Real Estate Website with Appointment Booking and Server Monitoring

Student Name: Thiseni Perera

Student Number: 35408344

Domain Name:

https://prabashrealestates.store

IP Address Server: 52.63.156.214

GitHub Repo:

Video Link: [TO BE ADDED]

Project Overview

This project involved deploying a real estate website on a cloud-based virtual server. The site allows clients to view properties and book appointments online. Key technologies used include:

- Ubuntu Linux VM
- Apache web server
- WordPress + Elementor
- Simply Schedule Appointments plugin
- Custom Bash scripts for server status and visitor tracking
- Let's Encrypt for HTTPS

1.Server Setup

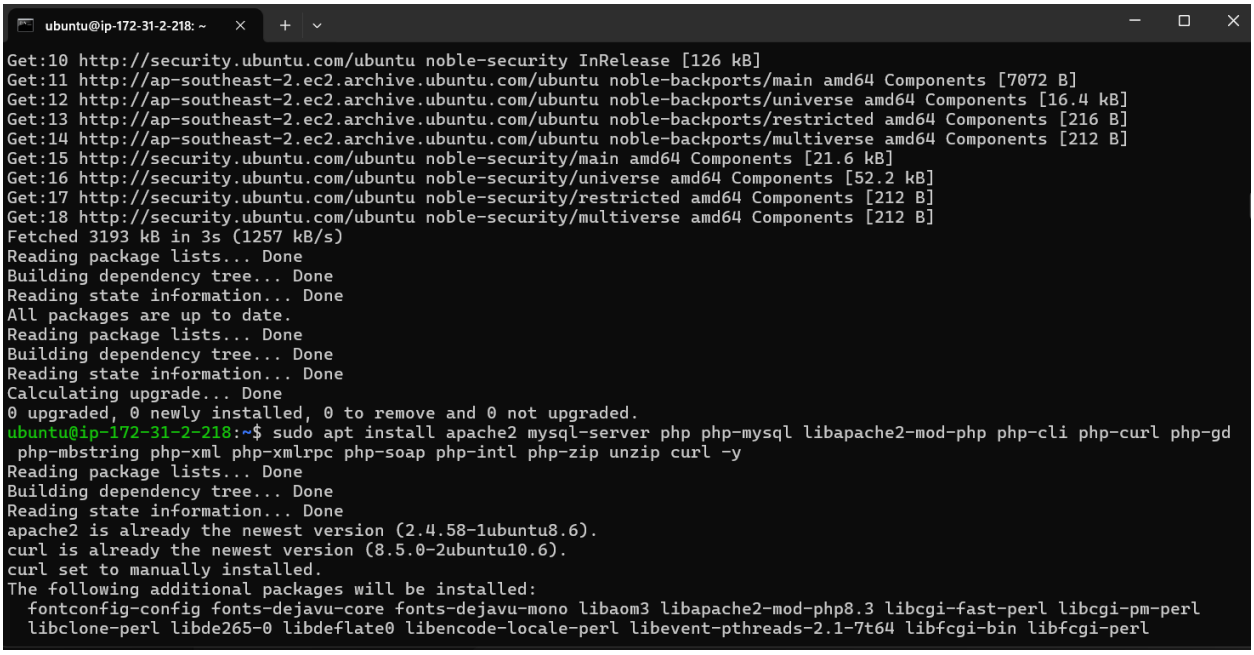
Cloud Provider: AWS

OS: Ubuntu Server 20.04

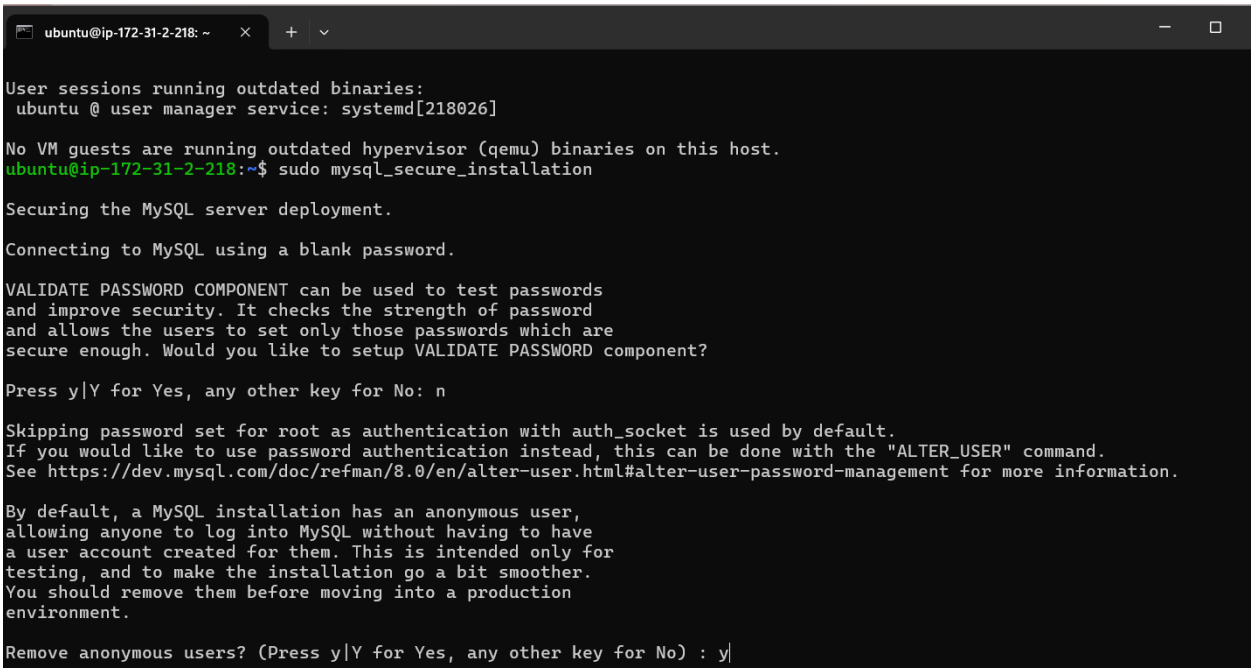
Web Server: Apache2

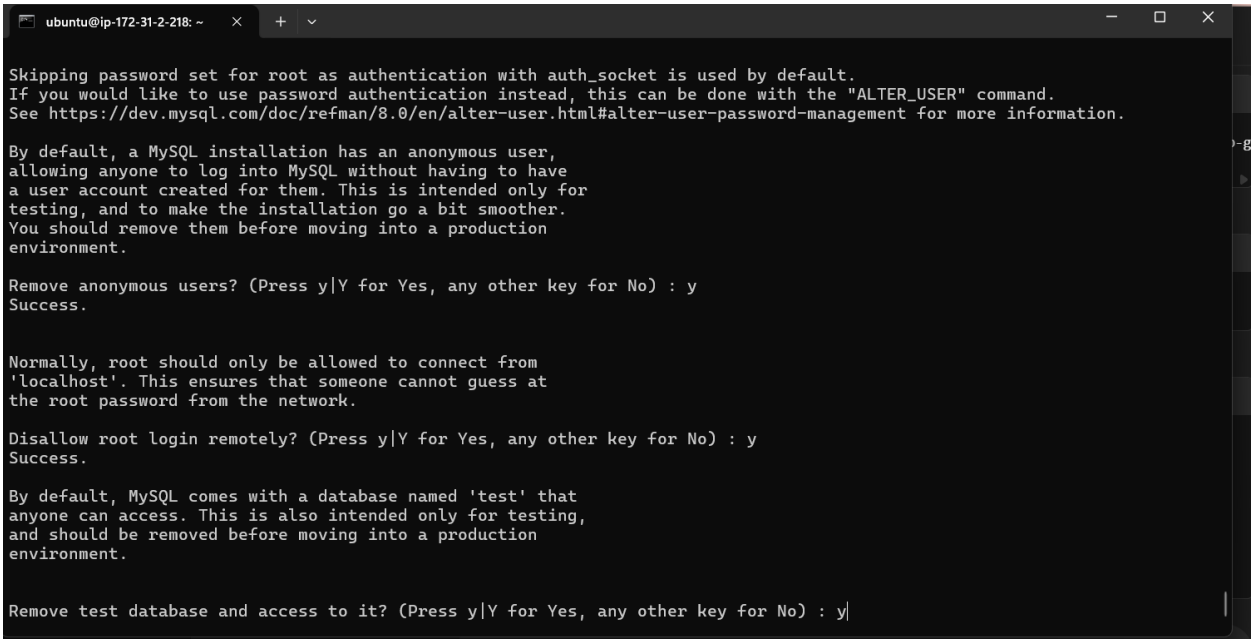
Installation Steps

```bash

sudo apt update

sudo apt install apache2

sudo apt install apache2 php mysql-server php-mysql
```



