

# E-Commerce Platform Deployment with Git, Linux, and AWS

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**Environment:** Windows OS [Hyper Terminal]

**Project link:** <https://github.com/Oluwaseunoa/DevOps-Projects/tree/main/Cloud%20Computing/E-Commerce%20Platform%20Deployment%20with%20Git%2C%20Linux%2C%20and%20AWS>

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## Project Introduction

This capstone project focuses on building and deploying an **e-commerce platform** named **MarketPeak**. The platform will provide core online shopping functionalities such as product listings, a shopping cart, and user authentication. The project demonstrates end-to-end web development and deployment practices, starting from selecting and customizing a suitable HTML/CSS template to hosting the website on an AWS EC2 instance.

The entire development process is tracked with **Git** for version control, ensuring proper management of changes, collaboration, and rollback capabilities. The implementation takes place in a **Linux environment**, reinforcing industry-standard deployment workflows. Finally, the live platform is made accessible via an **Apache web server** running on a cloud-based infrastructure.

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## Project Background

MarketPeak is envisioned as a scalable online marketplace that can grow with the needs of vendors and customers. The project's foundation lies in leveraging **ready-made HTML/CSS templates** from sources such as Tooplate, which allows rapid prototyping and customization without building the interface from scratch.

This project bridges three crucial aspects of modern web development:

1. **Version Control (Git & GitHub)** – Ensuring the codebase is organized, backed up, and collaboration-ready.
2. **Linux Server Administration** – Managing file systems, permissions, and service configuration for reliable deployment.
3. **Cloud Hosting (AWS EC2)** – Utilizing elastic, on-demand infrastructure to host and scale the application.

By integrating these components, MarketPeak serves as a comprehensive demonstration of **full-stack deployment** in a real-world setting.

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## Project Objectives

The objectives of this project are to:

1. **Select and Customize a Web Template** Adapt a Tooplate template to match the MarketPeak brand identity.
  2. **Implement Git-based Version Control** Track all changes, manage branches, and push updates to a remote GitHub repository.
  3. **Set Up a Linux Development and Hosting Environment** Use Ubuntu Server for local development and AWS EC2 for production hosting.
  4. **Deploy the E-Commerce Platform to AWS EC2** Configure Apache to serve the website publicly over HTTP/HTTPS.
  5. **Demonstrate a Live Update Workflow** Make code changes in a development branch, merge via GitHub pull requests, and push updates to the live server.
  6. **Document the Process in Detail** Provide a step-by-step report, supported with 58 screenshots, to ensure the workflow can be replicated by others.
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## Step 1: Create Project Folder and Initialize Git

Open your terminal, navigate to the desired parent directory, and create the project folder. Git will initialize the empty repository.

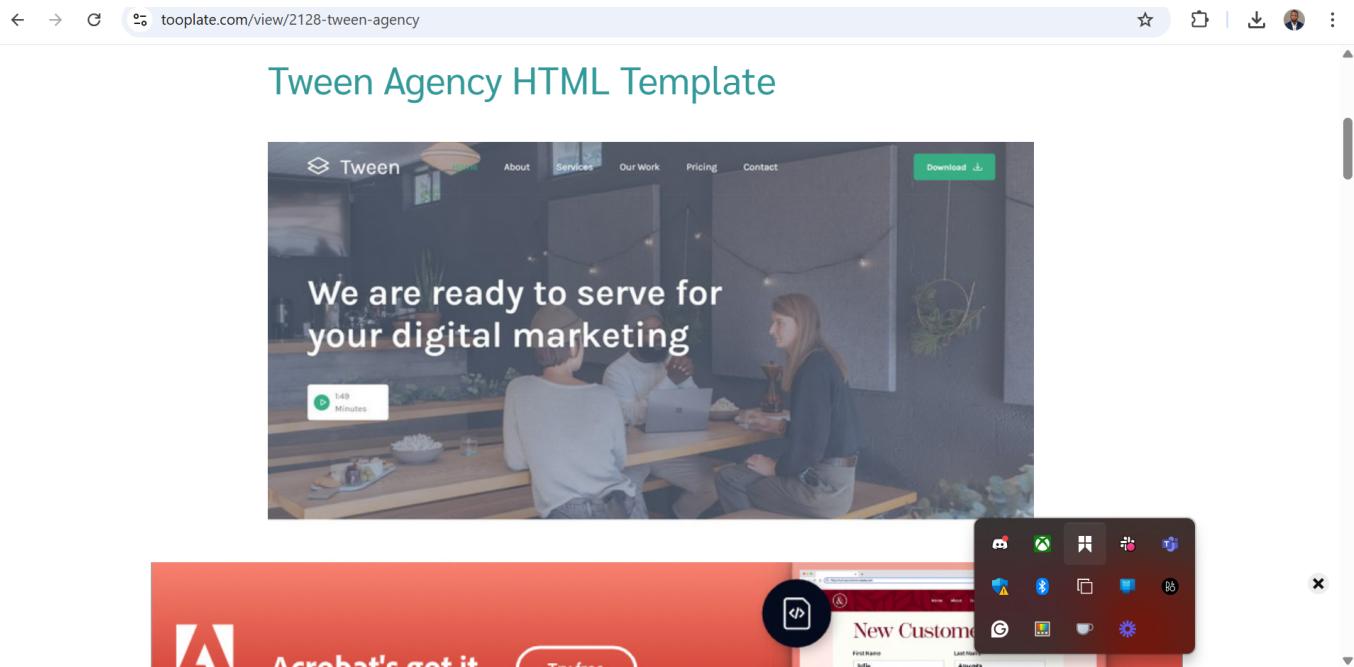
- **Command:**

```
mkdir MarketPeak_Ecommerce  
cd MarketPeak_Ecommerce  
git init
```

```
HP@DESKTOP-19M74R1 MINGW64 ~/Documents/Workspace  
$ mkdir MarketPeak_Ecommerce  
HP@DESKTOP-19M74R1 MINGW64 ~/Documents/Workspace  
$ cd MarketPeak_Ecommerce/  
HP@DESKTOP-19M74R1 MINGW64 ~/Documents/workspace/MarketPeak_Ecommerce  
$ git init
```

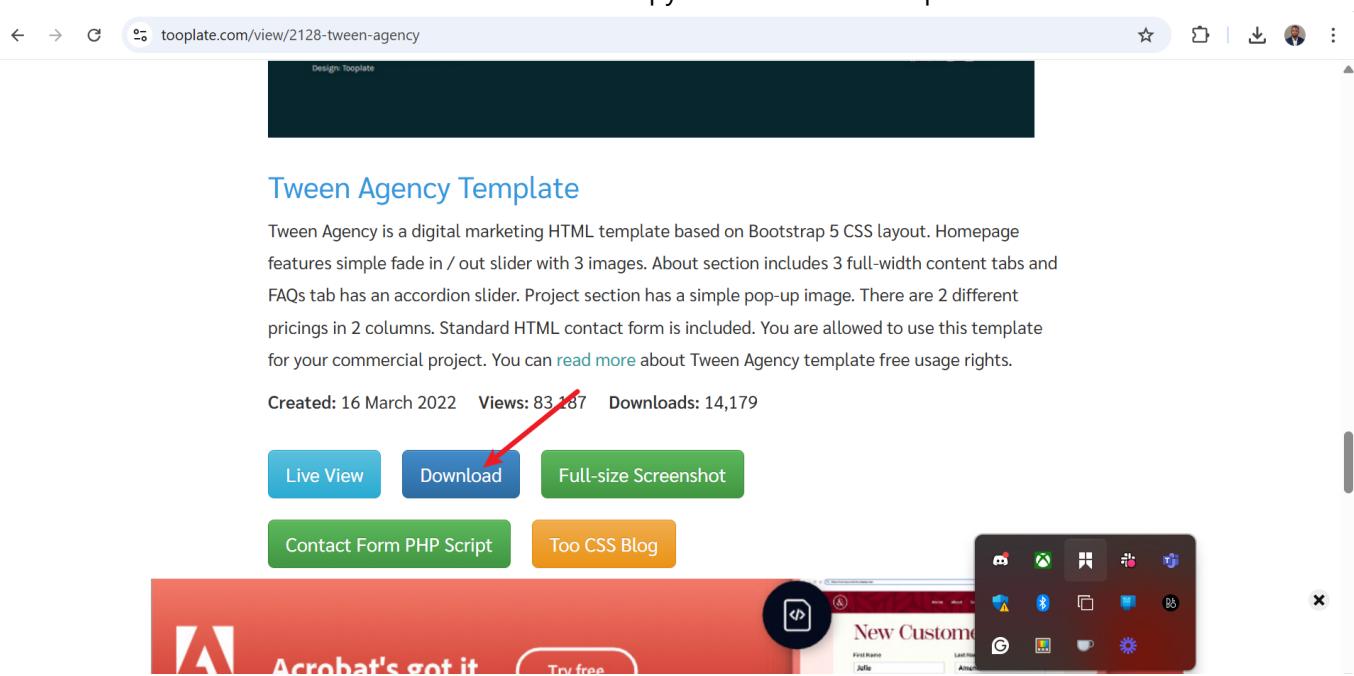
## Step 2: Pick a Tooplate Website Template

Visit [Tooplate.com](https://tooplate.com) and select a suitable e-commerce template. This saves development time and provides a professional design base.



