login using the following command and follow the prompts
  - `gh auth login`
  - Choose GitHub.com for the account and HTTPS for the preferred protocol.
- **Sync your local repository to a remote GitHub repository:**
  - `git remote add origin https://github.com/[REPO-OWNER]/[REPO-NAME]`
  - `git branch -M main`
  - `git push -u origin main`

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Using remote repositories

- To clone a repository hosted on GitHub:
  - `git clone https://github.com/[REPO-OWNER]/[REPO-NAME]`
- To fetch the newest version of the repository:
  - `git fetch origin`

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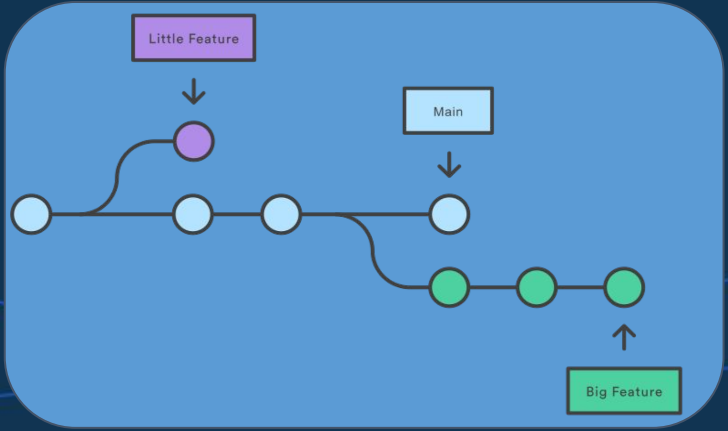
Branches

- A branch represents an **independent** line of development.
- It allows each developer to **branch out** from the original codebase and **isolate** their work from others.
- Developers can continue to work without messing up or disrupting the main line.
- This ensures that **unstable code** is not committed to the main codebase.



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Branches

- **Creating a branch:**
  - `git branch branch-name`
- **Switching branches:**
  - `git checkout branch-name`
  - `git checkout -b new-branch-name`
- **Merging branches:**
  - `git merge branch-name`

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Questions and Answers

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Thank you for attending

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