Give all the relevant answers to set up mysql.


ubuntu@ip-172-31-2-218: ~
User sessions running outdated binaries:
ubuntu @ user manager service: systemd[218026]
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-2-218:~$ sudo mysql_secure_installation
Securing the MySQL server deployment.
Connecting to MySQL using a blank password.
VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?
Press y|Y for Yes, any other key for No: n
Skipping password set for root as authentication with auth_socket is used by default.
If you would like to use password authentication instead, this can be done with the "ALTER_USER" command.
See https://dev.mysql.com/doc/refman/8.0/en/alter-user.html#alter-user-password-management for more information.
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.
Remove anonymous users? (Press y|Y for Yes, any other key for No) : y


ubuntu@ip-172-31-2-218: ~
Skipping password set for root as authentication with auth_socket is used by default.
If you would like to use password authentication instead, this can be done with the "ALTER_USER" command.
See https://dev.mysql.com/doc/refman/8.0/en/alter-user.html#alter-user-password-management for more information.
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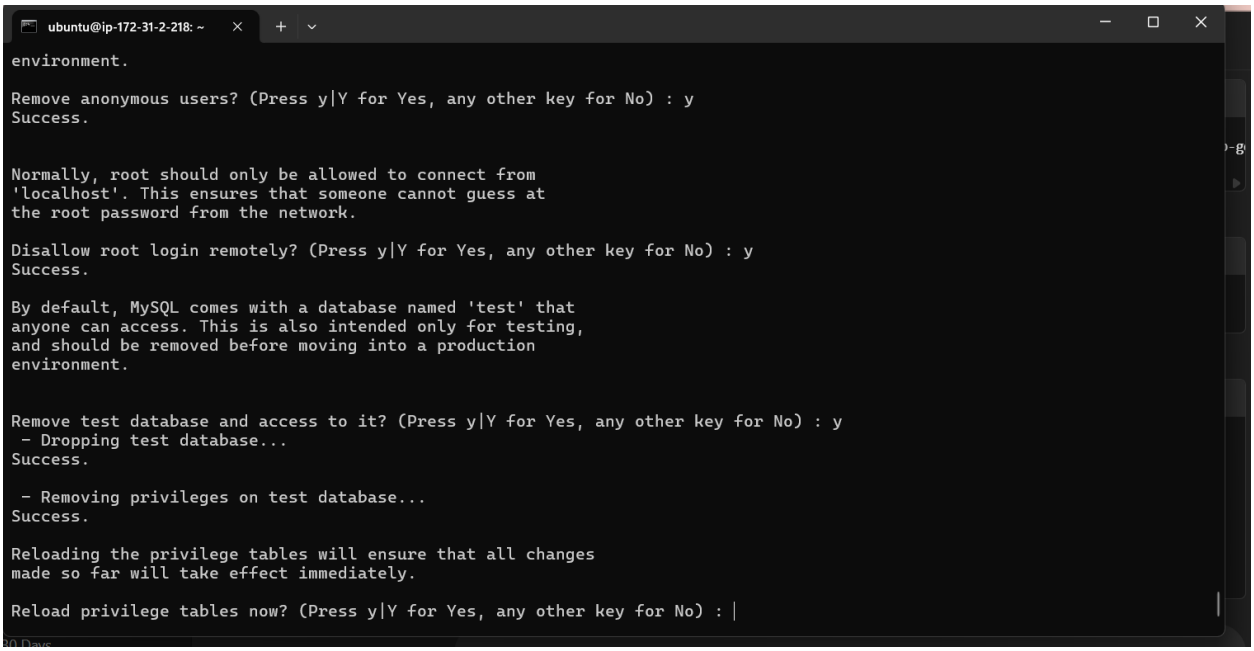
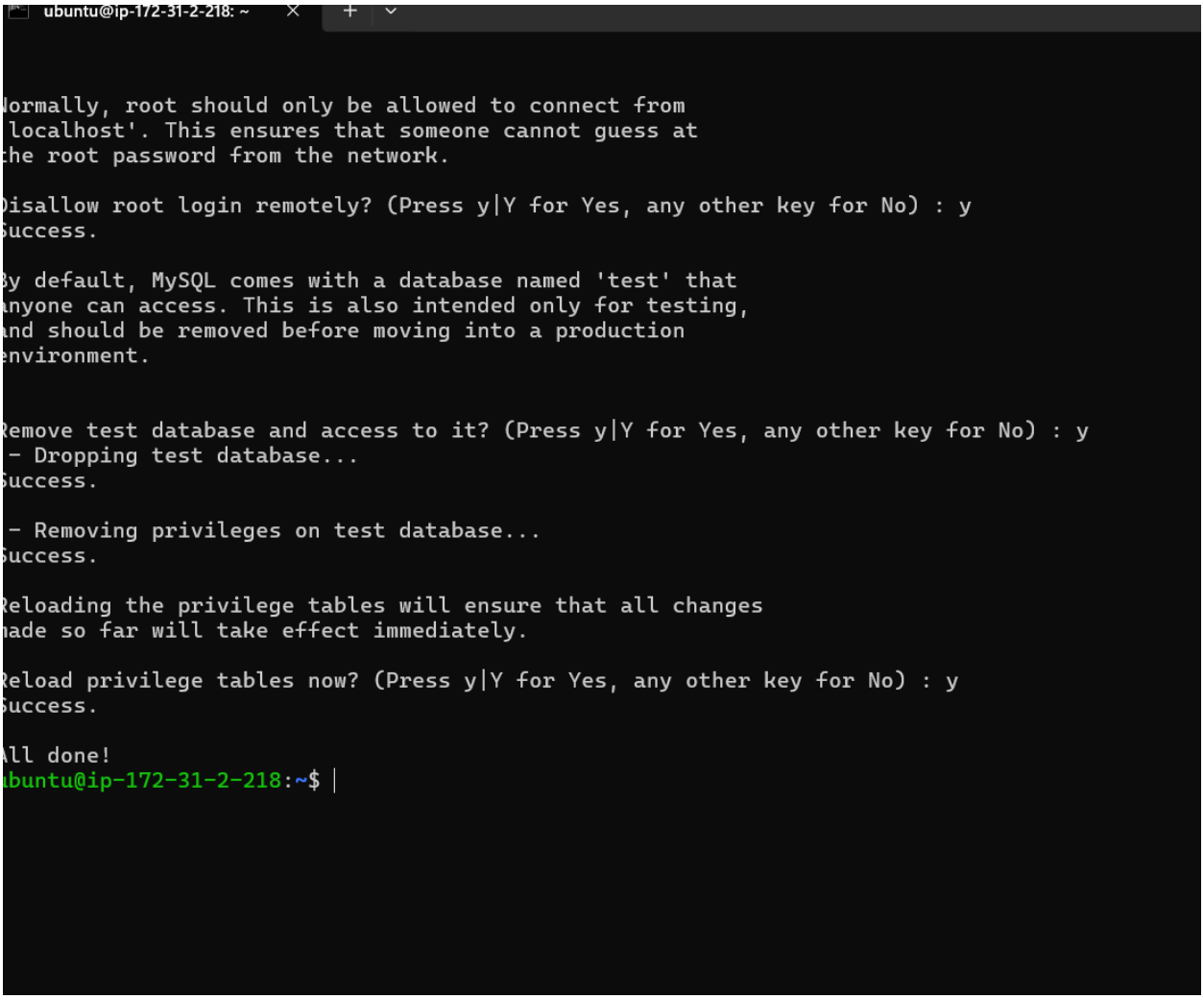
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.
Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.
Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.
Disallow root login remotely? (Press y|Y for Yes, any other key for No) : y
Success.
By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.
Remove test database and access to it? (Press y|Y for Yes, any other key for No) : y


ubuntu@ip-172-31-2-218: ~
environment.
Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.
Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.
Disallow root login remotely? (Press y|Y for Yes, any other key for No) : y
Success.
By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.
Remove test database and access to it? (Press y|Y for Yes, any other key for No) : y
- Dropping test database...
Success.
- Removing privileges on test database...
Success.
Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.
Reload privilege tables now? (Press y|Y for Yes, any other key for No) :


ubuntu@ip-172-31-2-218: ~
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localhost'. This ensures that someone cannot guess at
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Remove test database and access to it? (Press y|Y for Yes, any other key for No) : y
- Dropping test database...
Success.
- Removing privileges on test database...
Success.
Reloading the privilege tables will ensure that all changes
ade so far will take effect immediately.
Reload privilege tables now? (Press y|Y for Yes, any other key for No) : y
Success.
All done!
ubuntu@ip-172-31-2-218:~$