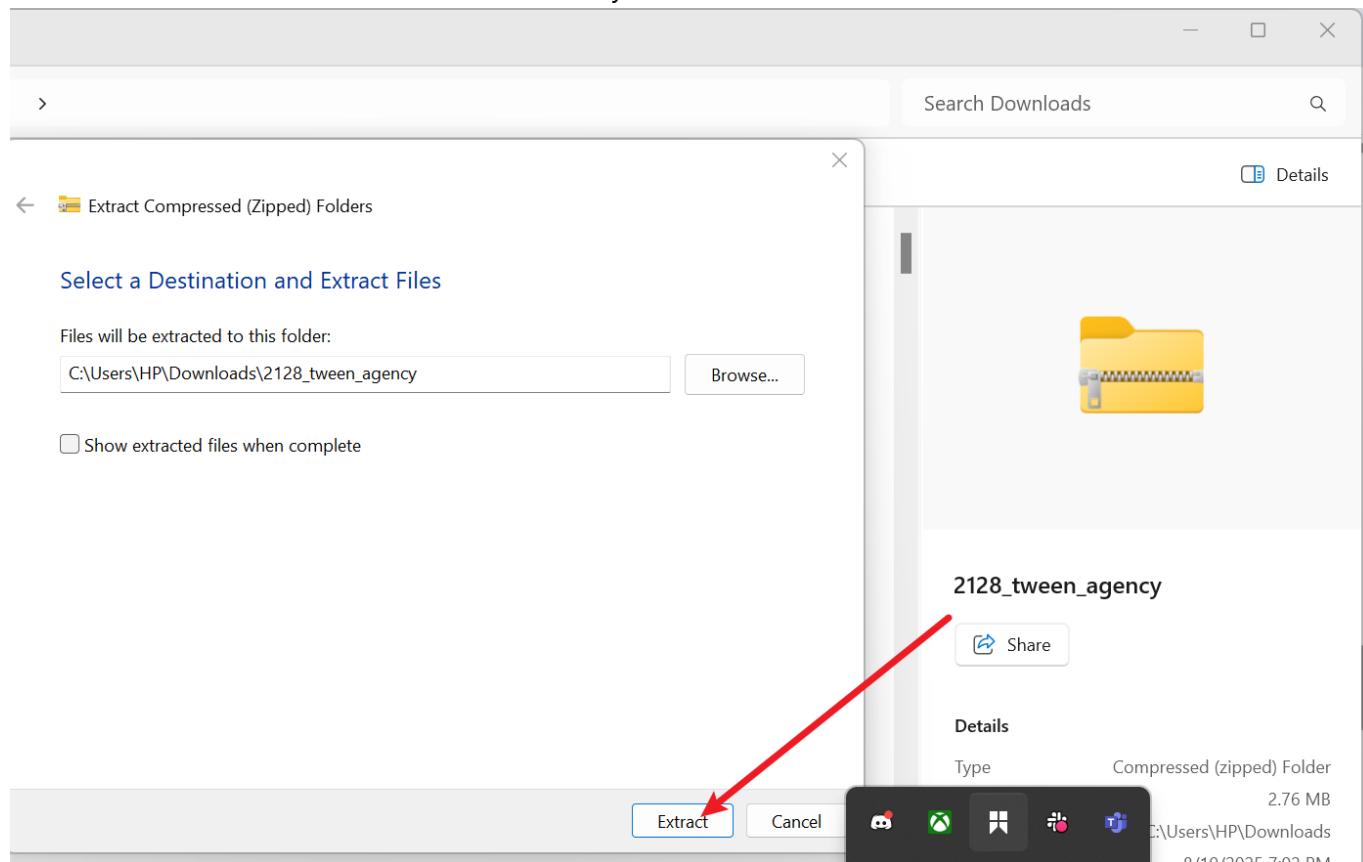
### Step 3: Download the Website Template

Click the download button in order to download a copy of the selected template.



### Step 4: Extract the Downloaded Template

Locate the ZIP file of the downloaded website in your chosen download folder and extract it.



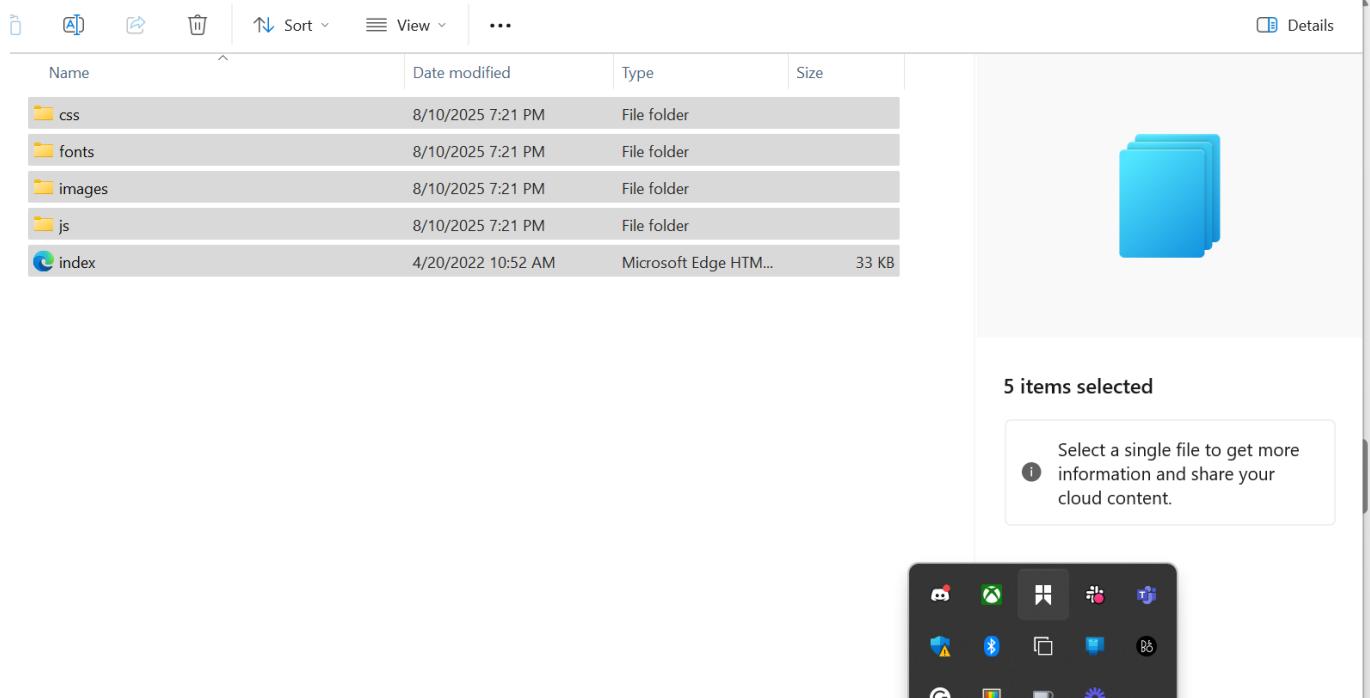
## Step 5: Copy/Cut Template Files and Assets

Open the extracted folder, select all the files in there, and copy or cut them.

Name	Date modified	Type	Size
<div>▼ Today</div>			
css	8/10/2025 7:21 PM	File folder	
fonts	8/10/2025 7:21 PM	File folder	
images	8/10/2025 7:21 PM	File folder	
js	8/10/2025 7:21 PM	File folder	
<div>▼ A long time ago</div>			
index	4/20/2022 10:52 AM	Microsoft Edge HTM...	33 KB

## Step 6: Paste Files into the Project Folder

Navigate to the initialized project folder, `MarketPeak_Ecommerce/` and paste the copied files into it.



## Step 7: Customize Website Name

Open `index.html` in a code editor (VS Code, Sublime Text, etc.) and change the `<title>` tag and any visible branding to "MarketPeak\_Ecommerce".

