

DCS 3003

WEBSITE DESIGN



# Fundamentals

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## Recap

# Website

A website is a :

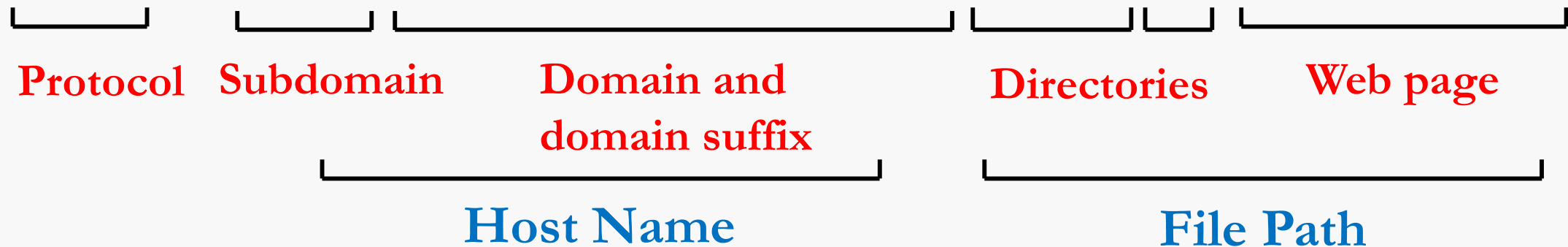
- central location of web pages that are accessed by using a browser.
  - virtual location on the World Wide Web
- > example: Crescendo International College website

# URL

Every website has its own unique **URL(Uniform Resource Locator)** or website address or online address.

A URL (the name of the location address of the hypertext documents)

<https://www.computerhopes.com/jargon/w/website.htm>



# Types of Website

1) Static Website

2) Dynamic Website



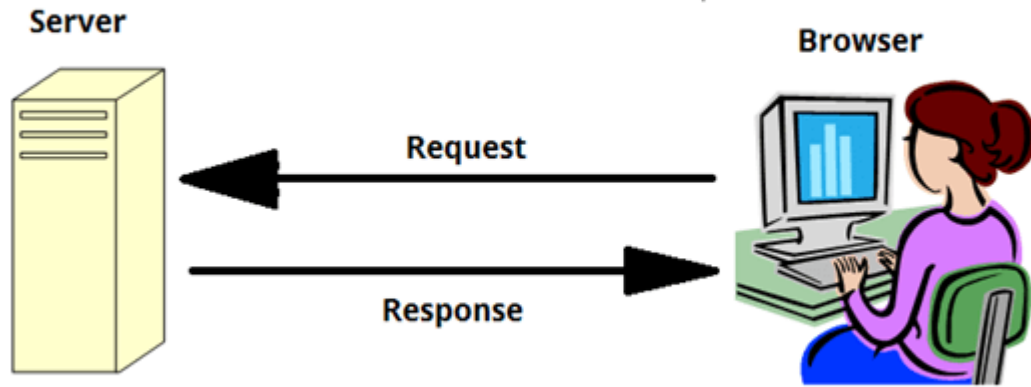
## Static Website

- Webpages are prebuilt source code.
- No processing of content on the server.
- Displays the same information to all visitors.
- Web pages are returned by the server with no change, therefore static Websites are fast.
- Client-side technologies are HTML, CSS, and JavaScript.
- Static web pages are made of fixed code, unless the website developer makes changes
- No interaction with databases

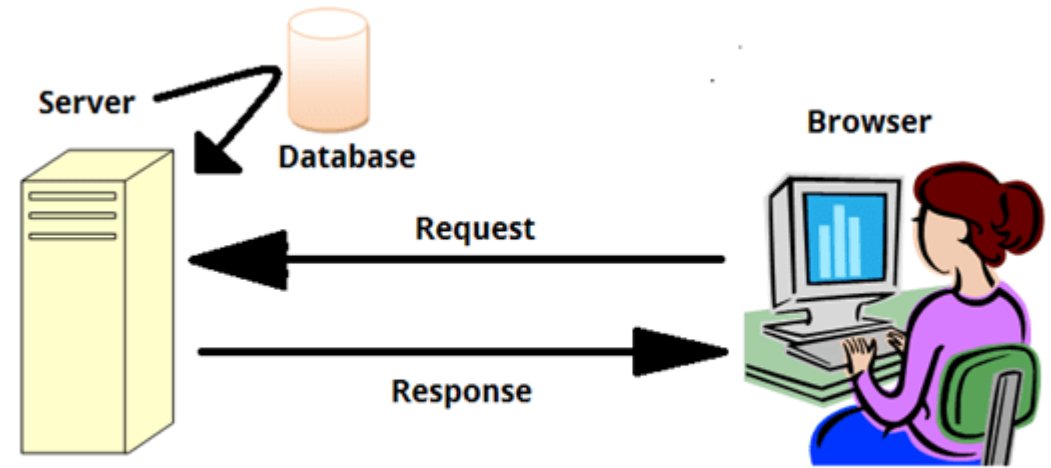
## Dynamic Website

- Webpages are not prebuilt source code.
- Content executed by the server (Web Server), later on page is sent to the browser.
- Allow to create a user profile
- Webpages are slower than static websites because of updates and changes.
- Use languages like PHP
- Dynamic web pages are generated real time and changes regularly.
- Can interact with databases

## Static Website



## Dynamic Website



# Website Design

Website design refers to :

- the design of a websites that are displayed on the internet.
- the process of planning, conceptualizing and arranging content online.
- the process of creating the look and feel of a website.



# Important Elements of A Website Design

- 1) Navigation
- 2) Visual Design
- 3) Content
- 4) User Friendly
- 5) Speed

# Important Elements of A Website Design

A page layout that emphasises important parts (principle) of the website:

- ✓ Home page with clear site navigation
- ✓ Site search option
- ✓ Done from a visitor's point of view
- ✓ WYSIWYW (What You See Is What You WANT)

# Basic Step of Website Design Process

- 1) Planning
- 2) Designing
- 3) Coding (HTML/CSS Development & JavaScript Integration)
- 4) Testing
- 5) Launch
- 6) Maintenance

# HTML

- 1) HyperText Markup Language
- 2) A basic markup language
- 3) HTML IS markup language, NOT programming language
- 4) HTML used to make any web pages -> to form websites



# CSS

- 1) Cascading Style Sheets
- 2) A style sheet language used to **describe the presentation** of a document written in HTML
  - > describes how HTML elements should be displayed
- 3) HTML -> bones of the body
  - CSS -> skin that covers it.

# JavaScript

- 1) client-side programming language
- 2) could only be used on the client-side – that is web browsers
- 3) web developers commonly used to create dynamic interactions
- 4) to create interactive elements on the web page.

# Github

1) GitHub is a website and cloud-based service

☁ All code on GitHub is stored in the cloud (example: documents are stored with Google Docs).

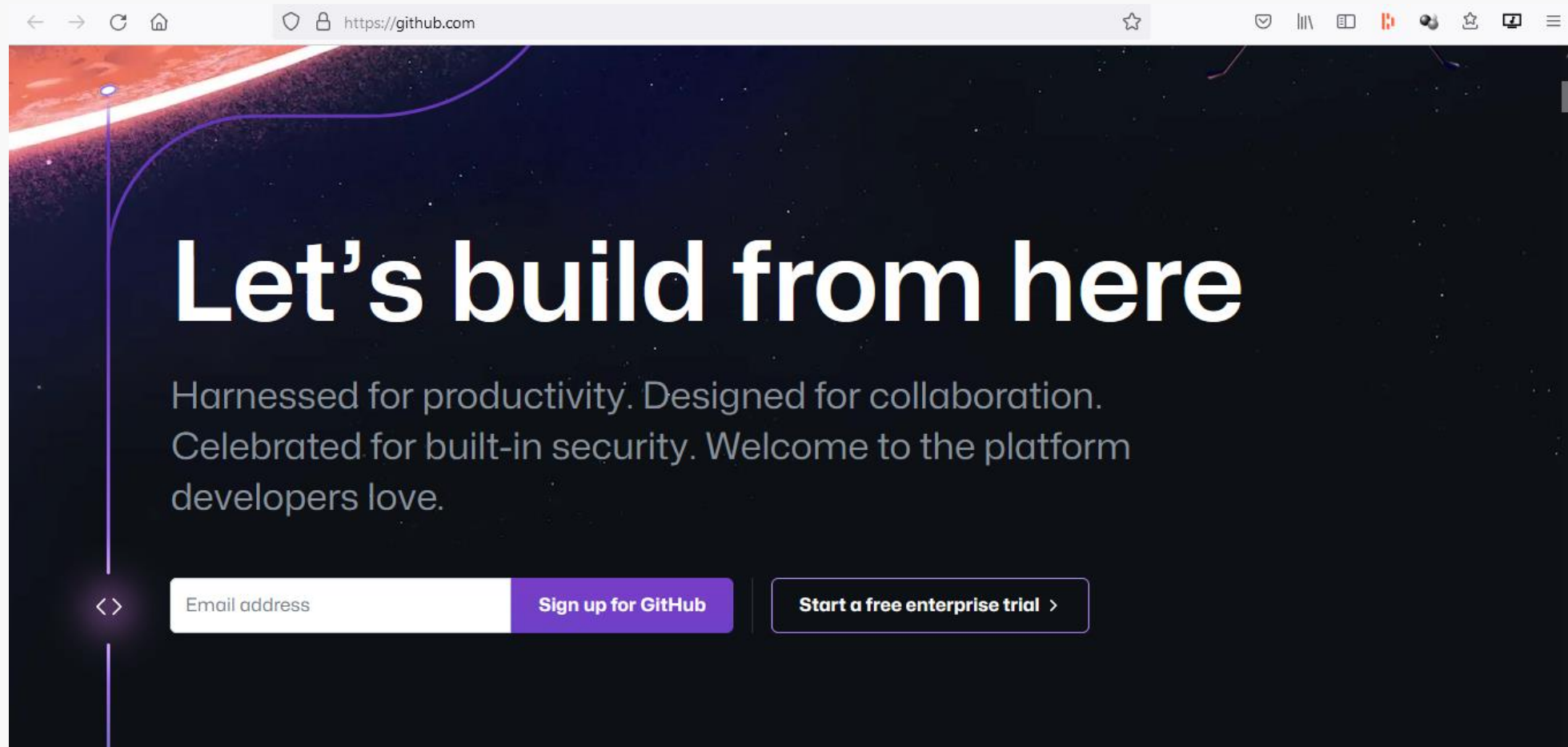
2) GitHub is an online software development platform

Let's start with GitHub !