2. setting up wordpress

Next install wordpress by typing:

sudo apt install wordpress

```
ubuntu@ip-172-31-2-218:~$ cd /tmp
curl -O https://wordpress.org/latest.tar.gz
tar -xzf latest.tar.gz
sudo mv wordpress /var/www/html/
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
 24 25.6M   24 6322k    0     0   147k      0  0:02:58  0:00:42  0:02:16  150k
```

Then set it up by creating the database and configuring it.

```
 - Dropping test database...
Success.

 - Removing privileges on test database...
Success.

Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.

Reload privilege tables now? (Press y|Y for Yes, any other key for No) : y
Success.

All done!
ubuntu@ip-172-31-2-218:~$ sudo mysql -u root -p
CREATE DATABASE wordpress;
CREATE USER 'wpuser'@'localhost' IDENTIFIED BY 'yourpassword';
GRANT ALL PRIVILEGES ON wordpress.* TO 'wpuser'@'localhost';
FLUSH PRIVILEGES;
EXIT;
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.42-0ubuntu0.24.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE wordpress;
Query OK, 1 row affected (0.02 sec)

mysql> CREATE USER 'wpuser'@'localhost' IDENTIFIED BY 'Mycatisgay';
Query OK, 0 rows affected (0.04 sec)

mysql>
```

Create an account for the account and user.

```
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE wordpress;
Query OK, 1 row affected (0.02 sec)

mysql> CREATE USER 'wpuser'@'localhost' IDENTIFIED BY 'Mycatisgay';
Query OK, 0 rows affected (0.04 sec)

mysql> GRANT ALL PRIVILEGES ON wordpress.* TO 'wpuser'@'localhost';
```

Copied WordPress to Apache directory:

sudo cp -r /usr/share/wordpress/* /var/www/html/

sudo chown -R www-data:www-data /var/www/html

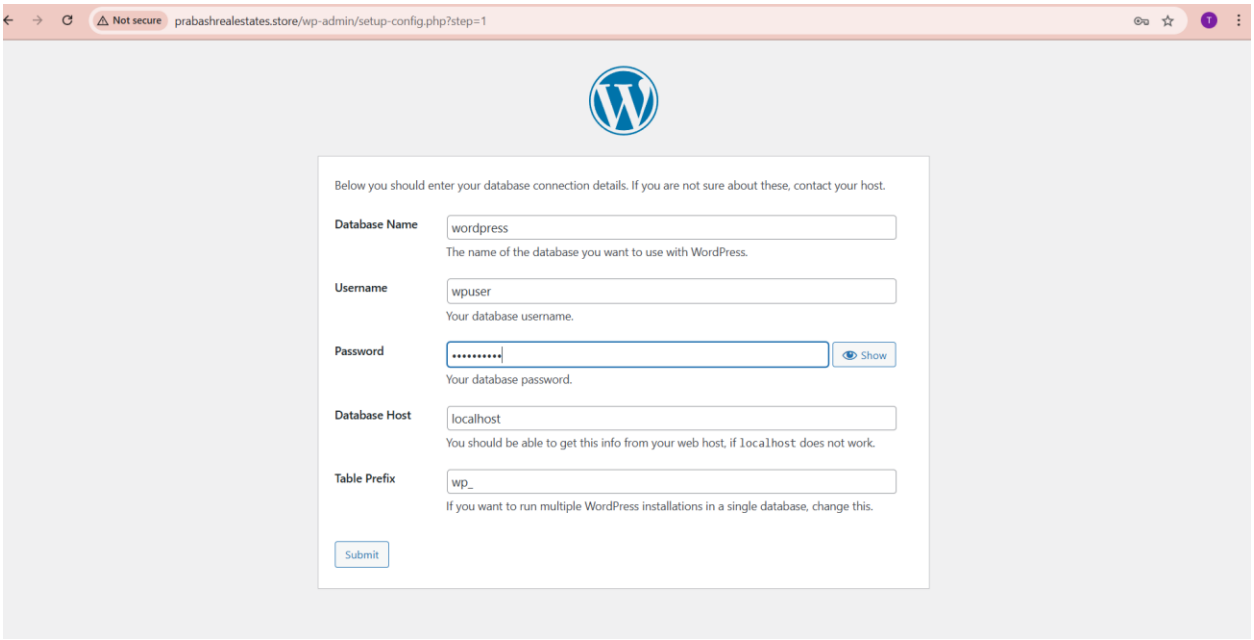
```
ubuntu@ip-172-31-2-218:/tmp$ ls /var/www/html/wordpress
index.php    wp-activate.php     wp-comments-post.php  wp-cron.php        wp-load.php   wp-settings.php   xmlrpc.php
license.txt  wp-admin            wp-config-sample.php  wp-includes        wp-login.php  wp-signup.php
readme.html  wp-blog-header.php  wp-content            wp-links-opml.php  wp-mail.php   wp-trackback.php
ubuntu@ip-172-31-2-218:/tmp$ sudo chown -R www-data:www-data /var/www/html/wordpress
sudo chmod -R 755 /var/www/html/wordpress
ubuntu@ip-172-31-2-218:/tmp$
```

Restart apache

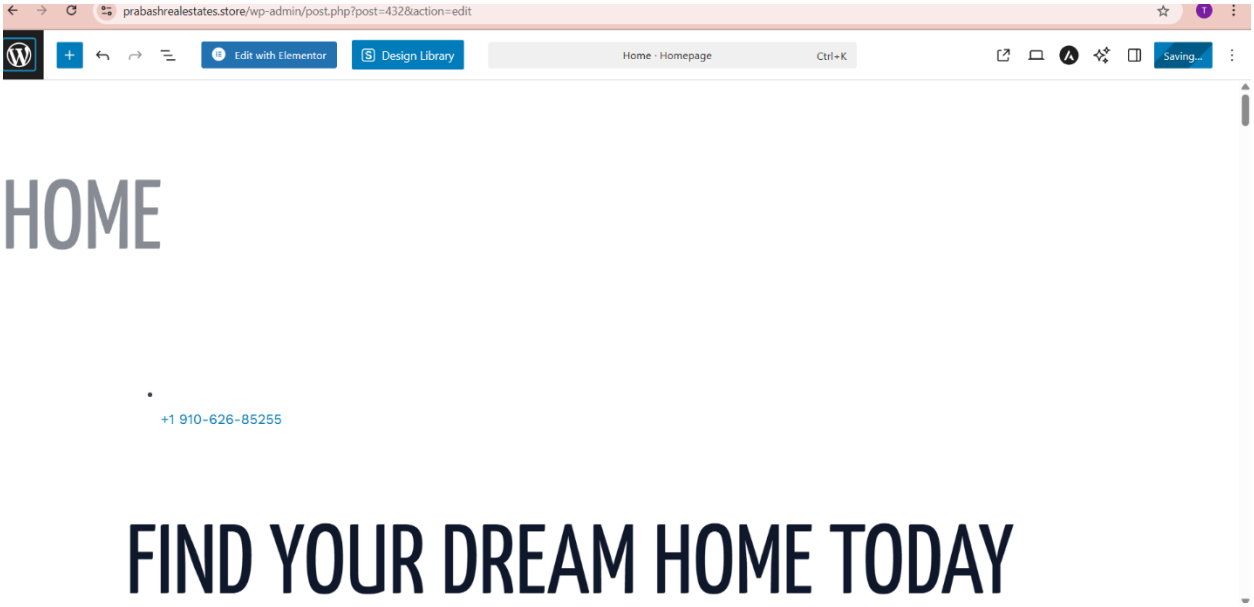
```
sudo rmdir /var/www/html/wordpress
ubuntu@ip-172-31-2-218:/tmp$ sudo chown -R www-data:www-data /var/www/html
sudo chmod -R 755 /var/www/html
ubuntu@ip-172-31-2-218:/tmp$ sudo systemctl restart apache2
ubuntu@ip-172-31-2-218:/tmp$
```