Go Run ... ← → Untitled (Workspace) ⚙️

Preview README.md README.md index.html ✘

div.container > div.row > div.col-12 > div#nav-tabContent.tab-content > div#nav-intro.tab-pane.fade.show.active > div.row > div.col-lg-5.col-12.m-auto > p

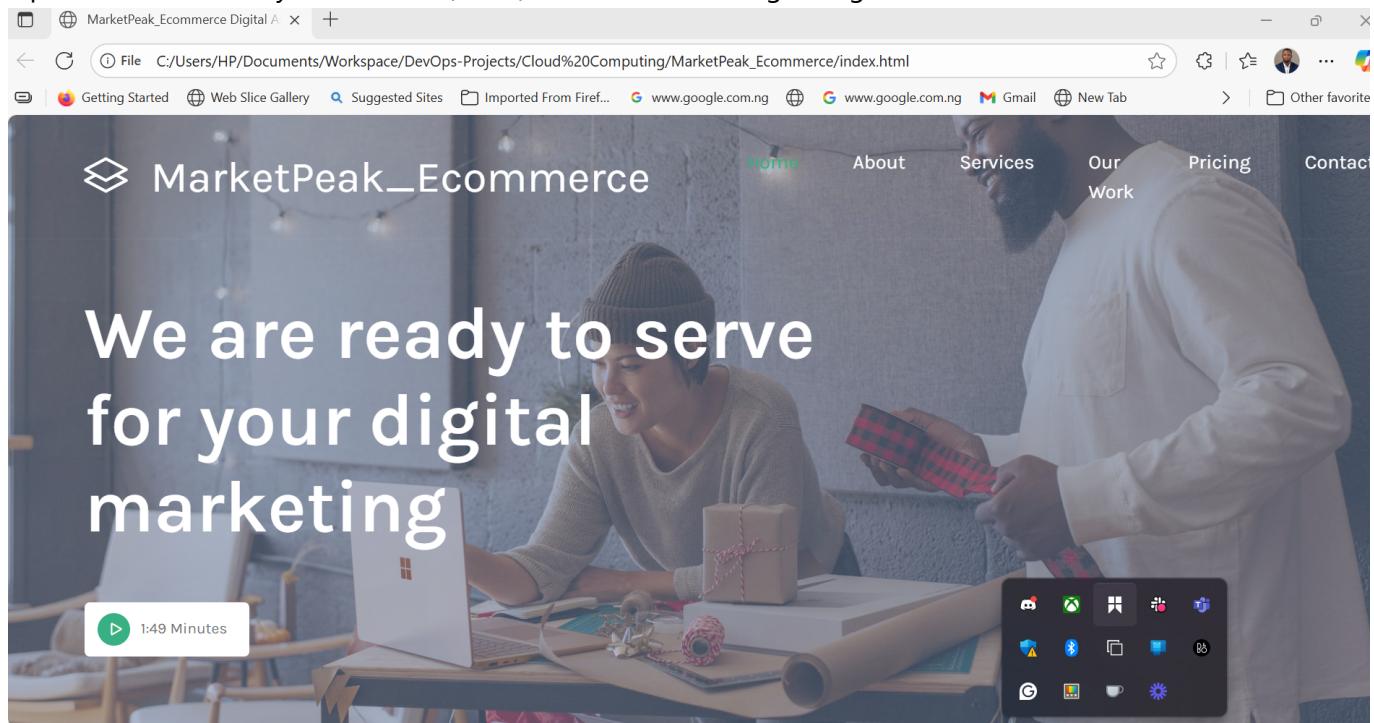
```
2   <html lang="en">
37     <body>
92       <main>
116         <section class="about section-padding" id="section_2">
117           <div class="container">
141             
142             </div>
143
144             <div class="col-lg-5 col-12 m-auto">
145               <h3 class="mb-3">Brand Creation</h3>
146
147               <p>We want you to be happy with our Tween Agency services. Our digital ag
148
149               <p>This is Bootstrap 5 HTML template for your website provided by <a rel=
150
151               <p>Image credits go to <a rel="nofollow" href="https://freepik.com/" targ
152             </div>
153           </div>
154
155           <div class="tab-pane fade" id="nav-profile" role="tabpanel" aria-labelledby="nav-prof
156             <div class="row">
157               <div class="col-12">
```

tween agency Aa ab,\* 2 of 5  
MarketPeak\_Ecommerce AB fb, t

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS bash - MarketPeak\_Ecommerce + × [ ]

## Step 8 — Preview site locally after customization

Open `index.html` in your browser (file://) to confirm branding changes.



## Step 9 — Stage the website files for Git

Initialize the project folder and add all project files to Git staging area.

- **Command:**

```
git add .
```

`git status` shows files in "Changes to be committed".

```
HP@DESKTOP-19M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce
$ git init
Initialized empty Git repository in C:/Users/HP/Documents/workspace/MarketPeak_Ecommerce/.git/
HP@DESKTOP-19M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ git add .
warning: in the working copy of 'css/bootstrap-icons.css', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'css/bootstrap.min.css', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'css/magnific-popup.css', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/bootstrap.min.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/click-scroll.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/custom.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/jquery.backstretch.min.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/jquery.magnific-popup.min.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/jquery.min.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/magnific-popup-options.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'js/popper.js', LF will be replaced by CRLF the next time Git touches it
```

## Step 10 — Set git global configuration (name & email)

Configure Git identity so commits are properly attributed.

- **Commands:**

```
git config --global user.name "Osunsola Oluwaseun"
git config --global user.email "oluwaseun.beicks@gmail.com"
```

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ git config --global user.name "oluwaseun Osunsola"
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ git config --global user.email "oluwaseun.beicks@gmail.com"
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ 
```



## Step 11 — Commit changes with descriptive message

Create the first (initial) commit with a helpful message.

- **Command:**

```
git commit -m "Initial commit of basic ecommerce structure"
```

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ git commit -m "Initial commit of with basic ecommerce site structure"
[main (root-commit) bbafef2b] Initial commit of with basic ecommerce site structure
 30 files changed, 5740 insertions(+)
 create mode 100644 css/bootstrap-icons.css
 create mode 100644 css/bootstrap.min.css
 create mode 100644 css/magnific-popup.css
 create mode 100644 css/tooplate-tween-agency.css
 create mode 100644 fonts/bootstrap-icons.woff
 create mode 100644 fonts/bootstrap-icons.woff2
 create mode 100644 images/about-working-corporation-became-true.jpg
 create mode 100644 images/maria-stewart-p4tjog_aM-unsplash.jpg
 create mode 100644 images/php-programming-html-coding-cyberspace-concept.jpg
 create mode 100644 images/services/undraw_online_page_re_lhgx.svg
 create mode 100644 images/services/undraw_content_team_sepn.svg
 create mode 100644 images/services/undraw_online_transactions_02ka.svg
 create mode 100644 images/slide/microsoft-edge-Faaz8lkinz-unsplash.jpg
 create mode 100644 images/slide/surface-1x5jnht1p3y-unsplash.jpg
 create mode 100644 images/slide/surface-71_s6RDjpcGc-unsplash.jpg
 create mode 100644 images/webpage-browser-digital-icon-concept.jpg
 create mode 100644 images/work/anthony-espinosa-pvQSM-p_0_c-unsplash.jpg
 create mode 100644 images/work/business-chart-visual-graphics-report-concept.jpg
 create mode 100644 images/work/mos-sukjaroenkraisri-jz8AmDyhig-unsplash.jpg
 create mode 100644 images/work/samantha-gades-1f2pD-wIUUA-unsplash.jpg
 create mode 100644 images/work/tyler-nix-HmVQh_EQJHY-unsplash.jpg
 create mode 100644 index.html
 create mode 100644 js/bootstrap.min.js
 create mode 100644 js/click-scroll.js
 create mode 100644 js/custom.js
 create mode 100644 js/jquery.backstretch.min.js
 create mode 100644 js/jquery.magnific-popup.min.js
 create mode 100644 js/jquery.min.js
 create mode 100644 js/magnific-popup-options.js
 create mode 100644 js/popper.js
```



## Step 12 — Create GitHub remote repository

In GitHub UI create a new repo named **MarketPeak\_Ecommerce** (leave it empty — no README). This way we avoid merge conflicts when pushing an existing local repo.

Create a new repository [Preview](#) [Switch back to classic experience](#)

Repositories contain a project's files and version history. Have a project elsewhere? [Import a repository](#). Required fields are marked with an asterisk (\*).

**1 General**

Owner \* Repository name \*

Oluwaseunoa / MarketPeak\_Ecommerce

MarketPeak\_Ecommerce is available.

Great repository names are short and memorable. How about [didactic-disco](#)?

Description

This is MarketPeak Ecommerce website

36 / 350 characters

## Step 13 — Copy repository link (HTTPS recommended)

In the [Quick setup](#) section, copy the HTTPS clone URL. My own looks like: [https://github.com/your-username/MarketPeak\\_Ecommerce.git](https://github.com/your-username/MarketPeak_Ecommerce.git)

MarketPeak\_Ecommerce Public

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Start coding with Codespaces

Add a README file and start coding in a secure, configurable, and dedicated development environment.

Create a codespace

Add collaborators to this repository

Search for people using their GitHub username or email address.

Invite collaborators

Quick setup — if you've done this kind of thing before

Set up in Desktop or [HTTPS](#) [SSH](#) [https://github.com/Oluwaseunoa/MarketPeak\\_Ecommerce.git](https://github.com/Oluwaseunoa/MarketPeak_Ecommerce.git)

Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#).

## Step 14 — Add remote origin locally

In the local project repository, add the GitHub link copied to your project so that you can make the repository house your project on GitHub.

- **Command:**

```
git remote add origin https://github.com/your-username/MarketPeak_Ecommerce.git
```

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ git remote add origin https://github.com/olwaseunola/MarketPeak_Ecommerce.git

HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$
```

---

## Step 15 — Push main branch to GitHub

- **Commands:**

```
git push -u origin main
```

You will see something like

```
Progress bars and `To https://github.com/.../MarketPeak_Ecommerce.git` then
`branch 'main' set up to track 'origin/main'`.
```

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ git push -u origin main
Enumerating objects: 39, done.
Counting objects: 100% (39/39), done.
Delta compression using up to 8 threads
Compressing objects: 100% (39/39), done.
Writing objects: 100% (39/39), 2.77 MiB | 334.00 KiB/s, done.
Total 39 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/olwaseunola/MarketPeak_Ecommerce.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.

HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$
```

---

## Step 16 — Verify files on GitHub

Open your GitHub repo in a browser to confirm files and commit history are present.