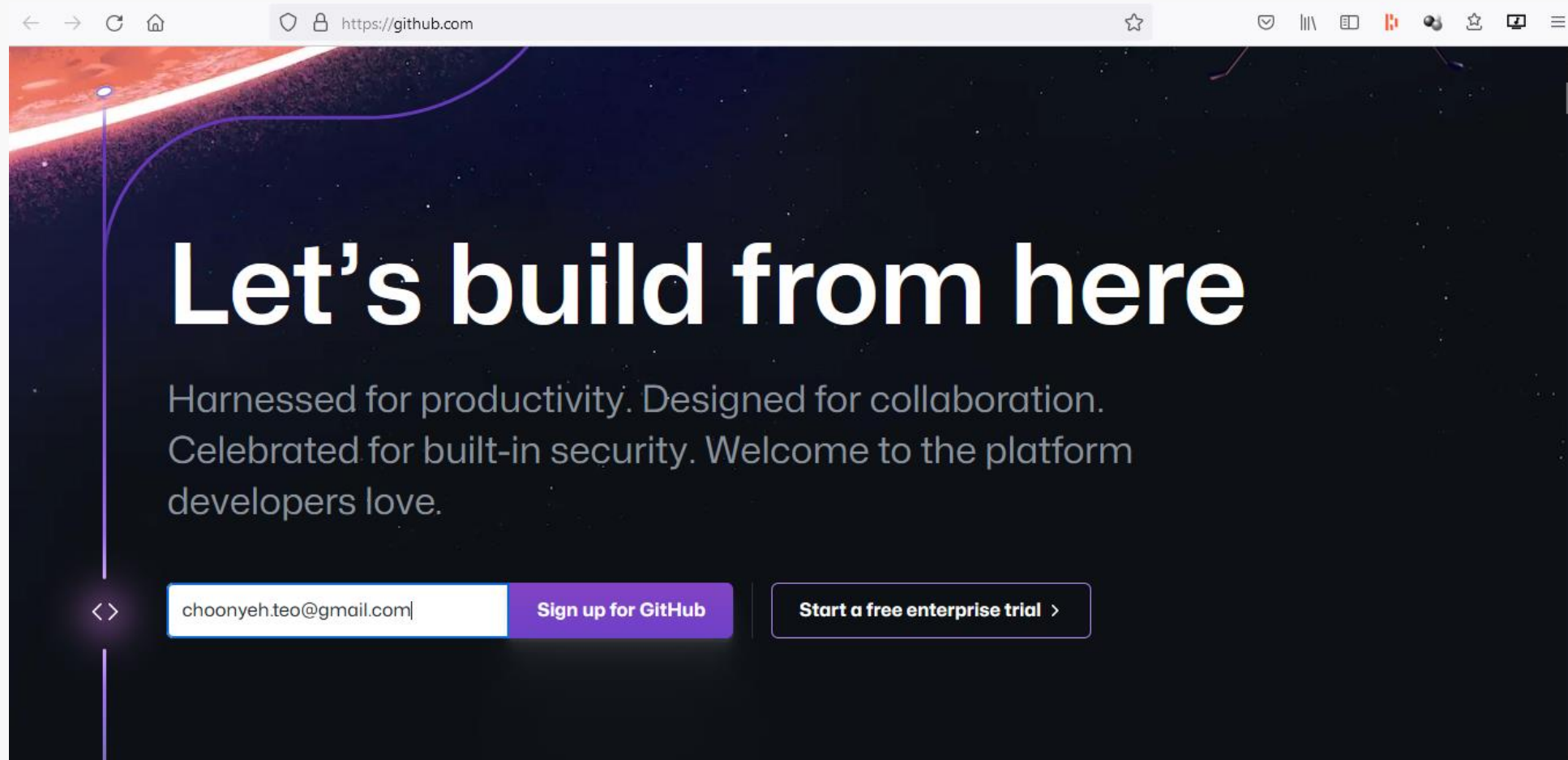
# Start with GitHub

1) Create a free GitHub account : <https://github.com/>



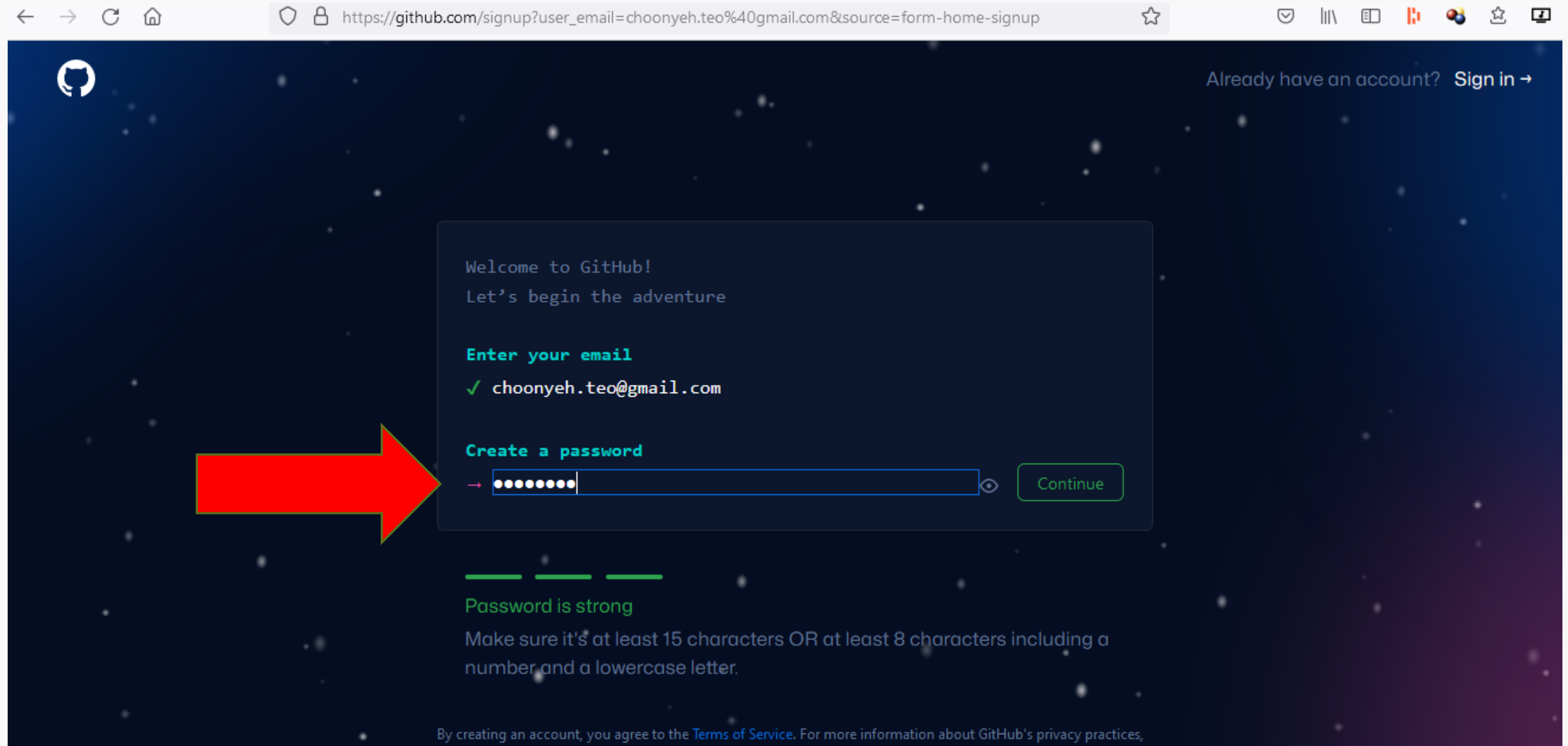
# Start with GitHub

2) Enter an email address (example: choonyeh.teo@gmail.com)



# Start with GitHub

3)



The screenshot shows the GitHub sign-up page. The browser's address bar displays the URL: `https://github.com/signup?user_email=choonyeh.teo%40gmail.com&source=form-home-signup`. The page features the GitHub logo in the top left and a "Sign in" link in the top right. The main content area has a dark blue background with a starry pattern. A central white box contains the following text:

Welcome to GitHub!  
Let's begin the adventure

**Enter your email**  
✓ choonyeh.teo@gmail.com

**Create a password**  
→ [password field] [Continue]

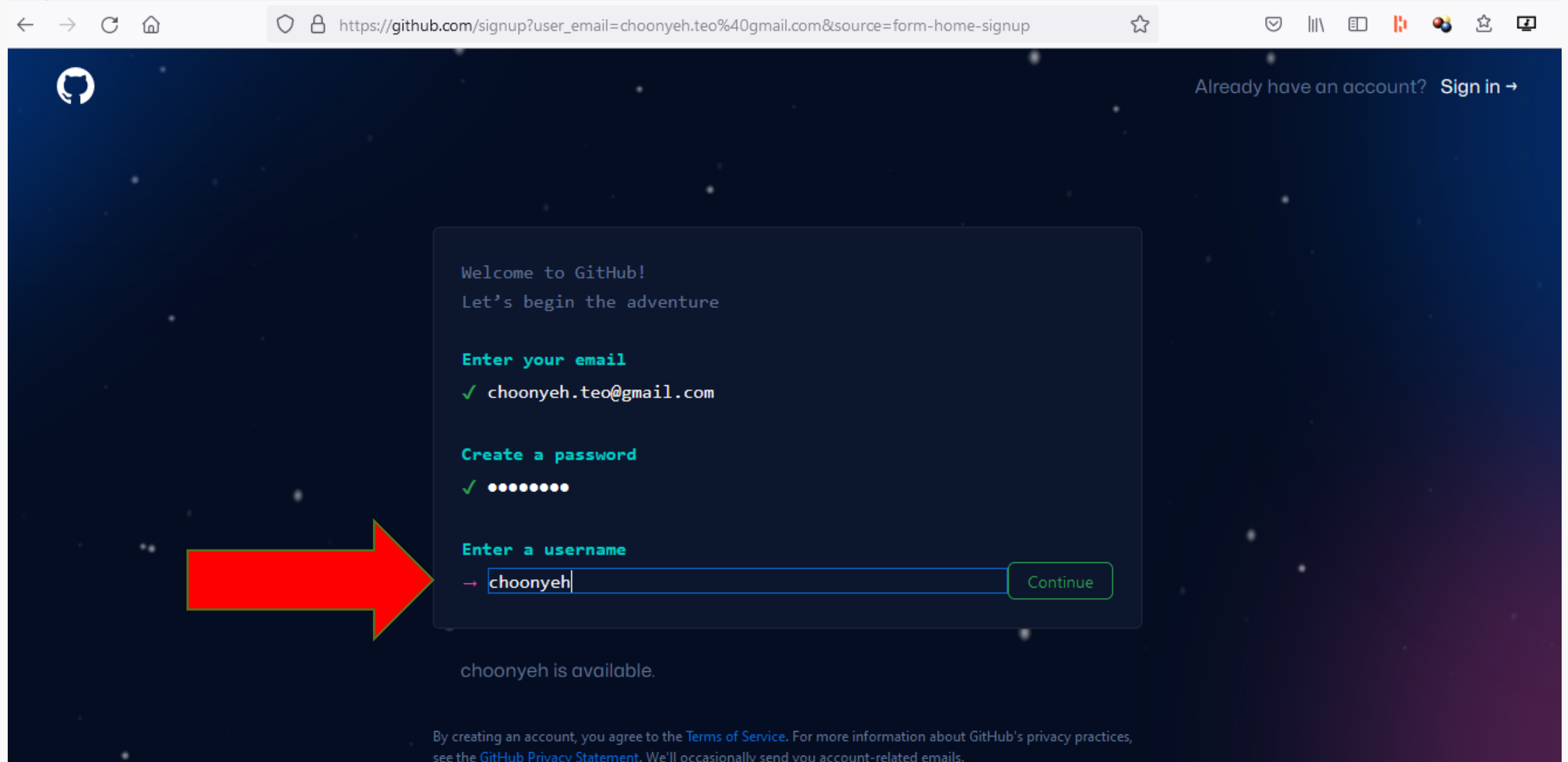
Below the password field, there are three green horizontal bars and the text: "Password is strong". Below this, it says: "Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter."

A large red arrow points from the left towards the password input field.

At the bottom, a small line of text reads: "By creating an account, you agree to the [Terms of Service](#). For more information about GitHub's privacy practices,"

# Start with GitHub

4)



The screenshot shows the GitHub sign-up process in a web browser. The address bar displays the URL: `https://github.com/signup?user_email=choonyeh.teo%40gmail.com&source=form-home-signup`. The page has a dark blue background with a starry pattern. In the top right corner, there is a link: "Already have an account? [Sign in](#) →". The main content area contains a white box with the following text:

Welcome to GitHub!  
Let's begin the adventure

**Enter your email**  
✓ choonyeh.teo@gmail.com

**Create a password**  
✓ ●●●●●●●●

**Enter a username**  
→ choonyeh [Continue](#)

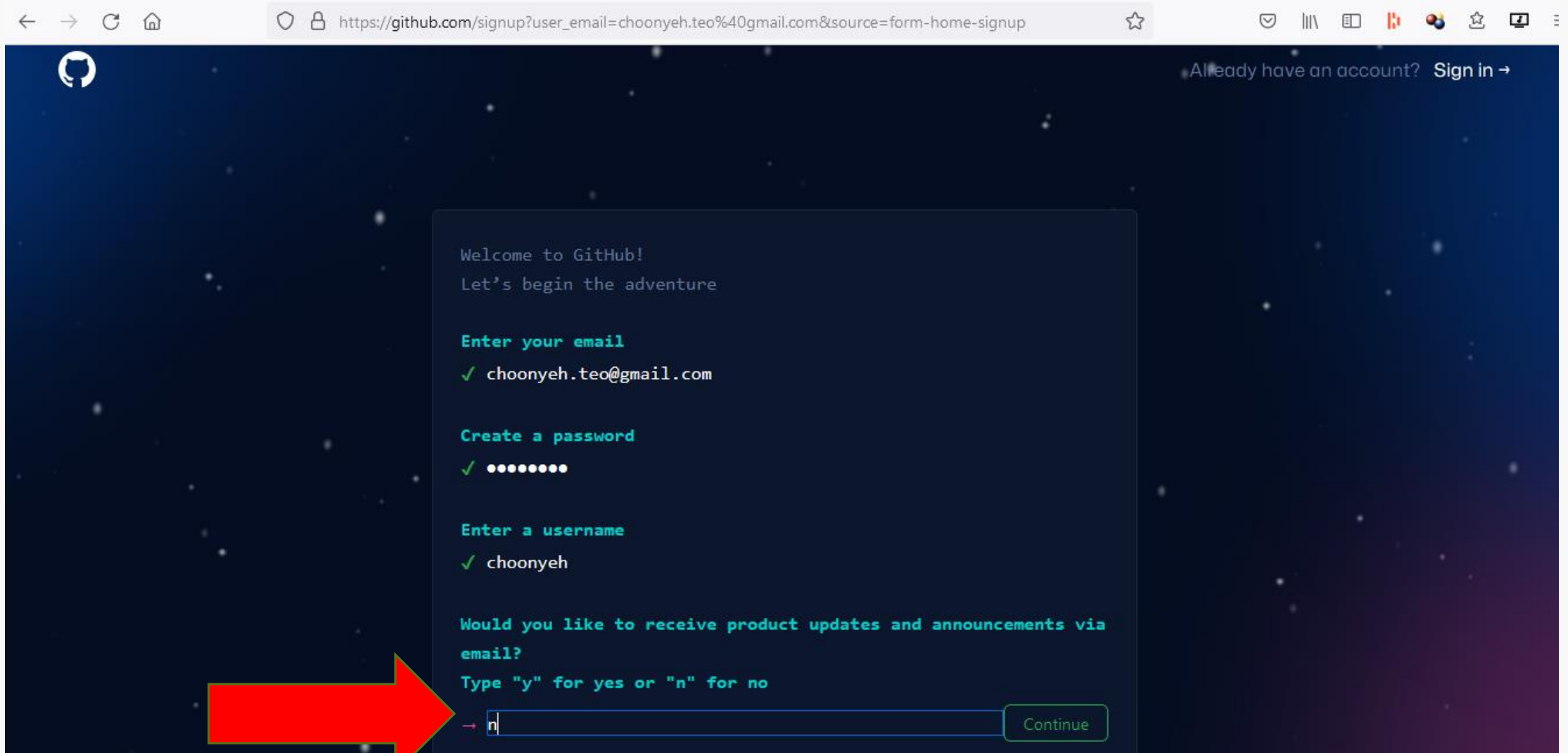
Below the username input, it says "choonyeh is available." At the bottom of the page, there is a small disclaimer: "By creating an account, you agree to the [Terms of Service](#). For more information about GitHub's privacy practices, see the [GitHub Privacy Statement](#). We'll occasionally send you account-related emails."

A large red arrow points from the left towards the "Enter a username" section, highlighting the current step in the sign-up process.



# Start with GitHub

5)



The screenshot shows the GitHub website's signup page. The browser's address bar displays the URL: `https://github.com/signup?user_email=choonyeh.teo%40gmail.com&source=form-home-signup`. The page has a dark blue background with a starry pattern. In the top right corner, there is a link that says "Already have an account? Sign in →". The main content area is a white box with the following text: "Welcome to GitHub! Let's begin the adventure". Below this, there are three sections, each with a green checkmark indicating success: "Enter your email" with the value "choonyeh.teo@gmail.com", "Create a password" with a masked password "●●●●●●●●", and "Enter a username" with the value "choonyeh". At the bottom, there is a question: "Would you like to receive product updates and announcements via email?" followed by the instruction "Type 'y' for yes or 'n' for no". A red arrow points to the input field where the letter "n" has been entered. To the right of the input field is a green "Continue" button.