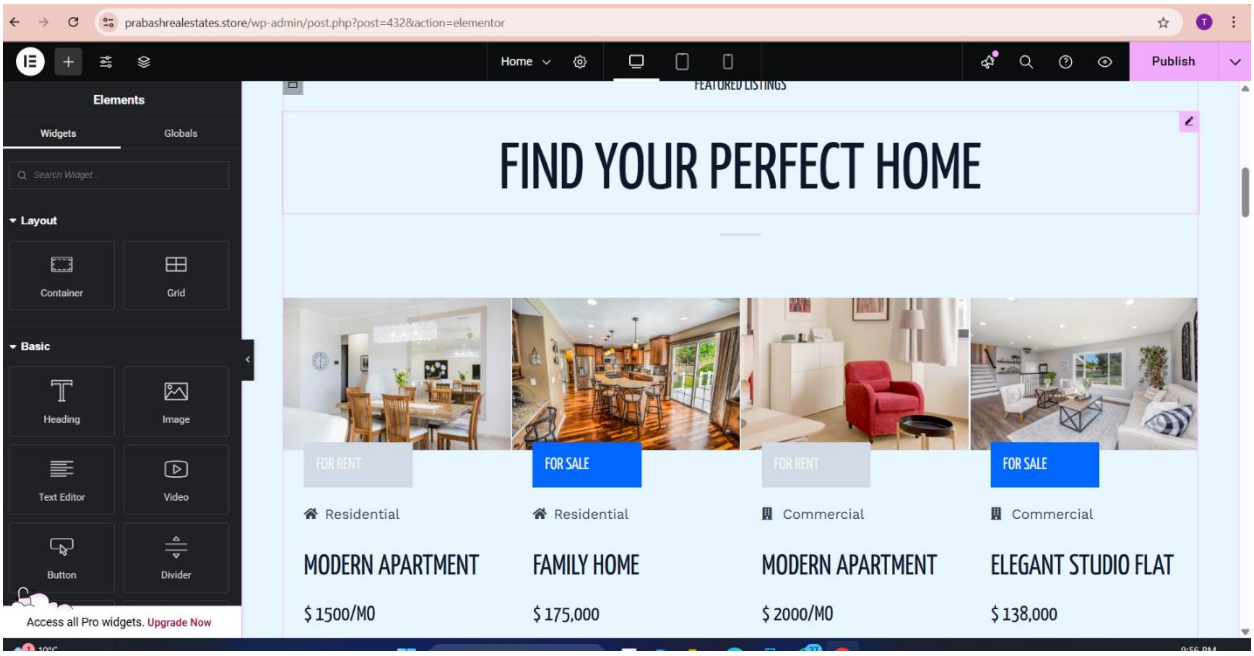
Configured WordPress in browser at:

http://52.63.156.214



Installed **Elementor** and **Simply Schedule Appointments** plugins





Appointment System

Plugin: Simply Schedule Appointments

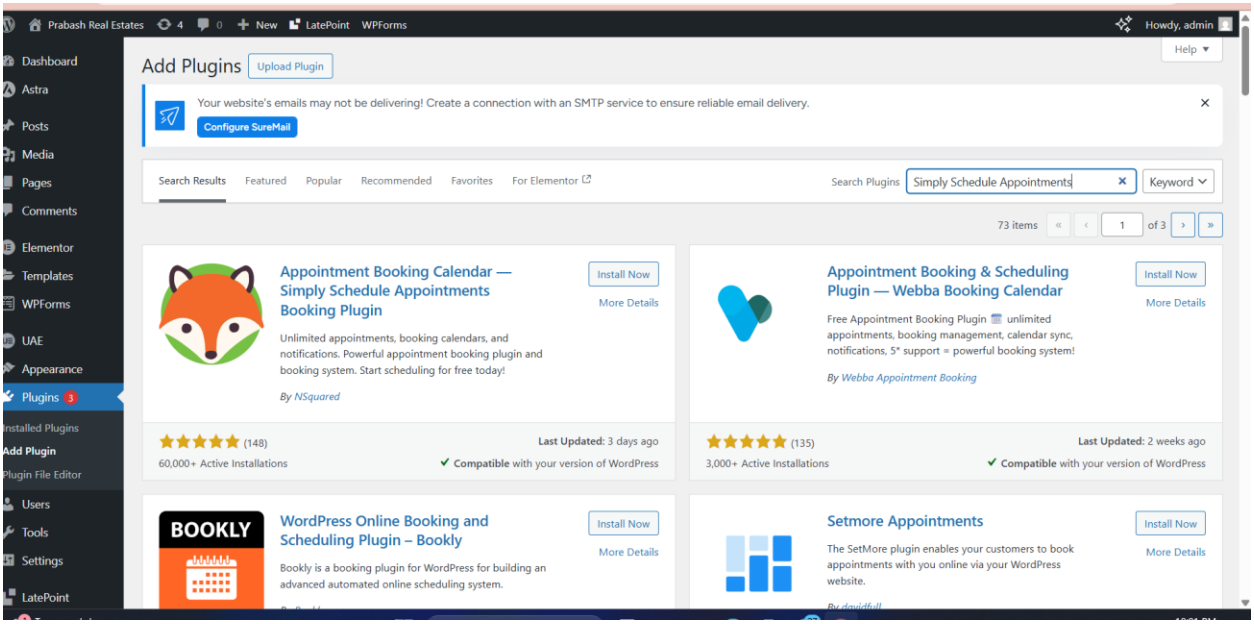
Booking Type: Property Viewing (30 mins)

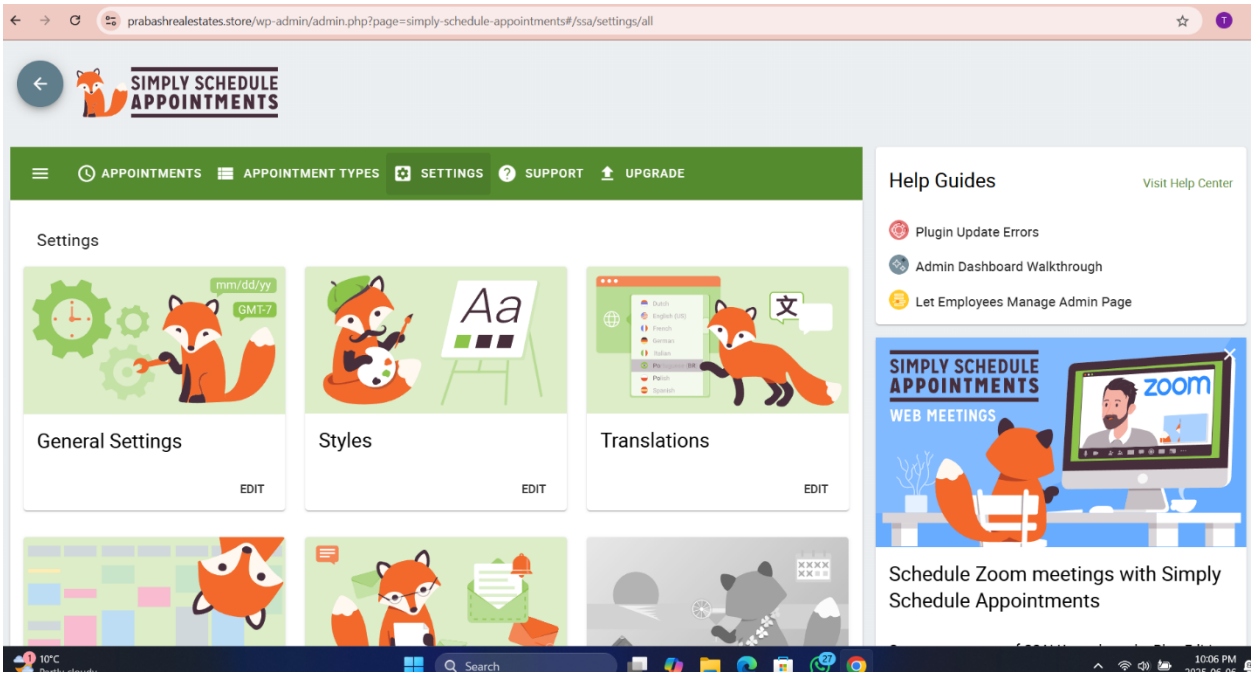
Availability: Mon–Fri, 9AM–5PM

Setup steps:

Installed via Plugins - Add New

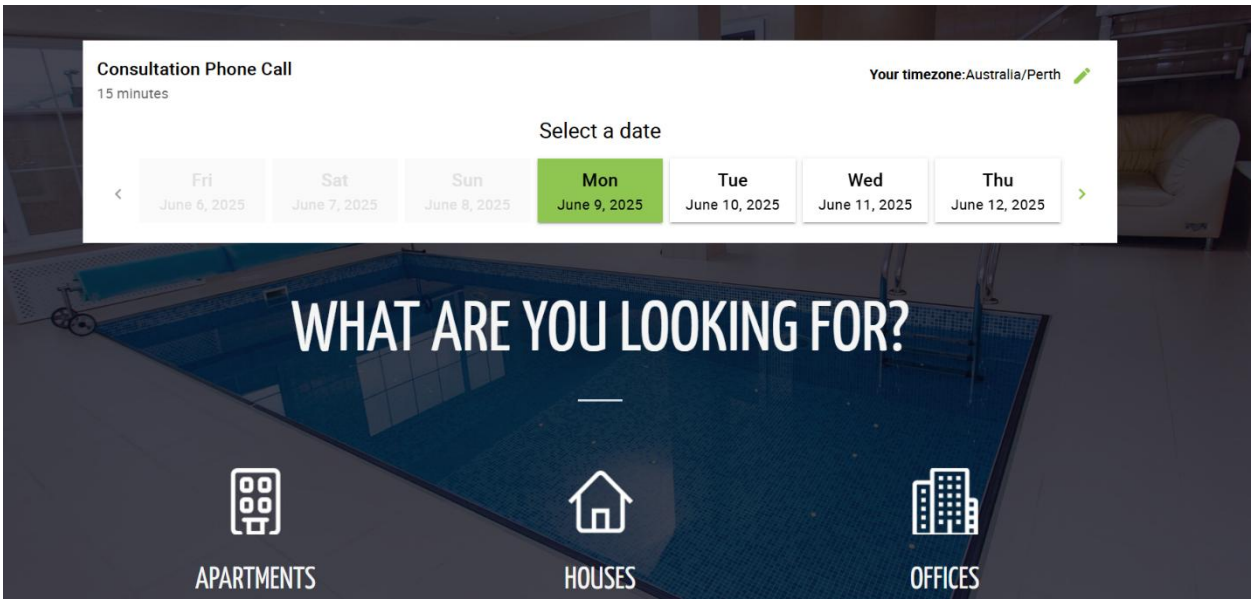
Configured appointment type via Appointments → Appointment Types

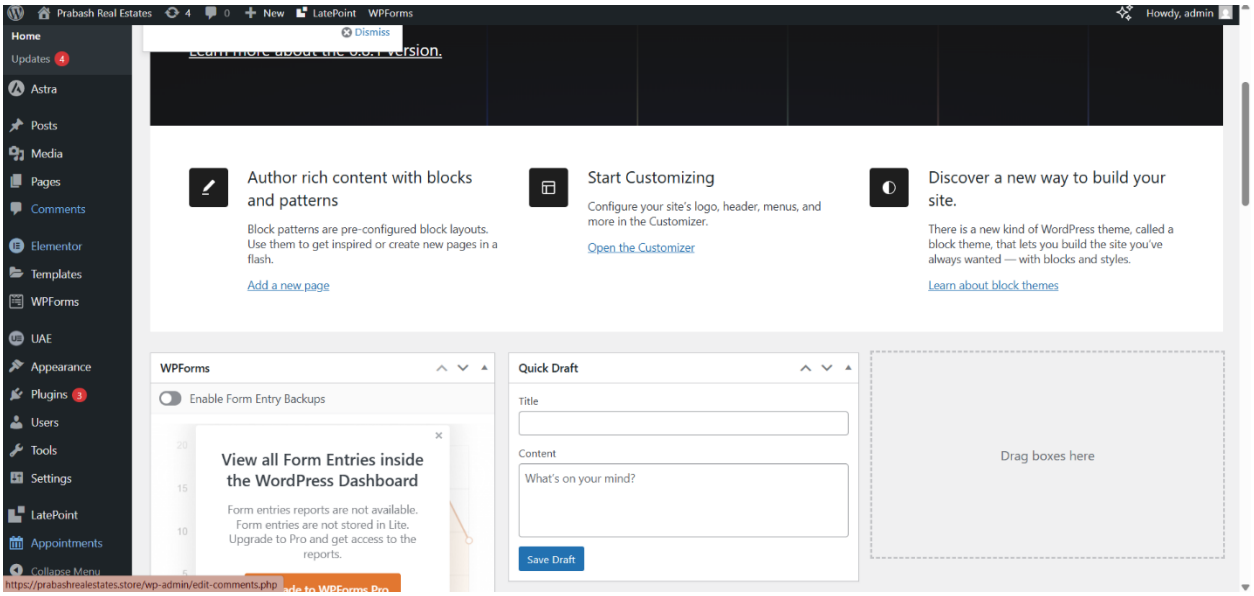




Added booking form to home page via:

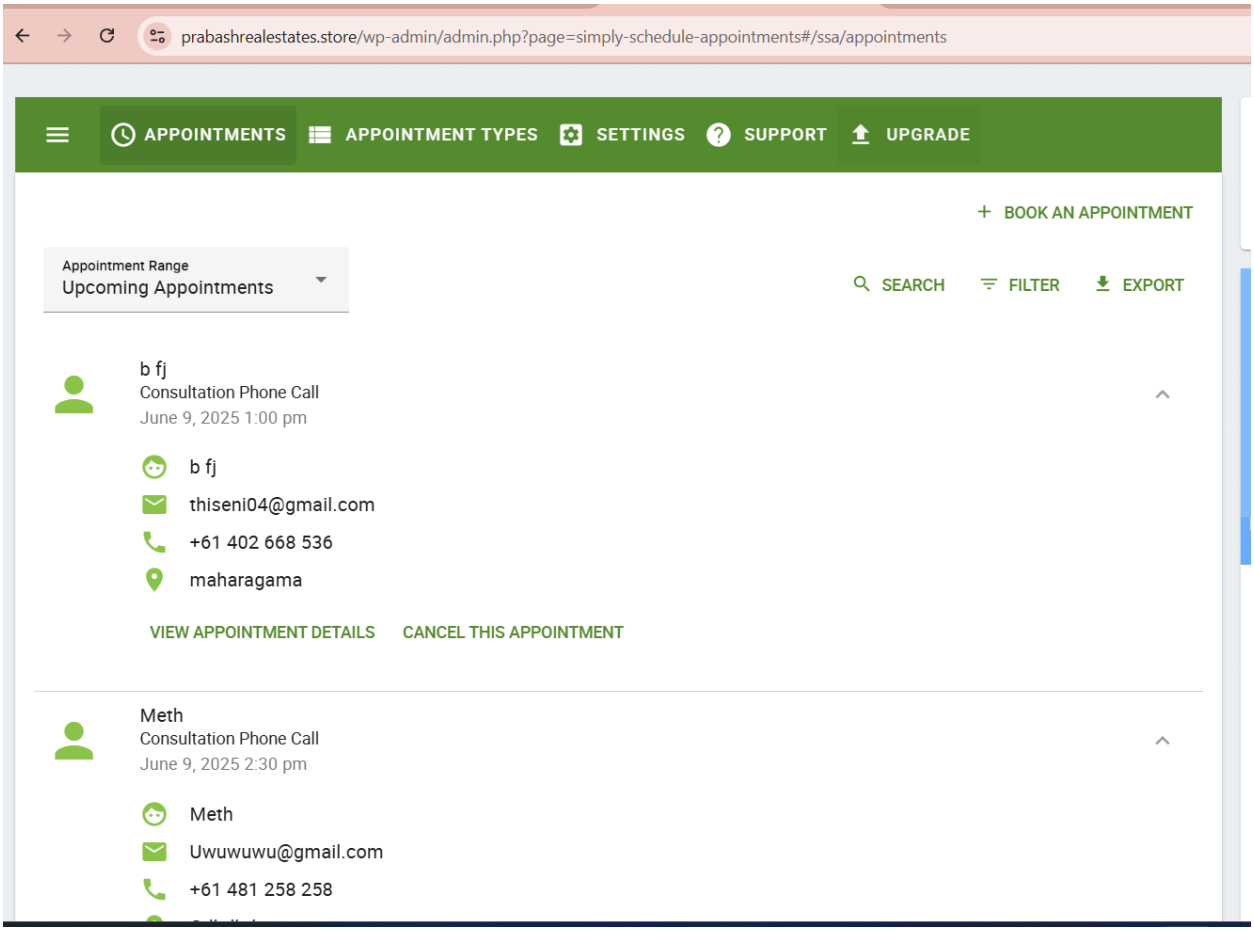
[ssa_booking]


Consultation Phone Call
15 minutes
Your timezone:Australia/Perth
Select a date
Fri June 6, 2025
Sat June 7, 2025
Sun June 8, 2025
Mon June 9, 2025
Tue June 10, 2025
Wed June 11, 2025
Thu June 12, 2025
WHAT ARE YOU LOOKING FOR?
APARTMENTS
HOUSES
OFFICES


Prabash Real Estates
New
LatePoint
WPForms
Howdy, admin
Home
Updates
Astra
Posts
Media
Pages
Comments
Elementor
Templates
WPForms
UAE
Appearance
Plugins
Users
Tools
Settings
LatePoint
Appointments
Dismiss
Author rich content with blocks and patterns
Block patterns are pre-configured block layouts. Use them to get inspired or create new pages in a flash.
Add a new page
Start Customizing
Configure your site's logo, header, menus, and more in the Customizer.
Open the Customizer
Discover a new way to build your site.
There is a new kind of WordPress theme, called a block theme, that lets you build the site you've always wanted — with blocks and styles.
Learn about block themes
WPForms
Enable Form Entry Backups
View all Form Entries inside the WordPress Dashboard
Form entries reports are not available. Form entries are not stored in Lite. Upgrade to Pro and get access to the reports.
Quick Draft
Title
Content
What's on your mind?
Save Draft
Drag boxes here

View bookings at:

WordPress Admin → Appointments → Appointments



3. DNS Setup

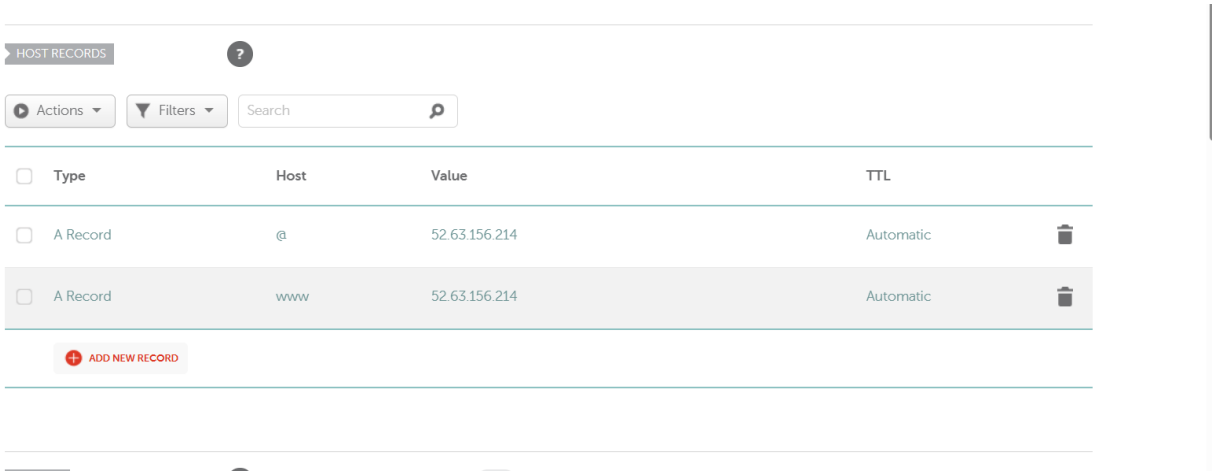
Domain: `prabashrealestates.store` (purchased on Namecheap)

Used Namecheap's DNS to point domain to cloud server

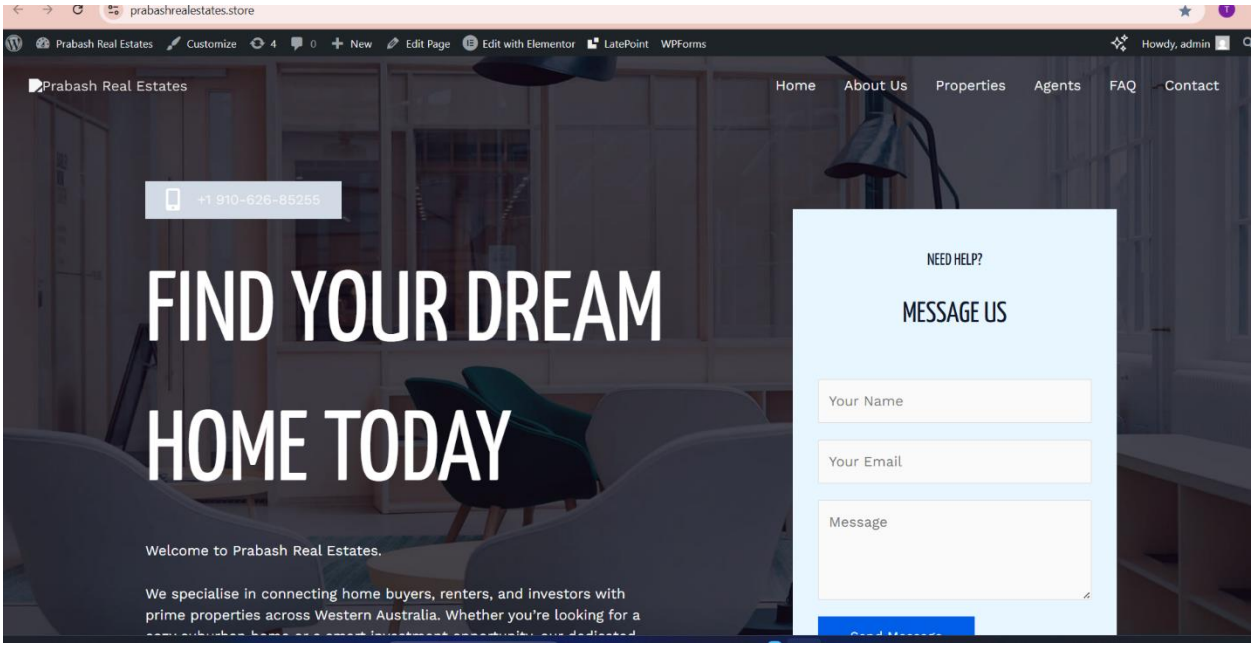
Added A records:

@ - 52.63.156.214

www - 52.63.156.214



Tested by visiting: http://prabashrealestates.store



Also tested using:

nslookup prabashrealestates.store

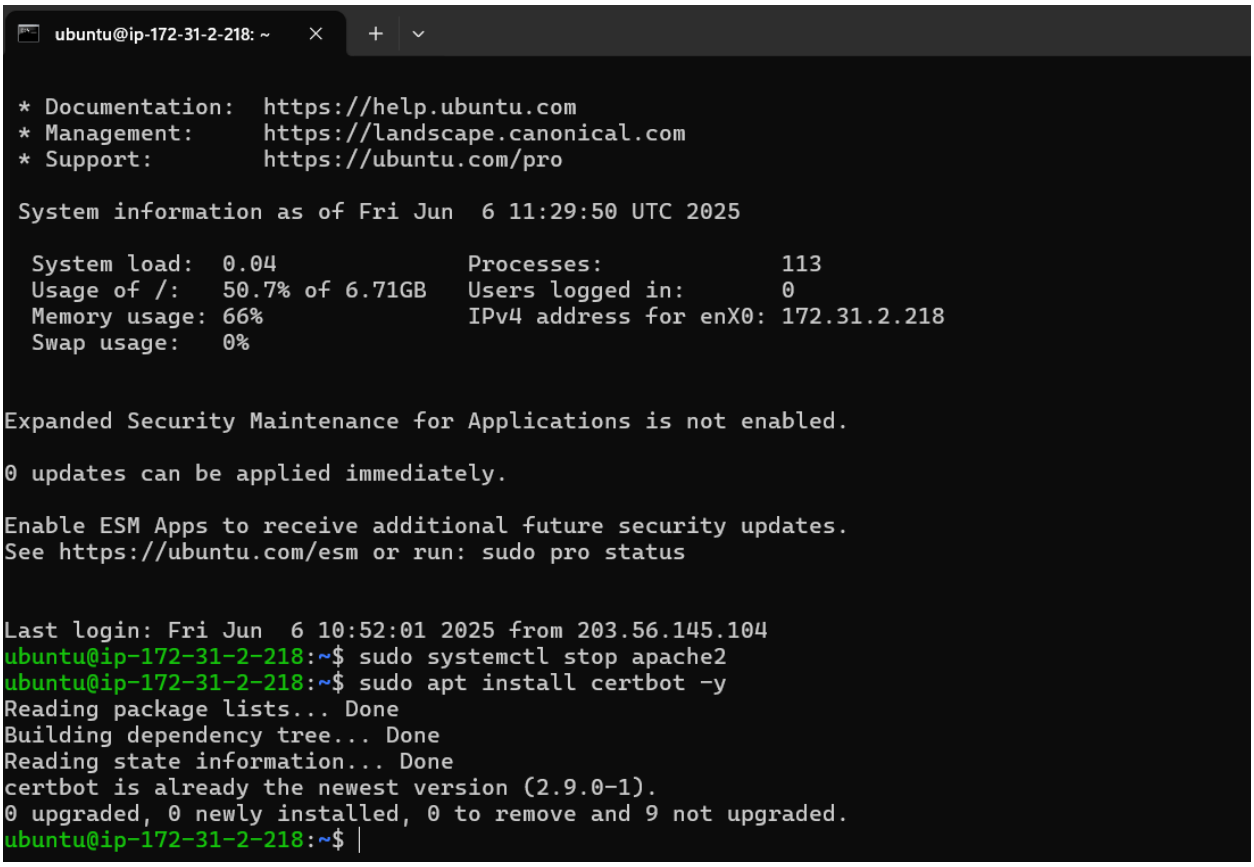
4. SSL/TSL setup

Certbot with Apache plugin:

sudo apt install certbot python3-certbot-apache

sudo certbot –apache

stop apache momentarily if it crashes and install certbot in standalone mode.



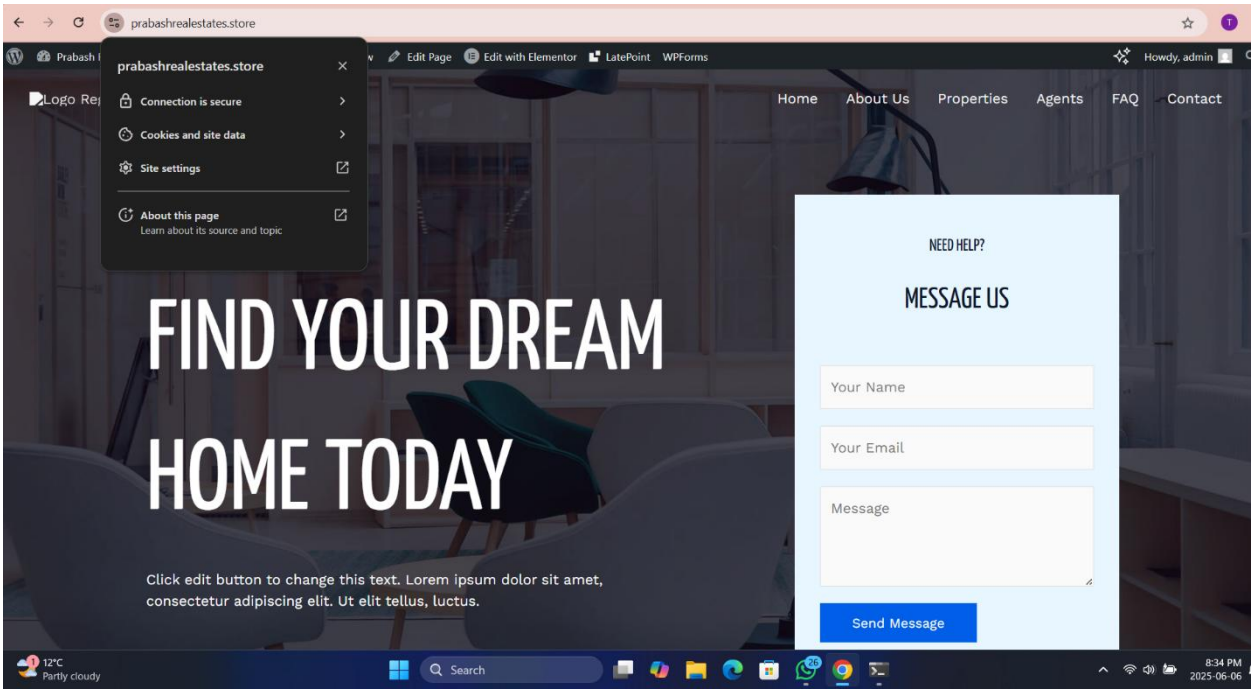
Choose to redirect all HTTP to HTTPS.

```
ubuntu@ip-172-31-2-218:~$ sudo certbot certonly --standalone -d prabashrealestates.store -d www.prabashrealestates.store
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Requesting a certificate for prabashrealestates.store and www.prabashrealestates.store

Successfully received certificate.
Certificate is saved at: /etc/letsencrypt/live/prabashrealestates.store/fullchain.pem
Key is saved at:         /etc/letsencrypt/live/prabashrealestates.store/privkey.pem
This certificate expires on 2025-09-04.
These files will be updated when the certificate renews.
Certbot has set up a scheduled task to automatically renew this certificate in the background.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
If you like Certbot, please consider supporting our work by:
 * Donating to ISRG / Let's Encrypt:   https://letsencrypt.org/donate
 * Donating to EFF:                    https://eff.org/donate-le
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
ubuntu@ip-172-31-2-218:~$
```

Check if it applies.