The screenshot shows a GitHub repository page for 'MarketPeak\_Ecommerce'. The repository is public and has 1 commit by Oluwaseunoa. The commit message is 'Initial commit of with basic ecommerce...'. The repository contains files: css, fonts, images, js, and index.html. The README file is present. On the right side, there is an 'About' section with a brief description: 'This is MarketPeak Ecommerce website', activity stats (0 stars, 0 watching, 0 forks), and release information (no releases). A dark sidebar on the right lists various GitHub features like Activity, Star, Watch, Fork, and Code.

## Step 17 — Log in to your AWS Management Console

If you don't have an account, you will have to create one. By gaining access to the AWS Console, we can create resources.

The screenshot shows the AWS Sign In page. It asks for user type, with 'Root user' selected. It also asks for an email address, which is 'username@example.com'. There is a 'Next' button and an 'OR' link for sign up. A large purple banner on the right says 'Buy and deploy leading AI agent solutions in AWS Marketplace'. At the bottom, there is a cookie notice and a dark sidebar with various AWS icons.

## Step 18 — Open EC2 service

Use the console search to locate EC2 and open the EC2 Dashboard.

The screenshot shows the AWS CloudWatch Metrics console. At the top, there's a search bar with 'ec2' and a 'Show more' button. The main area has two sections: 'Services' and 'Features'. Under 'Services', there are three items: 'EC2' (Virtual Servers in the Cloud), 'EC2 Image Builder' (A managed service to automate build, customize and deploy OS images), and 'EC2 Global View' (EC2 Global View provides a global dashboard and search functionality that lets you ...). Under 'Features', there's one item: 'Dashboard' (EC2 feature). A sidebar on the left lists recent services: IAM, EC2, Services, Features, Resources, Documentation, Knowledge articles, Marketplace, Blog posts, Events, and Tutorials. At the bottom, there's a 'Were these results helpful?' section with 'Yes' and 'No' buttons, and a footer with links for CloudShell, Feedback, and Copyright information.

## Step 19 — Launch a new EC2 instance

Click "Launch instance" to start the instance wizard.

The screenshot shows the AWS EC2 home page. The main title is "Amazon Elastic Compute Cloud (EC2)" with the subtitle "Create, manage, and monitor virtual servers in the cloud." Below this, a paragraph describes the service's breadth and depth, mentioning over 600 instance types and various purchase models. A large orange button labeled "Launch instance" is highlighted with a red arrow. To the right, a sidebar lists navigation options like Dashboard, EC2 Global View, Events, Instances (with sub-options for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations), and Images (with sub-options for AMIs). At the bottom, a section titled "Benefits and features" includes the sub-section "EC2 offers ultimate scalability and control". The top of the page includes the AWS logo, a search bar, and account information.

Step 20 — Name your instance MarketPeak Ecommerce Server

Use a clear resource tag for easy identification.

**Name and tags** Info

Name  
MarketPeak\_Ecommerce Server Add additional tags

**Application and OS Images (Amazon Machine Image)** Info

An AMI contains the operating system, application server, and applications for your instance. If you don't see a suitable AMI below, use the search field or choose [Browse more AMIs](#).

Search our full catalog including 1000s of application and OS images

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## Step 21 — Choose Ubuntu Server 24.04 LTS AMI

A current, stable Ubuntu LTS provides security patches and compatibility with Ubuntu packages.

**Amazon Machine Image (AMI)**

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type  
ami-0d1b5a8c13042c939 (64-bit (x86)) / ami-019eeff96c2865995 (64-bit (Arm))  
Virtualization: hvm ENA enabled: true Root device type: ebs

**Description**  
Ubuntu Server 24.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Canonical, Ubuntu, 24.04, amd64 noble image

Architecture	AMI ID	Publish Date	Username
64-bit ...	ami-0d1b5a8c13042c939	2025-06-10	ubuntu

Verified provider

**Summary**

Number of instances Info  
1

**Software Image (AMI)**  
Canonical, Ubuntu, 24.04, amd64... read more  
ami-0d1b5a8c13042c939

**Virtual server type (instance type)**  
t2.micro

**Firewall (security group)**  
New security group

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## Step 22 — Choose instance type (t2.micro for free-tier)

t2.micro is free-tier eligible and sufficient for demo deployments.

**Instance type** [Info](#) | [Get advice](#)

**Instance type**

t2.micro  
Family: t2 1 vCPU 1 GiB Memory Current generation: true  
On-Demand Ubuntu Pro base pricing: 0.0134 USD per Hour  
On-Demand Linux base pricing: 0.0116 USD per Hour  
On-Demand SUSE base pricing: 0.0116 USD per Hour  
On-Demand Windows base pricing: 0.0162 USD per Hour  
On-Demand RHEL base pricing: 0.026 USD per Hour

Free tier eligible

All generations

[Compare instance types](#)

**Additional costs apply for AMIs with pre-installed software**

**Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

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## Step 23 — Create and download an SSH key pair

Create a new key pair, download the `.pem` private key and keep it secure. Save it in a path you will use to SSH (e.g., `~/ssh/marketpeak.pem`).

[us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#LaunchInstances:](#)

aws Search [Alt+S] United States (Ohio) Account ID: 5366-9723-1935

EC2 Instances Launch an instance

**Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

**Key pair name - required**

MarketPeak\_Ecommerce\_key [Create new key pair](#)

**Summary**

Number of instances [Info](#)

1

Software Image (AMI)  
Canonical, Ubuntu, 24.04, amd6... [read more](#)

## Step 24 — Configure security group: allow SSH, HTTP, HTTPS

Add inbound rules for (allow for all):

- SSH (TCP 22) — Source: your IP (or 0.0.0.0/0 for testing, not recommended)
- HTTP (TCP 80) — Source: 0.0.0.0/0
- HTTPS (TCP 443) — Source: 0.0.0.0/0

[EC2 Instances Launch an instance](#)

Enable Additional charges apply when outside of free tier allowance

**Firewall (security groups)** [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group  Select existing security group

We'll create a new security group called 'launch-wizard-4' with the following rules:

Allow SSH traffic from Anywhere 0.0.0.0/0  
Helps you connect to your instance

Allow HTTPS traffic from the internet To set up an endpoint, for example when creating a web server

Allow HTTP traffic from the internet To set up an endpoint, for example when creating a web server

**Summary**

Number of instances [Info](#)

1

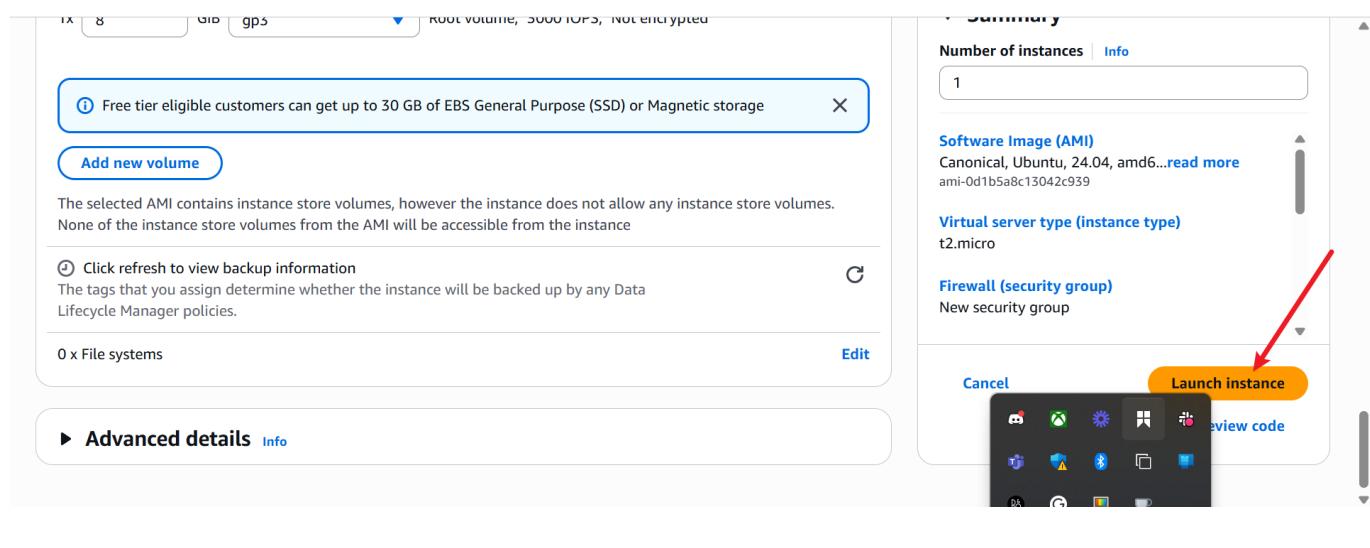
Software Image (AMI)  
Canonical, Ubuntu, 24.04, amd6... [read more](#)