← → ↻ 🏠 [https://github.com/signup?user\\_email=choonyeh.teo%40gmail.com&source=form-home-signup](https://github.com/signup?user_email=choonyeh.teo%40gmail.com&source=form-home-signup) ☆

🔒 [Already have an account? Sign in →](#)

Welcome to GitHub!  
Let's begin the adventure

Enter your email  
✓ choonyeh.teo@gmail.com

Create a password  
✓ ●●●●●●●●

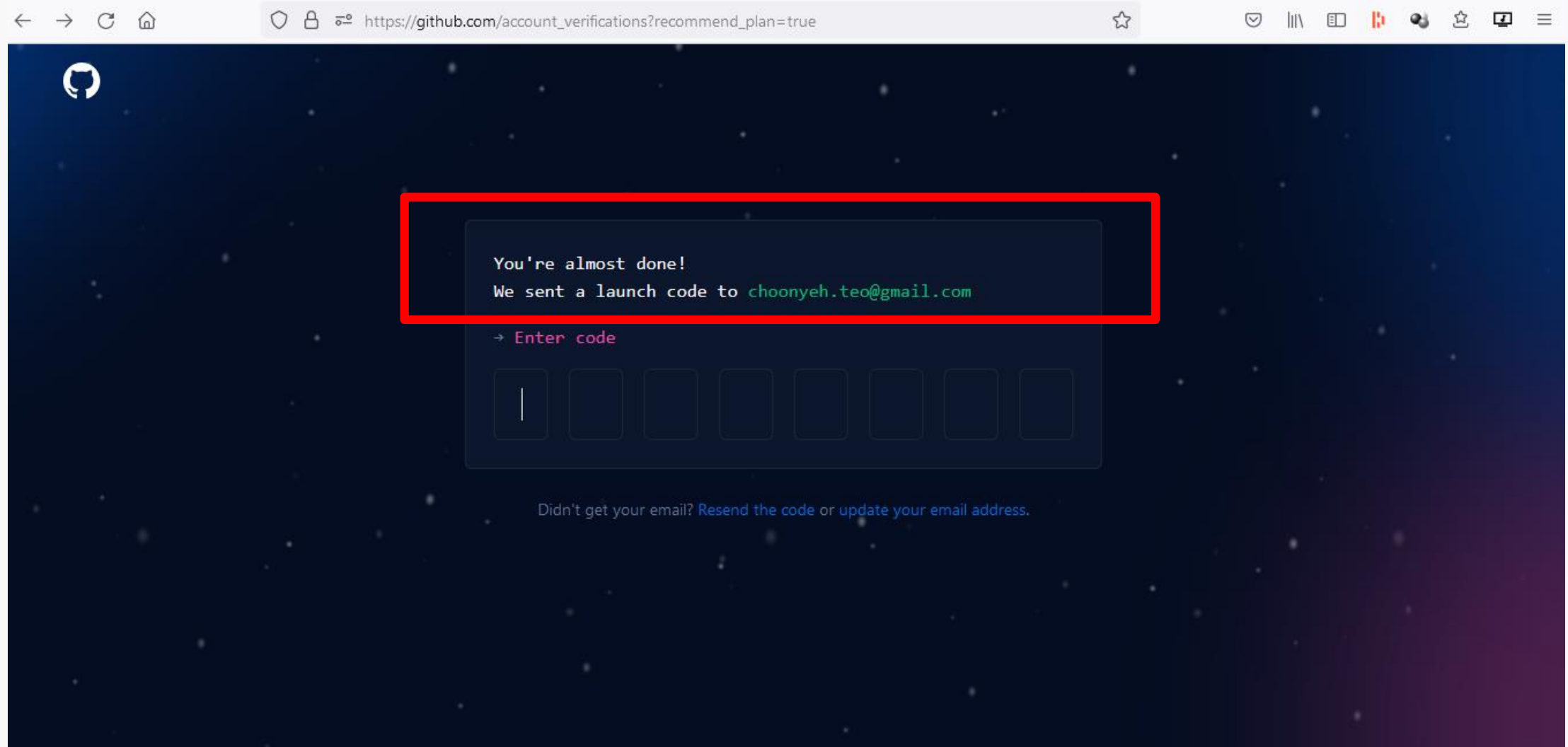
Enter a username  
✓ choonyeh

Would you like to receive product updates and announcements via email?  
Type "y" for yes or "n" for no

→ n [Continue](#)

# Start with GitHub

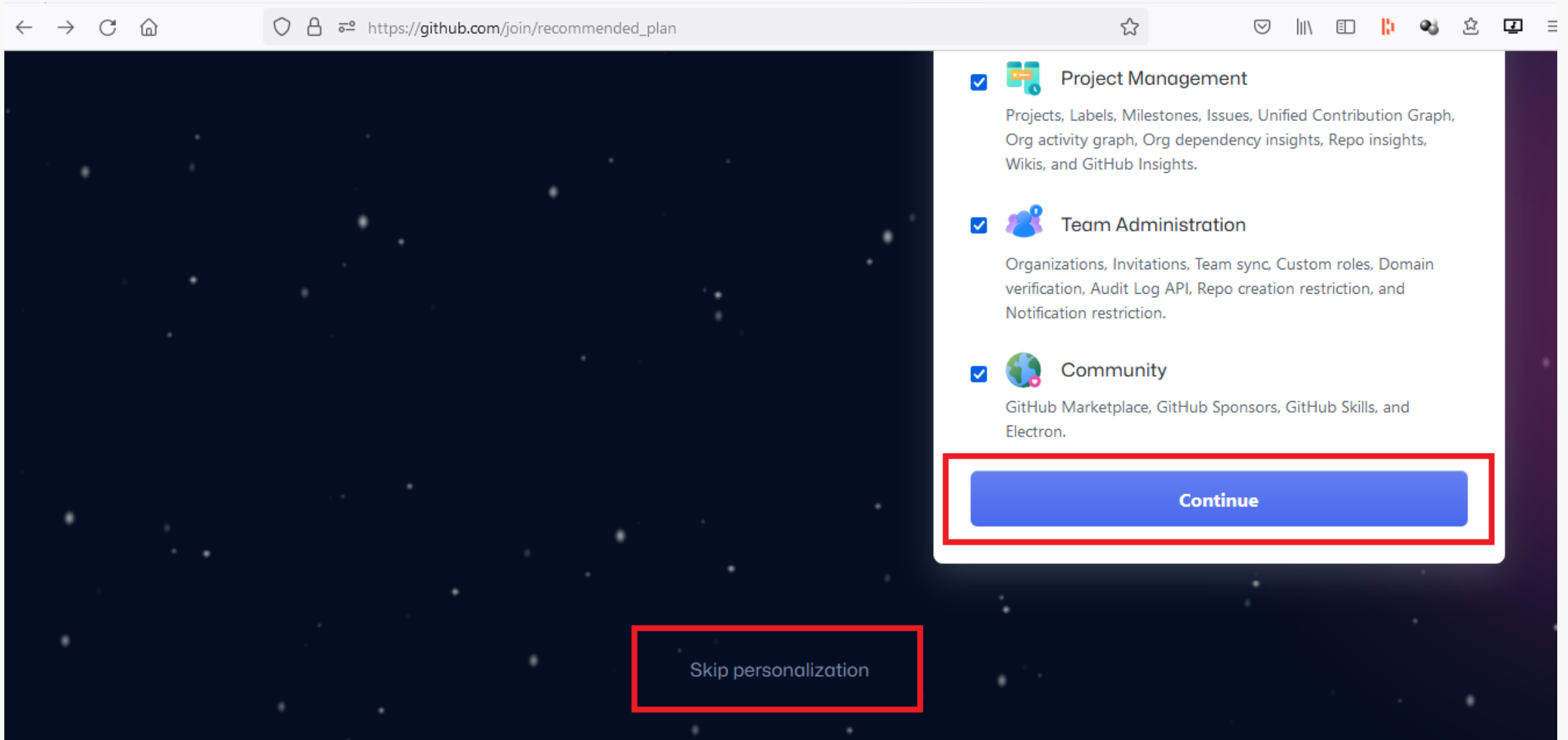
6)





## Start with GitHub

8)





# Start with GitHub

9)

← → ↻ 🏠 🔒 https://github.com/join/recommended\_plan ☆

👤👤👤👤👤

## Real-world tools, engaged students.

GitHub gives teachers free access to industry-standard tools for training developers.

### Free

- Unlimited public/private repositories
- 2,000 CI/CD minutes/month  
Free for public repositories
- 500MB of Packages storage  
Free for public repositories
- 120 core-hours of Codespaces compute
- 15GB of Codespaces storage
- Community support

### Get additional teacher benefits

#### GitHub Team

- Protect your branches  
Ensure that collaborators on your repository cannot make irrevocable changes to branches.
- Draft pull requests
- Required reviewers
- 3,000 CI/CD minutes/month  
Free for public repositories

# Start with GitHub


10)

← → ↻ 🏠


🔒 https://github.com/join/recommended\_plan ☆

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## GitHub Teacher Toolbox


 Free access to the industry's best developer tools  
Hundreds of offers, including Digital Ocean, Microsoft Azure, Heroku, MongoDB, DataDog, Twilio, and Stripe.

## GitHub Classroom

 Automate your course  
Track and manage assignments in your dashboard, grade work automatically, and help students when they get stuck.

## GitHub Campus Advisors

 Join a community for teachers  
GitHub Campus Advisors master Git and GitHub, and champion the use of real-world tools at their school.

 [Continue for free](#)

[Apply for your GitHub teacher benefits](#)

## Start with GitHub

11)

The screenshot shows the GitHub homepage for a user named 'choonyeh'. The browser address bar displays 'https://github.com'. The top navigation bar includes links for 'Pull requests', 'Issues', 'Codespaces', 'Marketplace', and 'Explore'. The main content area is divided into three columns. The left column, titled 'Create your first project', offers a green 'Create repository' button and a blue 'Import repository' link. Below this is a 'Recent activity' section with a dashed box containing a message about activity links. The middle column, titled 'The home for all developers — including you.', contains a 'Start writing code' button and two cards: 'Start a new repository' and 'Introduce yourself with a profile README'. The 'Start a new repository' card includes a text input for the repository name, radio buttons for 'Public' and 'Private' visibility, and a 'Create a new repository' button. The 'Introduce yourself with a profile README' card shows a preview of a README file with a 'Create' button. The right column features a 'Start coding instantly with GitHub Codespaces' modal and a 'Latest changes' section listing recent updates.

Create your first project

Ready to start building? Create a repository for a new idea or bring over an existing repository to keep contributing to it.

Create repository Import repository

Recent activity

When you take actions across GitHub, we'll provide links to that activity here.

The home for all developers — including you.

Welcome to your personal dashboard, where you can find an introduction to how GitHub works, tools to help you build software, and help merging your first lines of code.

<> Start writing code

Start a new repository

A repository contains all of your project's files, revision history, and collaborator discussion.

choonyeh / name your new repository...

☐ Public  
Anyone on the internet can see this repository

☒ Private  
You choose who can see and commit to this repository

Create a new repository

Introduce yourself with a profile README

Share information about yourself by creating a profile README, which appears at the top of your profile page.

choonyeh / README.md Create

1 - 🌟 Hi, I'm @choonyeh  
2 - 🐼 I'm interested in ...  
3 - 🌱 I'm currently learning ...  
4 - 🚀 I'm looking to collaborate ...  
5 - 📖 How to reach me ...  
6

Start coding instantly with GitHub Codespaces

Spin up fully configured dev environments on powerful VMs that start in seconds. Get up to 60 hours a month of free time.

Get started

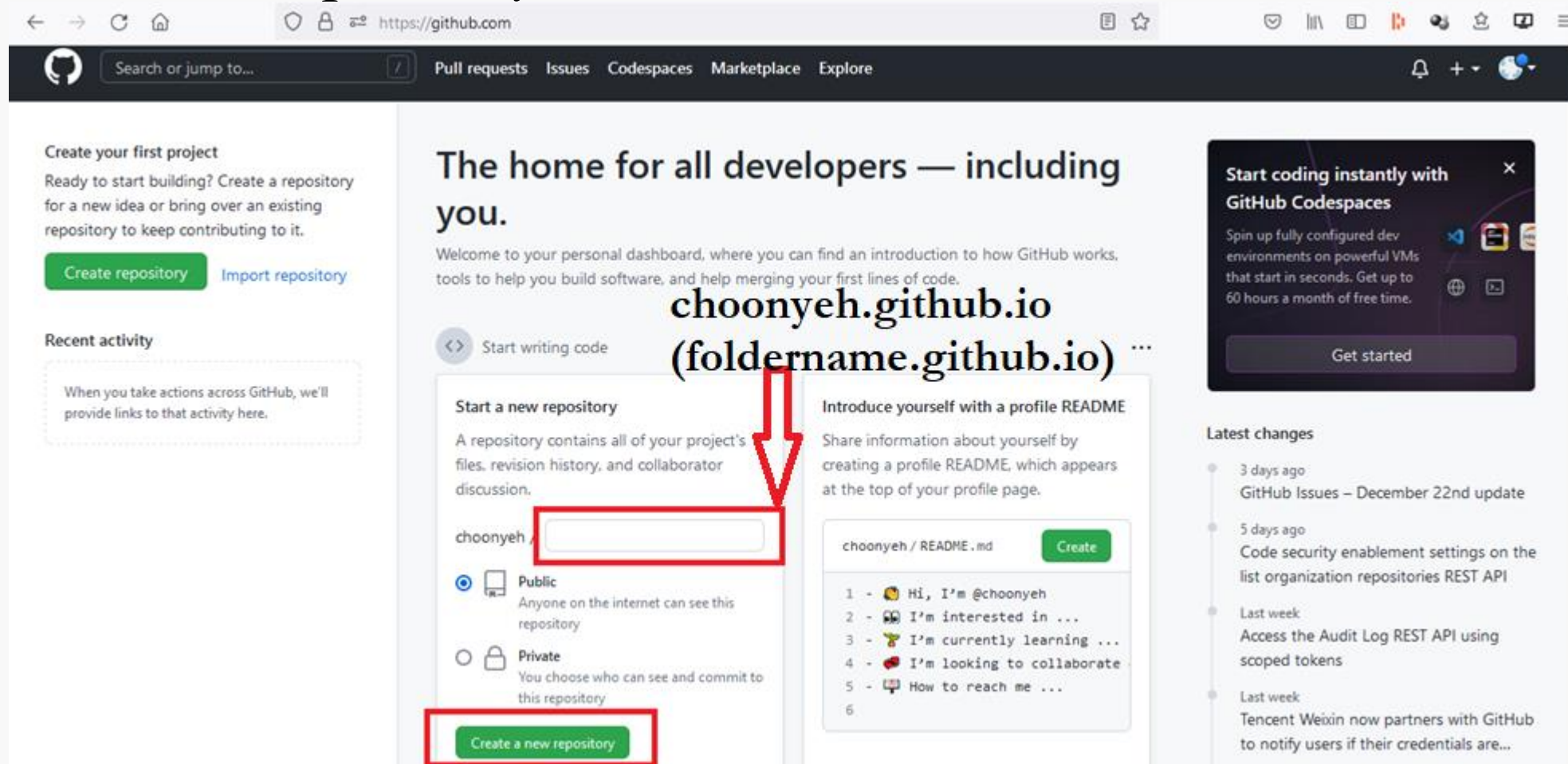
Latest changes

- 3 days ago  
GitHub Issues – December 22nd update
- 5 days ago  
Code security enablement settings on the list organization repositories REST API
- Last week  
Access the Audit Log REST API using scoped tokens
- Last week  
Tencent Weixin now partners with GitHub to notify users if their credentials are...



# Start with GitHub

## 12) Create a new repository **\*\*\* Add a README file**



The screenshot shows the GitHub 'Start a new repository' page. The browser address bar displays 'https://github.com'. The page header includes a search bar and navigation links: 'Pull requests', 'Issues', 'Codespaces', 'Marketplace', and 'Explore'. On the left sidebar, there's a 'Create your first project' section with 'Create repository' and 'Import repository' buttons, and a 'Recent activity' section. The main content area is titled 'The home for all developers — including you.' and 'Welcome to your personal dashboard, where you can find an introduction to how GitHub works, tools to help you build software, and help merging your first lines of code.' Below this, the username 'choonyeh.github.io' is displayed with a red arrow pointing to the repository name input field. The 'Start a new repository' section has a text input field containing 'choonyeh /' and a red box around it. Below the input field are radio buttons for 'Public' (selected) and 'Private'. At the bottom of this section is a red box around the 'Create a new repository' button. To the right, the 'Introduce yourself with a profile README' section shows a preview of a README file named 'choonyeh / README.md' with a 'Create' button. The preview content includes a list of items: 'Hi, I'm @choonyeh', 'I'm interested in ...', 'I'm currently learning ...', 'I'm looking to collaborate', and 'How to reach me ...'. On the far right, there's a 'Start coding instantly with GitHub Codespaces' banner and a 'Latest changes' section listing recent updates.

Create your first project  
Ready to start building? Create a repository for a new idea or bring over an existing repository to keep contributing to it.

Create repository Import repository

Recent activity  
When you take actions across GitHub, we'll provide links to that activity here.

The home for all developers — including you.  
Welcome to your personal dashboard, where you can find an introduction to how GitHub works, tools to help you build software, and help merging your first lines of code.

choonyeh.github.io  
(foldername.github.io) ...

Start a new repository  
A repository contains all of your project's files, revision history, and collaborator discussion.

choonyeh /

Public  
Anyone on the internet can see this repository

Private  
You choose who can see and commit to this repository

Create a new repository

Introduce yourself with a profile README  
Share information about yourself by creating a profile README, which appears at the top of your profile page.

choonyeh / README.md Create

1 - Hi, I'm @choonyeh  
2 - I'm interested in ...  
3 - I'm currently learning ...  
4 - I'm looking to collaborate  
5 - How to reach me ...  
6

Start coding instantly with GitHub Codespaces  
Spin up fully configured dev environments on powerful VMs that start in seconds. Get up to 60 hours a month of free time.

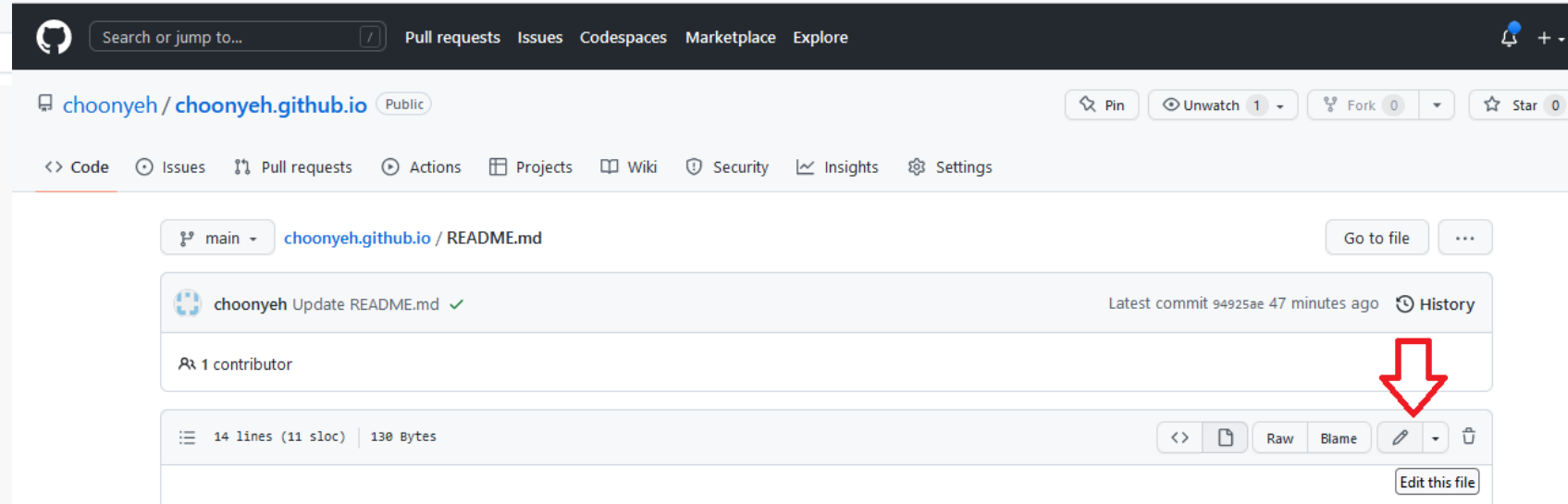
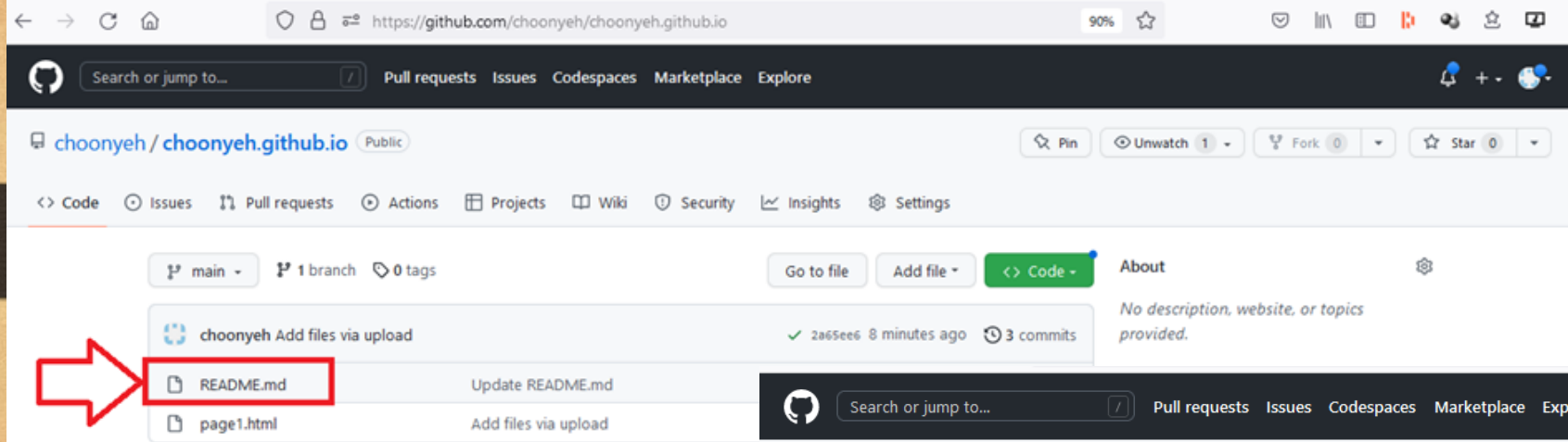
Get started