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
New security group

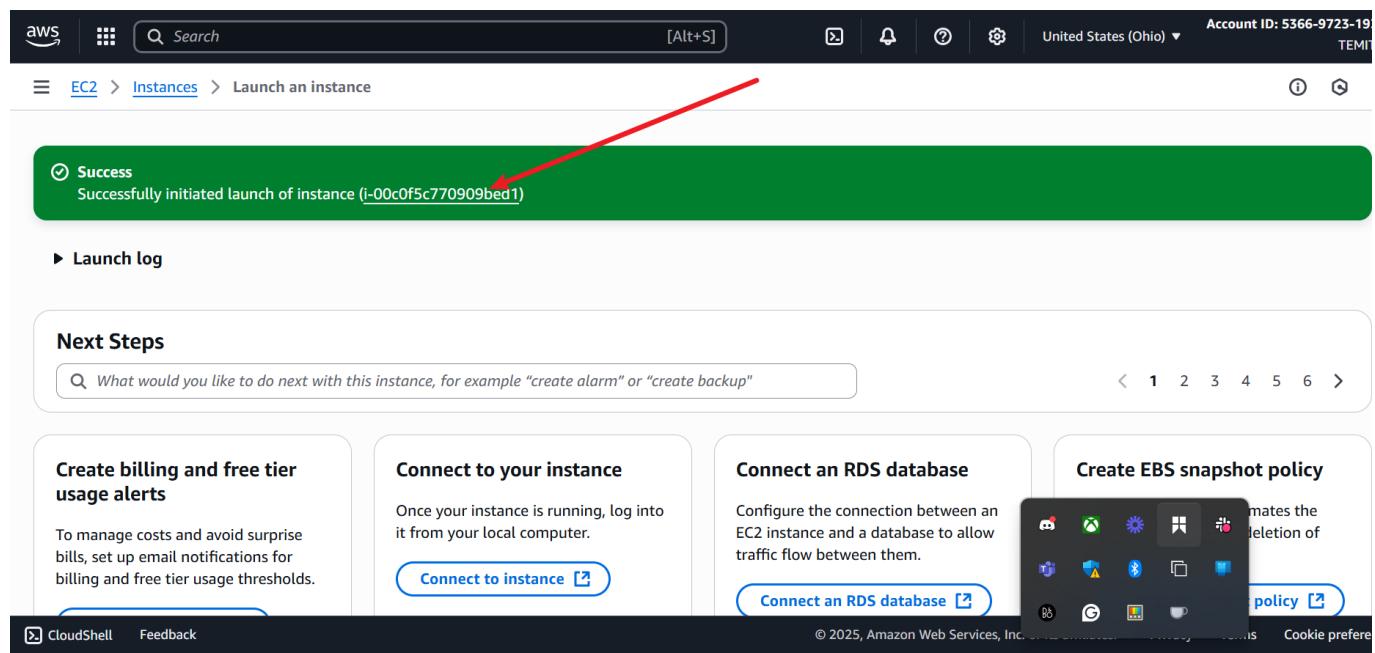
## Step 25 — Launch the EC2 instance

Review settings and click Launch. Instance enters **pending** then **running** state.



## Step 26 — Click the instance ID in the success message

Use the link in the launch-success banner to open the instance details page.



## Step 27 — Note the public IPv4 address & click Connect

Copy the public IP (or public DNS) for SSH access.

Instance summary for i-00c0f5c770909bed1 (MarketPeak\_Ecommerce Server) [Info](#)

[Connect](#) [Instance state](#) [Actions](#)

Updated 3 minutes ago

Instance ID <a href="#">i-00c0f5c770909bed1</a>	Public IPv4 address <a href="#">13.58.226.0</a>   <a href="#">open address</a>	Private IPv4 addresses <a href="#">172.31.25.100</a>
IPv6 address -	Instance state <a href="#">Running</a>	Public DNS <a href="#">ec2-13-58-226-0.us-east-2.compute.amazonaws.com</a>   <a href="#">open address</a>
Hostname type IP name: ip-172-31-25-100.us-east-2.compute.internal	Private IP DNS name (IPv4 only) <a href="#">ip-172-31-25-100.us-east-2.compute.internal</a>	Instance type t2.micro
Answer private resource DNS name IPv4 (A)		

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## Step 28 — Copy the example SSH command from the Connect page

- **Example provided by AWS:**

```
ssh -i "your-key-pair.pem" ubuntu@<PUBLIC_IP>
```

us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#ConnectToInstance:instanceId=i-00c0f5c770909bed1

[CloudShell](#) [Feedback](#)

Connect [Info](#)

Connect to an instance using the browser-based client.

EC2 Instance Connect [Session Manager](#) [SSH client](#) [EC2 serial console](#)

Instance ID  
[i-00c0f5c770909bed1](#) (MarketPeak\_Ecommerce Server)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is MarketPeak\_Ecommerce\_key.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
[chmod 400 "MarketPeak\\_Ecommerce\\_key.pem"](#)
4. Connect to your instance using its Public DNS:  
[ec2-13-58-226-0.us-east-2.compute.amazonaws.com](#)

[Command copied](#)

[ssh -i "MarketPeak\\_Ecommerce\\_key.pem" ubuntu@ec2-13-58-226-0.us-east-2.compute.amazonaws.com](#)

[Note: In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default user.](#)

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## Step 29 — Locate downloaded .pem on your machine

Confirm the path where the key was saved (Downloads, ~/ssh, etc.).

```
HP@DESKTOP-I9M74R1 MINGW64 ~
$ cd Downloads/

HP@DESKTOP-I9M74R1 MINGW64 ~/Downloads
$ ls MarketPeak_Ecommerce_key.pem
MarketPeak_Ecommerce_key.pem

HP@DESKTOP-I9M74R1 MINGW64 ~/Downloads
$
```

---

## Step 30 — Set proper permissions on the key

- **Command:**

```
chmod 400 /path/to/your-key-pair.pem
```

SSH requires private key permissions to be restricted.

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Downloads
$ chmod 400 MarketPeak_Ecommerce_key.pem
```

---

## Step 31 — Connect to the instance via SSH

- **Command (example):**

```
ssh -i "~/Downloads/your-key-pair.pem" ubuntu@<PUBLIC_IP>
```

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Downloads
$ ssh -i "MarketPeak_Ecommerce_key.pem" ubuntu@ec2-13-58-226-0.us-east-2.compute.amazonaws.com
```

---

## Step 32 — Accept SSH fingerprint (type **yes**)

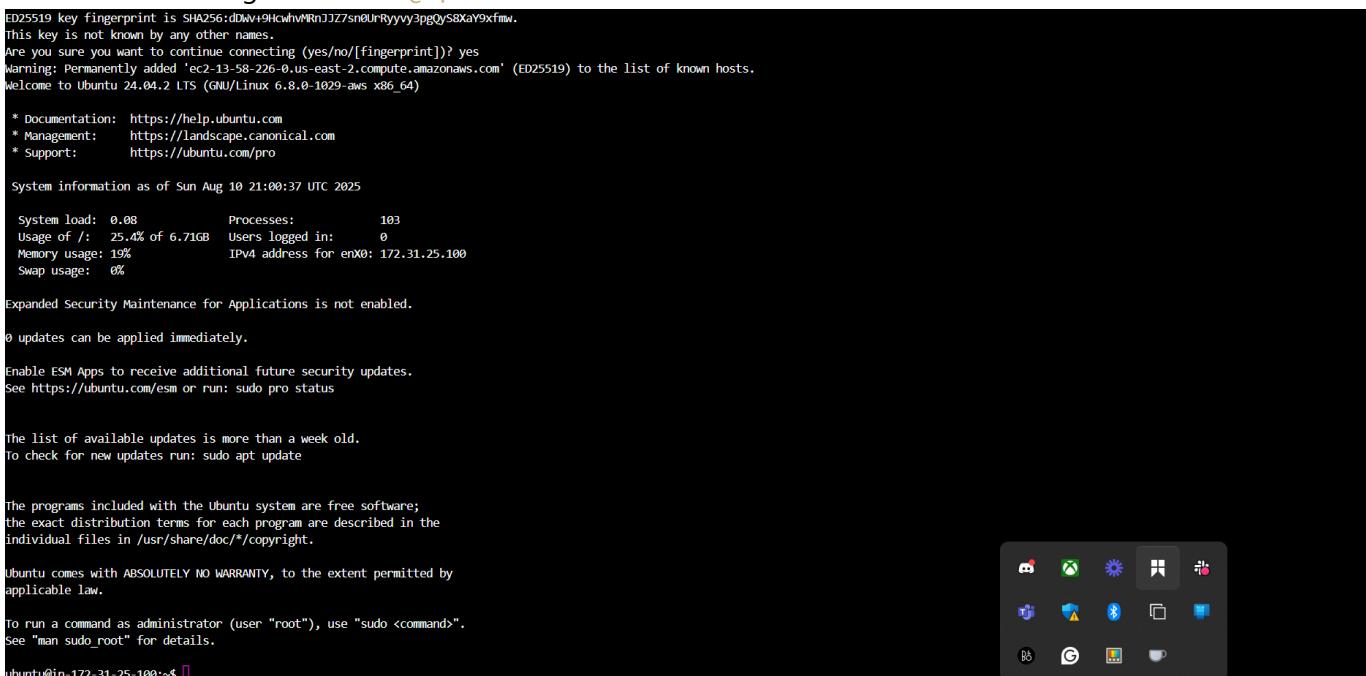
First-time connection will show the host fingerprint; type **yes** to store it.



```
HN@DESKTOP-19M4R1 MINGW64 ~/Downloads
$ ssh -i "MarketPeak_Ecommerce_key.pem" ubuntu@ec2-13-58-226-0.us-east-2.compute.amazonaws.com
The authenticity of host 'ec2-13-58-226-0.us-east-2.compute.amazonaws.com (13.58.226.0)' can't be established.
ED25519 key fingerprint is SHA256:d0Wv+9HcwhvMRnJJZ7sn0UrRyyy3pgQyS8xaY9xfmw.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
```