Latest changes  
3 days ago  
GitHub Issues – December 22nd update  
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Last week  
Access the Audit Log REST API using scoped tokens  
Last week  
Tencent Weixin now partners with GitHub to notify users if their credentials are...



## Start with GitHub

13) Click on README.md -> choose Edit this file



# Start with GitHub

14) Type in -> Commit changes

**# H1**

**## H2**

**### H3**

**#### H4**

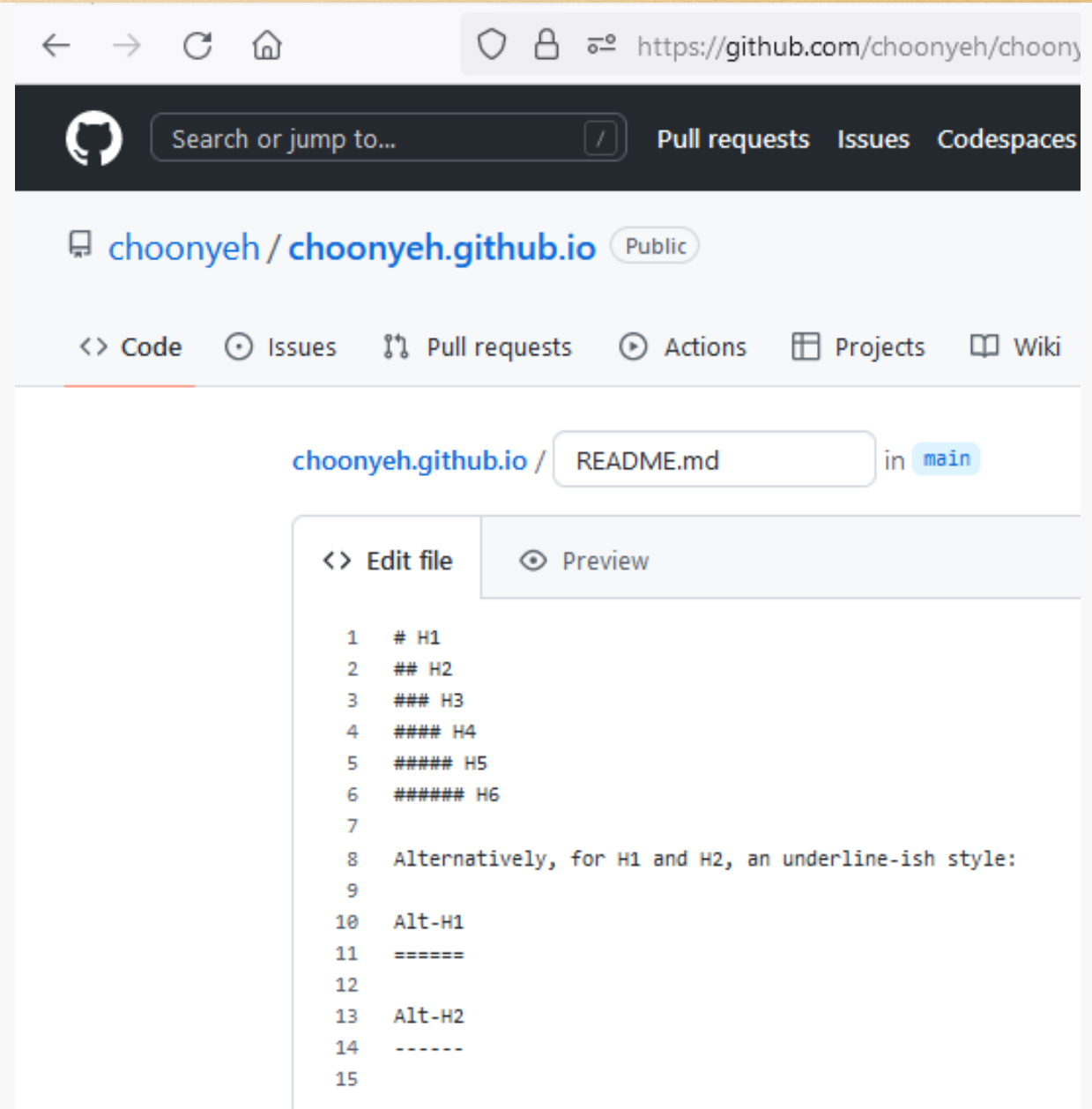
**##### H5**

**##### H6**

Alternatively, for H1 and H2, an underline-ish style:

**Alt-H1=====**

**Alt-H2-----**

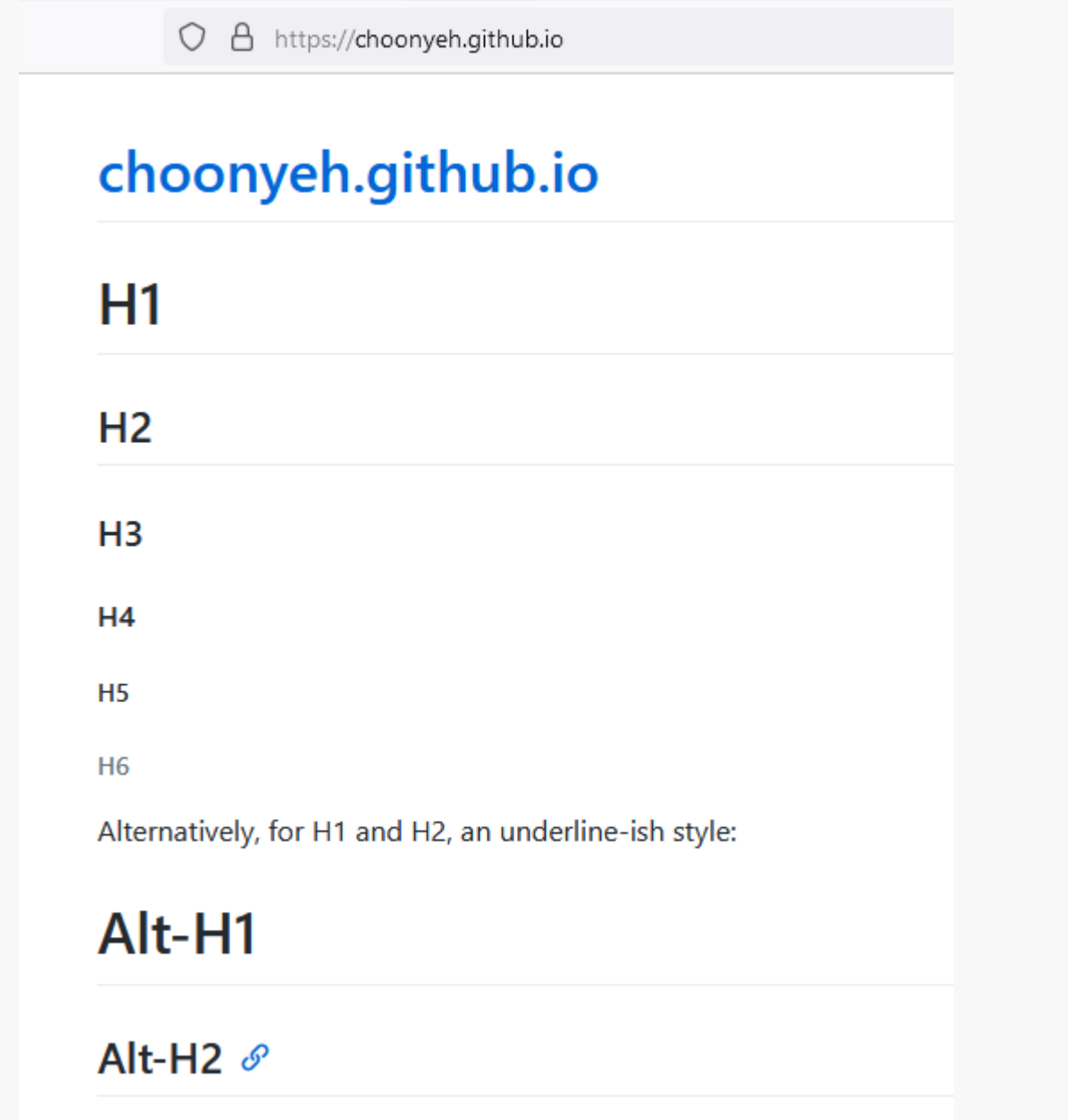


# Start with GitHub

15) Open a new tab in web browser

-> choonyeh.github.io

-> https://choonyeh.github.io/



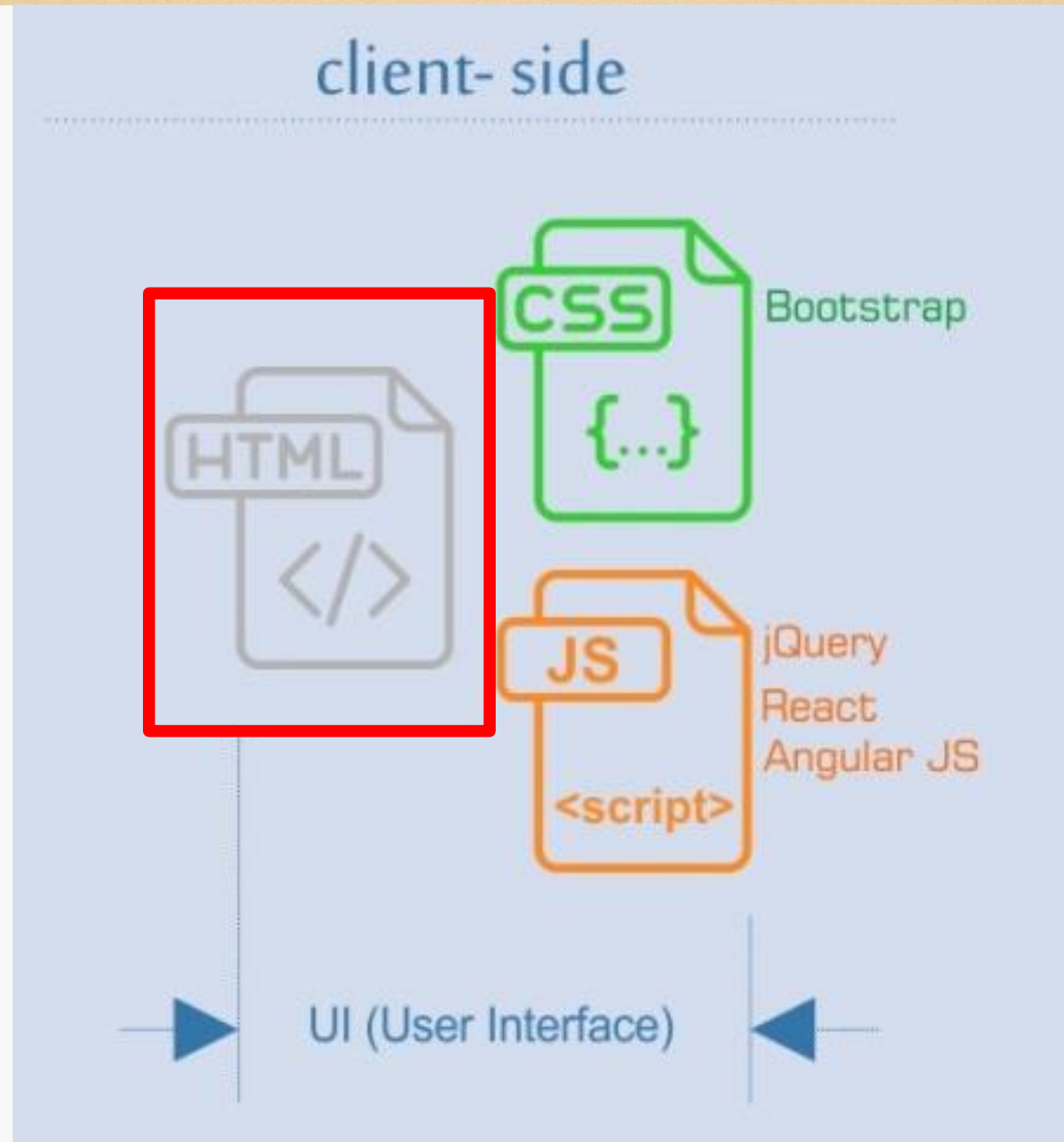


# HTML

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## Introduction







# HTML

- 1) stands for **H**yper **T**ext **M**arkup **L**anguage
- 2) With HTML you can create your own Web site
- 3) HTML is the primary language of the World Wide Web (WWW)
- 4) Developers use it to design web page such as text and hyperlinks
- 5) HTML is not case sensitive language

# HTML

1) HTML IS markup language, NOT programming language

markup language	programming language
- used to present information	- used to give instructions to a computer to perform a particular task.
- interpreted by the web browser	- compiled by a compiler
Example: HTML, XML, XHTML	Example: Java, C++, PHP



# HTML - Markup Language

- 1) A markup language is a set of **markup tags**.
- 2) HTML uses **markup tags** to describe webpages.
- 3) HTML documents contain HTML tags and plain text.
- 4) HTML consists of a series of elements.

# HTML

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## **Basic Structure**

# HTML – Basic Structure

- 1) **Tag** - Used to specify regions of HTML documents for the web browser to interpret. Example : `<tagname>`
- 2) **Element** - HTML element is everything from the start tag to the end tag. Example: `<p>New paragraph.</p>`
- 3) **Attribute** - Used to modify the value of the HTML element. Elements will often have multiple attributes.

# HTML - Tag

- 1) With the help of tags, a web browser can distinguish between an HTML content and a simple content.
- 2) HTML tags contain three main parts:
  - > opening tag
  - > content
  - > closing tag
- 3) Some HTML tags are unclosed tags.



# HTML - Tag

- 1) **All HTML tags must enclosed within < > angle bracket**
- 2) Tags come in pairs, example : <html> and </html>
- 3) The first tag in a pair is the start tag, the second tag is the end tag
  - > Start tag/opening tags : <html>
  - > End tag/close tags: </html>

# HTML – **Types of Tags**

1) There are two different types of HTML tags:

-> **Container Element** & **Empty Element**

2) **Container Element** -> **Container Tags** contains start tag & end tag

Example: <html> and </html>, <body> and </body>

3) **Empty Element** -> **Empty Tags** contains start tag

Example: <BR>, <HR>, <IMG>

( \*\*\* Empty Tags = **Unclosed HTML Tags** )

# HTML – **Types of Tags**

Container Tags	Empty Tags
Container tags require a starting as well as an ending tag.	Empty tags require just a starting tag and not an ending tag.
<code>&lt;HTML&gt;</code> and <code>&lt;/HTML&gt;</code> , <code>&lt;TITLE&gt;</code> and <code>&lt;/TITLE&gt;</code> are examples of container tags.	<code>&lt;BR&gt;</code> , <code>&lt;IMG&gt;</code> are examples of empty tags.

# HTML - Element

Examples of some HTML elements:

-> `<h1>New Heading</h1>`

-> `<p>New paragraph</p>`

Start tag	Element content	End tag
<code>&lt;h1&gt;</code>	My First Heading	<code>&lt;/h1&gt;</code>
<code>&lt;p&gt;</code>	My first paragraph.	<code>&lt;/p&gt;</code>
<code>&lt;br&gt;</code>	<i>none</i>	<i>none</i>



# HTML - **Attribute**

- 1) Attributes provide additional information about elements.
- 2) Attributes are used with a tag to modify its function.
- 3) Attributes are always specified in the start tag.

## **Example element :**

```
<p>  
New paragraph  
</p>
```

## **Add in attribute :**

```
<p style="color:red;">  
New paragraph  
</p>
```

# HTML – Tag and Attribute

Tag	Attribute
<p>A tag is a coded HTML command that defines the structure and appearance of a web page.</p>	<p>An attribute is a special word used inside tag to specify additional information about the tag such as color, alignment etc.</p>
<p>For e.g. &lt;H1&gt; is a tag that indicates browser to display the text in a bolder/ larger font than the normal text.</p>	<p>For e.g. &lt;H1 align="center"&gt;. In this example, align is an attribute of H1. It indicates that the text inside the &lt;H1&gt; tag is to be displayed in the center.</p>

# HTML – Basic Structure

```
<html>
```

```
<head>
```

```
<title>Welcome to My Website</title>
```

```
</head>
```

```
<body>
```

```
<h1> My First Heading</h1>
```

```
</body>
```

```
</html>
```

# HTML – Basic Structure

**<html>**

**<head>**

**<title>**Welcome to My Website**</title>**

**</head>**

**<body>**

**<h1>** My First Heading**</h1>**

**</body>**

**</html>**

**<html>** : Describe HTML web page that is to be viewed by a web browser.

**<head>** : This defines the header section of the page.

**<title>** : This shows a caption in the title bar of the page.

**<body>** : This tag show contents of the web page will be displayed.



## HTML – **Basic Structure \*\*\***

- 1) `<html></html>` -> Begins and ends each and every web page
- 2) `<head></head>` -> Javascript and CSS elements is place here
- 3) `<title></title>` -> Tags will be displayed at the top of a viewer's browser
- 4) `<body></body>` -> The `<body>` element is where all content is placed.