### Step 33 — Confirm you are connected to the EC2 instance

You'll see something like `ubuntu@ip-...:~$`



```
ED25519 key fingerprint is SHA256:d0Wv+9HcwhvMRnJJZ7sn0UrRyyy3pgQyS8xaY9xfmw.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-13-58-226-0.us-east-2.compute.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-1029-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/pro

System information as of Sun Aug 10 21:00:37 UTC 2025

 System load: 0.08      Processes:          103
 Usage of /: 25.4% of 6.71GB  Users logged in:    0
 Memory usage: 19%           IPv4 address for enx0: 172.31.25.100
 Swap usage:  0%
 
Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/''copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-25-100:~$
```

You can also confirm by running `uname -a` or `lsb_release -a` to confirm Ubuntu OS.

### Step 34 — On GitHub, open repo and click "Code" to get clone options

Navigate to your repo and reveal HTTPS/SSH options.

The screenshot shows the GitHub repository page for 'MarketPeak\_Ecommerce'. The 'Code' dropdown menu is highlighted with a red arrow. The repository details on the left include a commit from 'Oluwaseunoa' fixing name customization. The right sidebar displays repository statistics: 0 stars, 0 forks, 0 releases, and a GitHub icon grid.

## Step 35 — Choose HTTPS (or SSH if configured)

Going for HTTPS because it requires no additional server-side key configuration; SSH requires adding public key to GitHub account.

The screenshot shows the GitHub repository page for 'MarketPeak\_Ecommerce'. The 'Clone' dropdown menu is open, with the 'HTTPS' tab selected and highlighted with a red arrow. The URL 'git@github.com:Oluwaseunoa/MarketPeak\_Ecommerce' is shown below. The right sidebar displays repository statistics: 0 stars, 0 forks, and a GitHub icon grid.

## Step 36 — Copy the HTTPS clone URL

Mine is [https://github.com/Oluwaseunoa/MarketPeak\\_Ecommerce.git](https://github.com/Oluwaseunoa/MarketPeak_Ecommerce.git)

The screenshot shows a GitHub repository page for 'MarketPeak\_Ecommerce'. The 'Code' tab is selected. A modal window titled 'Clone' is open, showing three cloning options: HTTPS (selected), SSH, and GitHub CLI. The HTTPS URL is displayed as a text input field: `https://github.com/Oluwaseunoa/MarketPeak_Ecommerce`. To the right of the URL is a small square icon with a copy symbol, which is highlighted with a red arrow. The background shows the repository's main interface with file navigation on the left and various repository stats on the right.

## Step 37 — Clone the repository on the EC2 instance and confirm the download

- **Commands:**

```
git clone https://github.com/Oluwaseunoa/MarketPeak_Ecommerce.git  
ls
```

The repo appears as a folder in your home directory.

The terminal window shows the command `git clone https://github.com/Oluwaseunoa/MarketPeak_Ecommerce.git` being run. The output indicates the repository is cloned into a folder named 'MarketPeak\_Ecommerce'. Subsequent `ls` command shows the contents of this folder, including files like index.html, js, css, fonts, and images.

```
ubuntu@ip-172-31-25-100:~$ git clone https://github.com/Oluwaseunoa/MarketPeak_Ecommerce.git  
Cloning into 'MarketPeak_Ecommerce'...  
remote: Enumerating objects: 42, done.  
remote: Counting objects: 100% (42/42), done.  
remote: Compressing objects: 100% (40/40), done.  
remote: Total 42 (delta 2), reused 42 (delta 2), pack-reused 0 (from 0)  
Receiving objects: 100% (42/42), 2.77 MiB | 2.08 MiB/s, done.  
Resolving deltas: 100% (2/2), done.  
ubuntu@ip-172-31-25-100:~$ ls MarketPeak_Ecommerce/  
css fonts images index.html js  
ubuntu@ip-172-31-25-100:~$
```

## Step 38 — Update and upgrade Ubuntu packages

- **Commands:**

```
sudo apt update && sudo apt upgrade -y
```

This keeps packages up-to-date for security and compatibility.

```
ubuntu@ip-172-31-25-100:~$ sudo apt update && sudo apt upgrade -y
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1315 kB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [264 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [163 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [1650 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [361 kB]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7060 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [30.7 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 kB]
Get:17 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.3 kB]
Get:19 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 kB]
Get:20 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 kB]
Fetched 4622 kB in 2s (2968 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
105 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
```

## Step 39 — Install Apache2 web server

- **Command:**

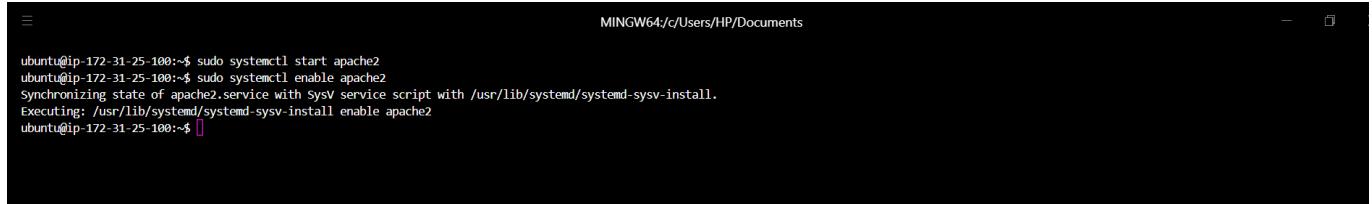
```
sudo apt install apache2 -y
```

```
ubuntu@ip-172-31-25-100:~$ sudo apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.58-1ubuntu8.7).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ubuntu@ip-172-31-25-100:~$
```

## Step 40 — Start and enable Apache2

- **Commands:**

```
sudo systemctl start apache2
sudo systemctl enable apache2
```



```
ubuntu@ip-172-31-25-100:~$ sudo systemctl start apache2
ubuntu@ip-172-31-25-100:~$ sudo systemctl enable apache2
Synchronizing state of apache2.service with sysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
ubuntu@ip-172-31-25-100:~$
```

---

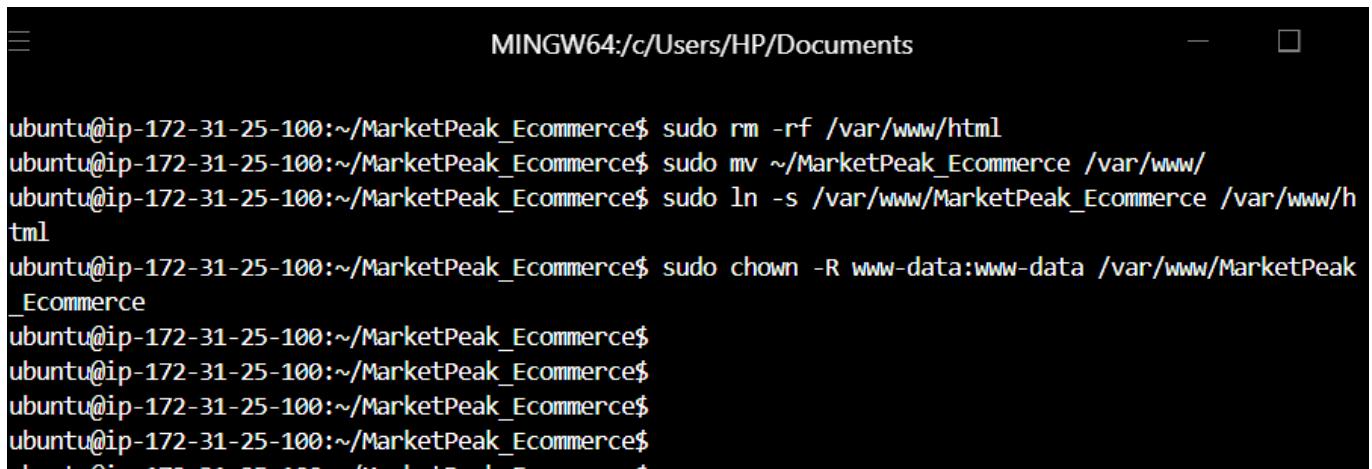
## Step 41 — Prepare web directory: move or link repo to [/var/www/html](#)

- **Options:**
  - **Copy (recommended for static sites):**

```
sudo rm -rf /var/www/html/*
sudo cp -r ~/MarketPeak_Ecommerce/* /var/www/html/
```

- **Alternative — symlink (easier for development):**

```
sudo rm -rf /var/www/html
sudo mv ~/MarketPeak_Ecommerce /var/www/
sudo ln -s /var/www/MarketPeak_Ecommerce /var/www/html
sudo chown -R www-data:www-data /var/www/MarketPeak_Ecommerce
```



```
ubuntu@ip-172-31-25-100:~/MarketPeak_Ecommerce$ sudo rm -rf /var/www/html
ubuntu@ip-172-31-25-100:~/MarketPeak_Ecommerce$ sudo mv ~/MarketPeak_Ecommerce /var/www/
ubuntu@ip-172-31-25-100:~/MarketPeak_Ecommerce$ sudo ln -s /var/www/MarketPeak_Ecommerce /var/www/html
ubuntu@ip-172-31-25-100:~/MarketPeak_Ecommerce$ sudo chown -R www-data:www-data /var/www/MarketPeak_Ecommerce
ubuntu@ip-172-31-25-100:~/MarketPeak_Ecommerce$
```

---

## Step 42 — Reload Apache to pick up changes

Reload picks up file changes without restarting the server.