# HTML – Basic Structure - <Body>

Attribute	Description
Bgcolor	To specify the background color of the web page
Text	To specify the color of the text to be
Background	To specify the relative or absolute path of the image file to be displayed as background of the web page.
Leftmargin, topmargin	To specify the amount of space to be left blank from the top and left margins of the web page. Its value is specified in pixels <sup>(px)</sup> .
Link, alink, vlink	Attributes to assign colours to link, active link and visited link

# HTML

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**Let's start coding**

# Start with HTML

To begin coding and using HTML you need only two things:

- A simple-text editor (Notepad, Textpad)
- A browser (IE, Firefox, Chrome)



# HTML – Basic Structure – Activity1

```
<html>
<head>
<title>Welcome to My Website</title>
</head>
<body>
<h1> My First Heading</h1>
</body>
</html>
```

**<html>** : Describe HTML web page that is to be viewed by a web browser.

**<head>** : This defines the header section of the page.

**<title>** : This shows a caption in the title bar of the page.

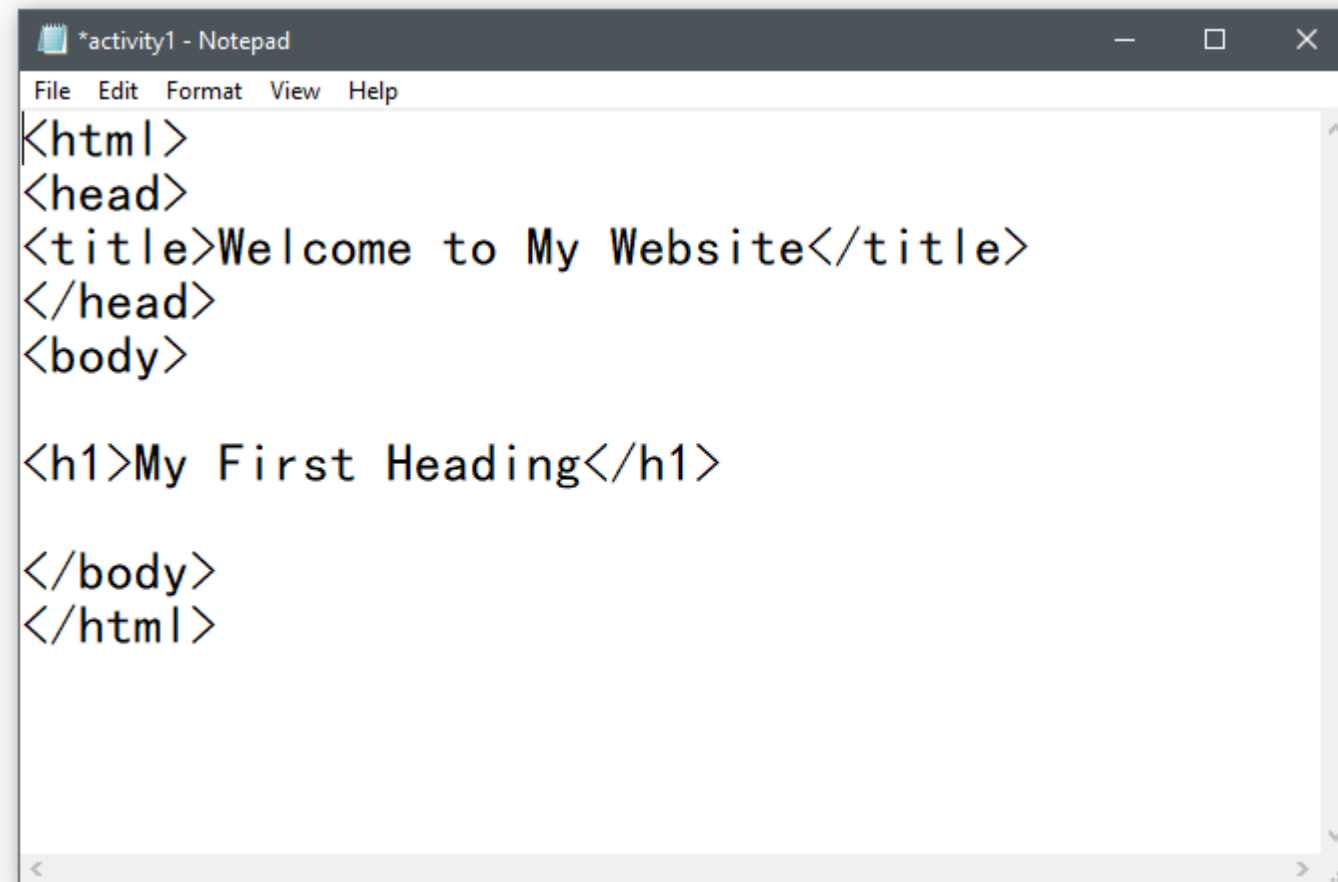
**<body>** : This tag show contents of the web page will be displayed.

# HTML – **Activity 1**

- 1) Type the html code into Notepad
- 2) Save it as activity1.html in DCS3003\coding folder
- 3) Open activity1.html in your favourite browser

# HTML – Activity 1

1) Type the html code into Notepad

A screenshot of a Notepad window titled '\*activity1 - Notepad'. The window has a menu bar with 'File', 'Edit', 'Format', 'View', and 'Help'. The text area contains the following HTML code:

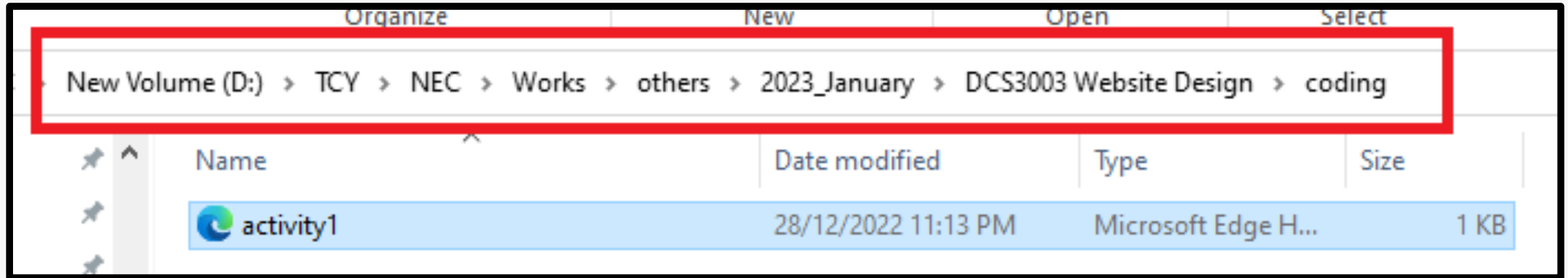
```
<html>
<head>
<title>Welcome to My Website</title>
</head>
<body>

<h1>My First Heading</h1>

</body>
</html>
```

# HTML – Activity 1

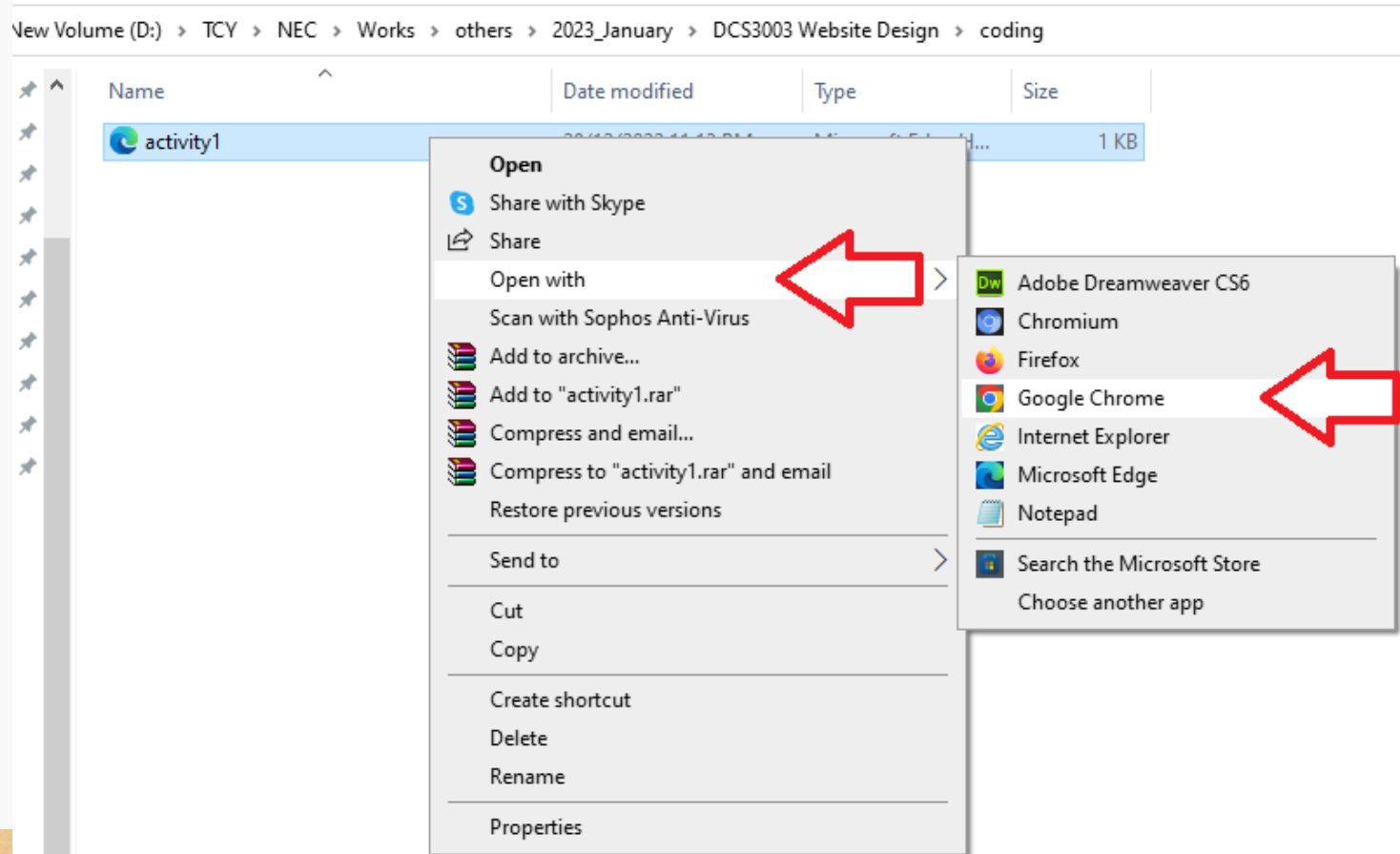
2) Save it as activity1.html in DCS3003\coding folder





# HTML – Activity 1

3) Open activity1.html in your favourite browser



# HTML – Activity 1

3) Open activity1.html in your favourite browser