- **Command:**

```
sudo systemctl reload apache2
```

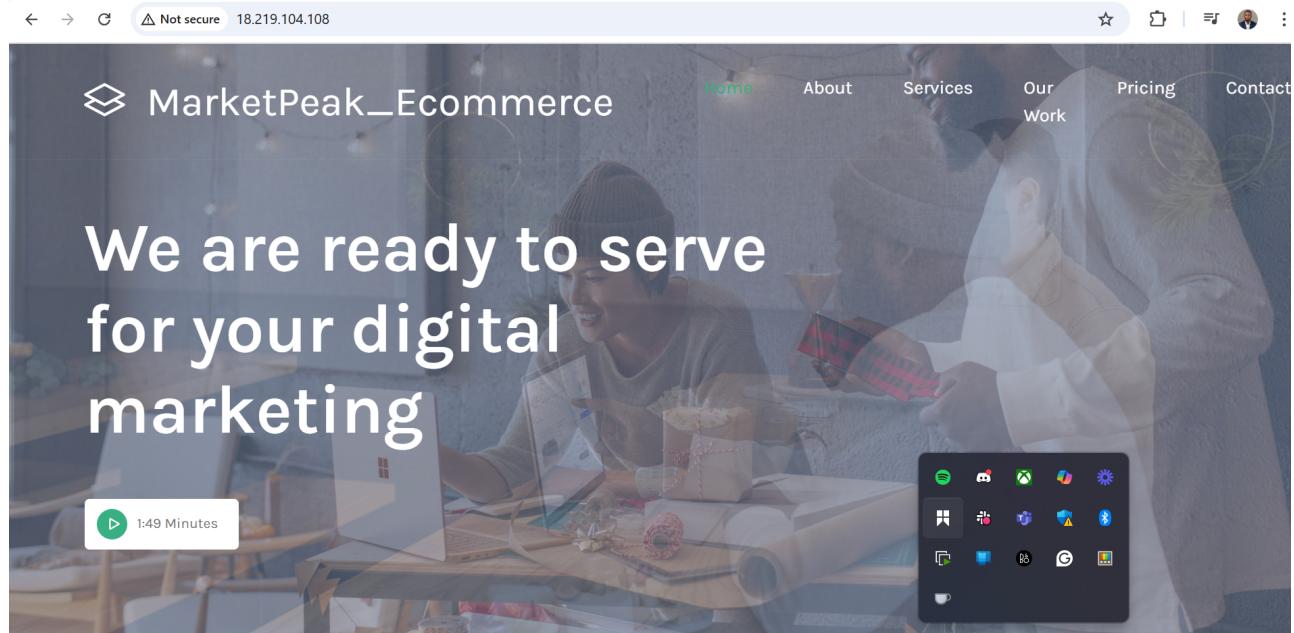


```
ubuntu@ip-172-31-25-100:~$ sudo systemctl reload apache2
ubuntu@ip-172-31-25-100:~$ [ ]
```

---

## Step 43 — Open the site in a browser using the public IP

- **URL:** [http://<PUBLIC\\_IP>](http://<PUBLIC_IP>) (or the server domain if you configured DNS) The MarketPeak site should load and show the customized branding.



---

(Steps 44–58 — development workflow, PRs, merge & deploy)

The document continues with the development branch workflow, making a change on a **development** branch, pushing, opening a pull request, merging into **main**, pulling changes on the server, and verifying updates live on the site. Steps 44–58 include creating a **development** branch, changing the site title to **MarketPeak\_4.0**, staging, committing, pushing, creating PR, merging, pulling on server, reloading Apache, and confirming the change in the browser. For completeness these steps are fully documented below (with commands and checks):

### Step 44 — Create development branch for changes

This isolate feature work from **main**.

- **Commands:**

```
git checkout -b development
```

```
$ git branch development
● HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (main)
$ git checkout development
Switched to branch 'development'
● HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (development)
```

## Step 45 — Make a change (example: update site title)

Edit `index.html`. I am changing the website <title> from MarketPeak\_Ecommerce to `MarketPeak_4.0`.

- **Command (editor):** code `index.html` then save changes.

```
<a href="index.html" class="navbar-brand">
|   <i class="bi-layers"></i> MarketPeak_4.0
|</a>
```

## Step 46 — Stage the change

- **Command:**

```
git add .
```

- **Verification:** `git status` shows staged files.

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (development)
$ git add .
```

## Step 47 — Commit change with a clear message

- **Command:**

```
git commit -m "Changed the site title from MarketPeak_Ecommerce to
MarketPeak_4.0"
```

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (development)
$ git commit -m "Changed the site title from MarketPeak_Ecommerce to MarketPeak_4.0"
[development 261084f] Changed the site title from MarketPeak_Ecommerce to MarketPeak_4.0
 1 file changed, 1 insertion(+), 1 deletion(-)

HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (development)
```

## Step 48 — Push development branch to origin

- **Command:**

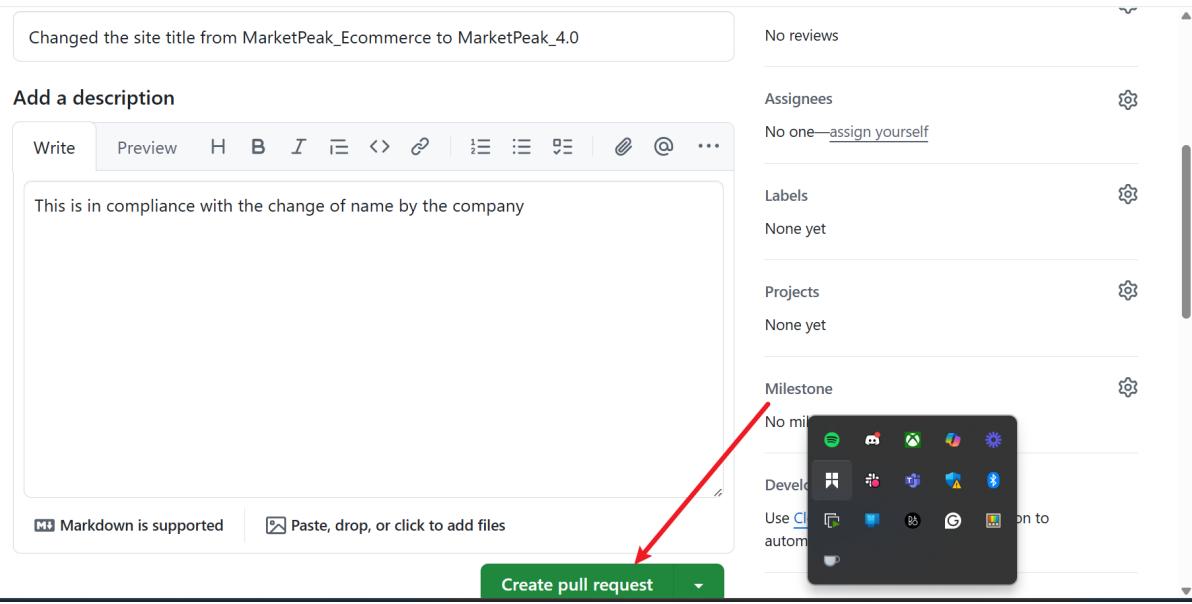
```
git push origin development
```

```
HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak_Ecommerce (development)
$ git push origin development
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 372 bytes | 372.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'development' on GitHub by visiting:
remote:   https://github.com/Oluwaseunoa/MarketPeak_Ecommerce/pull/new/development
remote:
To https://github.com/Oluwaseunoa/MarketPeak_Ecommerce.git
 * [new branch] development -> development
development ⌂ ② 0 △ 0
```

## Step 49 — Create a Pull Request (Development → Main) on GitHub

In GitHub UI click "Compare & pull request" and open a PR with a descriptive title and summary.

- **Checklists:** Ensure diffs only include intended changes.



## Step 50 — Review changes and run checks before merging

Review the diff, run any CI checks (if configured), and confirm changes are safe to merge.

The screenshot shows a GitHub pull request interface. At the top, it says "Changed the site title from MarketPeak\_Ecommerce to MarketPeak\_4.0 #1". Below this, it indicates "Oluwaseunoa wants to merge 1 commit into `main` from `development`". The main area displays a diff for the file `index.html`. The diff shows the following change:

```
@@ -40,7 +40,7 @@
 40      40          <div class="container">
 41      41              <a href="index.html" class="navbar-brand">
 42      42                  <i class="bi-layers"></i> MarketPeak_Ecommerce
 43      -                      <i class="bi-layers"></i> MarketPeak_4.0
 43      +                      <i class="bi-layers"></i> MarketPeak_4.0
 44      44          </a>
 45      45
 46      46          <a href="#" class="custom-btn btn btn-lg d-lg-none ms-auto me-4">
```

A context menu is open on the right side of the screen, showing various options like Spotify, Microsoft Edge, and File Explorer.

## Step 51 — Merge the Pull Request to `main`

Use GitHub UI to "Merge pull request" and optionally delete the development branch.

The screenshot shows the "Merge pull request" dialog. It includes fields for "Commit message" (containing "Merge pull request #1 from Oluwaseunoa/development") and "Extended description" (containing "Changed the site title from MarketPeak\_Ecommerce to MarketPeak\_4.0"). Below these, there's a "Commit email" field with the value "oluwaseun.beicks@gmail.com" and a "Confirm merge" button (which has a red arrow pointing to it) and a "Cancel" button. To the right, a sidebar shows project and milestone details, and at the bottom, a notification summary for the pull request author.

## Step 52 — Confirm successful merge

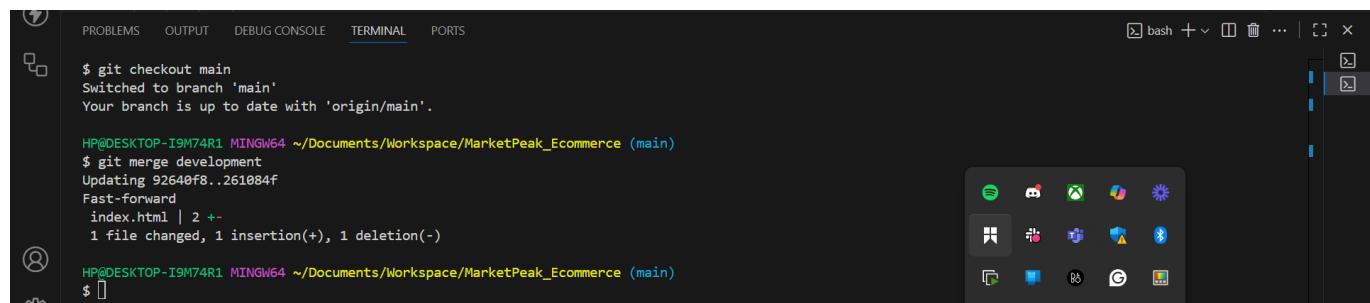
- **Verification:** GitHub displays a successful merge banner; `main` now contains your changes.

Step 53 — Pull the updated `main` on any environment that serves production

This will keep production files in sync with repo.

- **Commands (on server or local):**

```
git checkout main  
git merge development
```



Step 54 — Push main (if you merged locally)

- **Command (if merging locally):**

```
git push origin main
```

This will say 'Everything up-to-date'

A screenshot of a terminal window titled 'MINGW64 ~/Documents/Workspace/MarketPeak\_Ecommerce (main)'. It shows a commit message: 'git push origin main' followed by 'Everything up-to-date'. Below the commit, there's another line starting with 'HP@DESKTOP-I9M74R1 MINGW64 ~/Documents/Workspace/MarketPeak\_Ecommerce (main)'. The bottom of the terminal shows a file path 'main' and some status icons. The top right corner of the terminal has a toolbar with various icons.

---

## Step 55 — Update production server files (if using clone in `/var/www`)

- **If you copied files to `/var/www/html` earlier:** re-copy or pull changes into that directory. Example using a git-backed setup:

```
cd /var/www/html  
sudo git pull origin main
```

- **Alternative (if using symlink):** Changes in the home clone are visible immediately.
  - **Check:** `cat /var/www/html/index.html | grep "MarketPeak_4.0"` to confirm the updated title exists.
- 

## Step 56 — Fix permissions & ownership for Apache

- **Commands:**

```
sudo chown -R www-data:www-data /var/www/html  
sudo find /var/www/html -type d -exec chmod 755 {} \;  
sudo find /var/www/html -type f -exec chmod 644 {} \;
```

Ensures Apache can read files and provides secure permissions.

---

## Step 57 — Reload Apache to apply updates

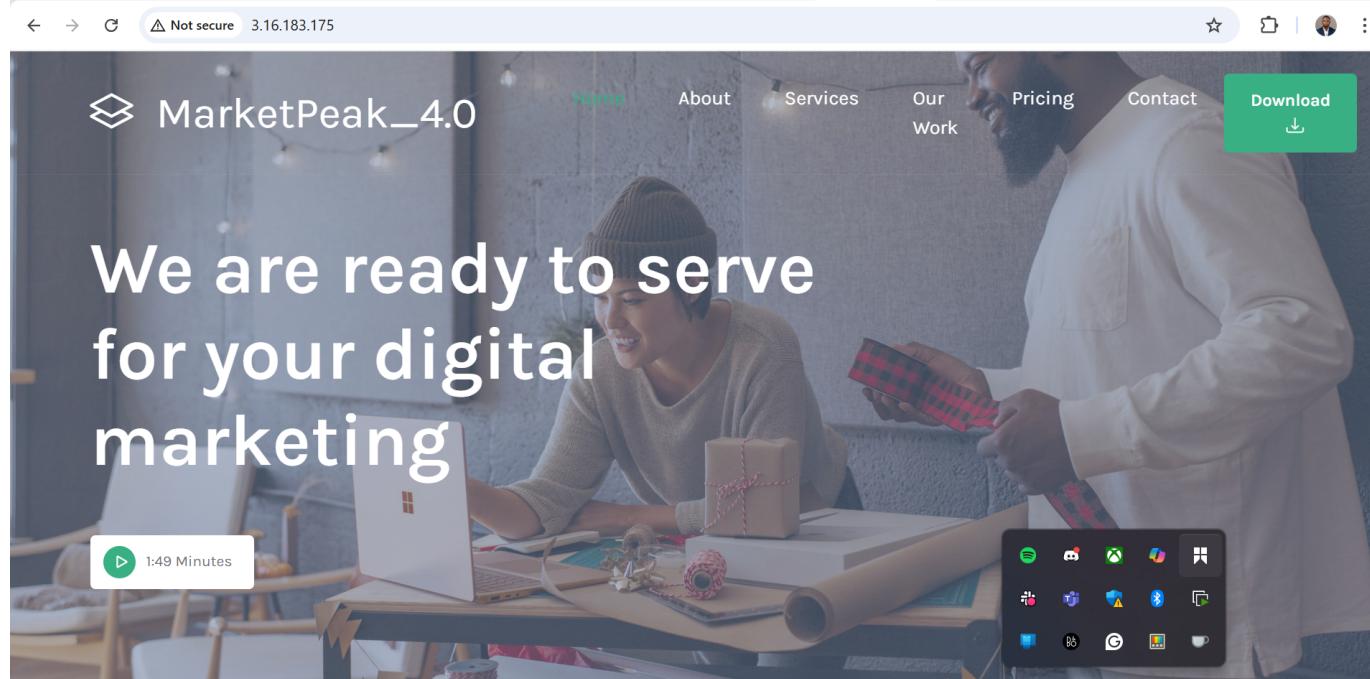
- **Command:**

```
sudo systemctl reload apache2
```

A screenshot of a terminal window titled 'MINGW64:/c/Users/HP/Documents'. It shows the command 'sudo systemctl reload apache2' being run. The terminal is black with white text, and the command is highlighted in blue. The prompt is 'ubuntu@ip-172-31-25-100:~/MarketPeak\_Ecommerce\$'.

## Step 58 — Verify changes on live website

**Action:** Open [http://<PUBLIC\\_IP>](http://<PUBLIC_IP>) in a browser and confirm the **MarketPeak\_4.0** title (or other changes) appears.



## Troubleshooting (common issues & fixes)

- **fatal: detected dubious ownership in repository** — run `git config --global --add safe.directory /path/to/repo` on the server if you trust the repo owner. See screenshot examples in other tasks.
- **Permission denied (publickey)** — ensure you used the correct user (`ubuntu` for Ubuntu AMIs), correct `.pem` and `chmod 400` was applied.
- **403 Forbidden on Apache** — missing `index.html` in `/var/www/html`, wrong permissions, or Apache `Require all denied` in config. Check `/var/log/apache2/error.log`.

## Deliverables & Submission

- `README.md` (this document) committed to GitHub.
- `img/` folder containing the 58 screenshots.
- Live site URL: [http://<EC2\\_PUBLIC\\_IP>](http://<EC2_PUBLIC_IP>) (replace with your IP or domain).