5. Uptime_plus_cpu.sh Script

Purpose: Log uptime, CPU, RAM, and disk info to a public file

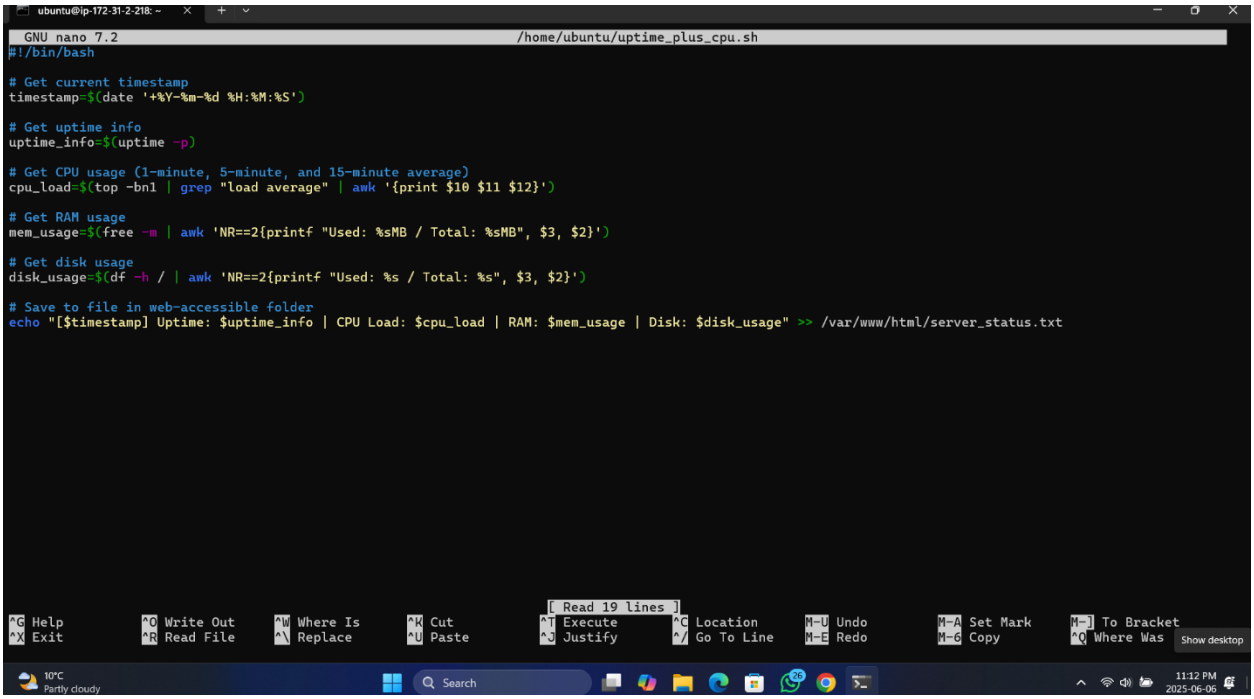
Location: /home/ubuntu/uptime_plus_cpu.sh

Create Script:

nano ~/uptime_plus_cpu.sh

```
ubuntu@ip-172-31-2-218:~$ nano ~/uptime_plus_cpu.sh
ubuntu@ip-172-31-2-218:~$ nano ~/uptime_plus_cpu.sh
```

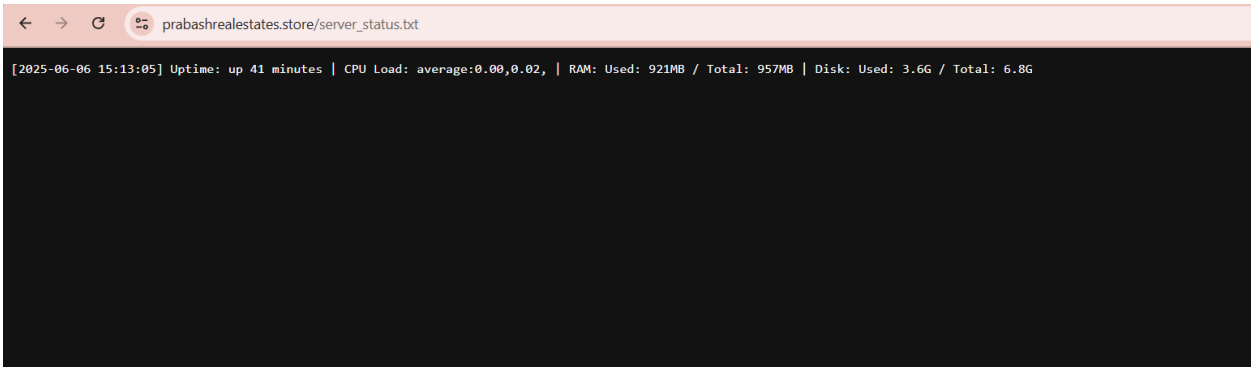
Script content:



Command used to run:

sudo ./uptime_plus_cpu.sh

https://prabashrealestates.store/server_status.txt



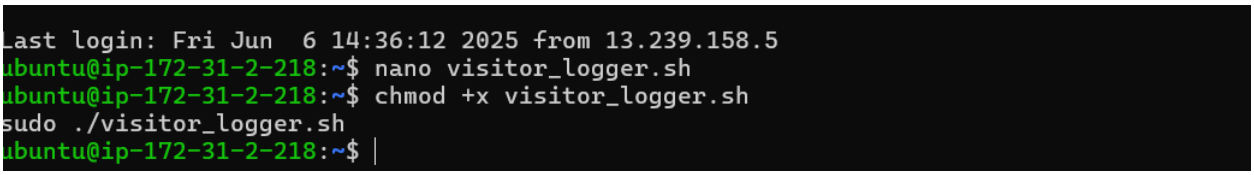
6. Script 2: visitor_logger.sh

Purpose: Log top 5 visitor IPs from Apache logs

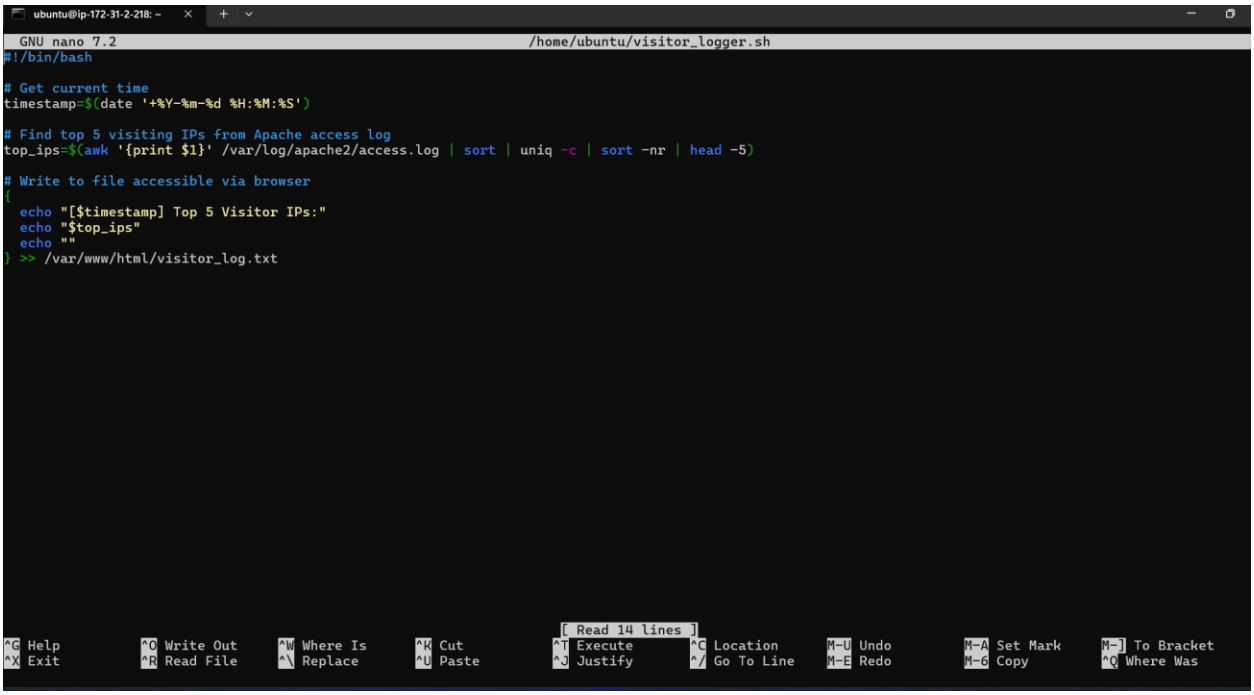
Location: /home/ubuntu/visitor_logger.sh

Create Script:

nano ~/visitor_logger.sh



Script content:

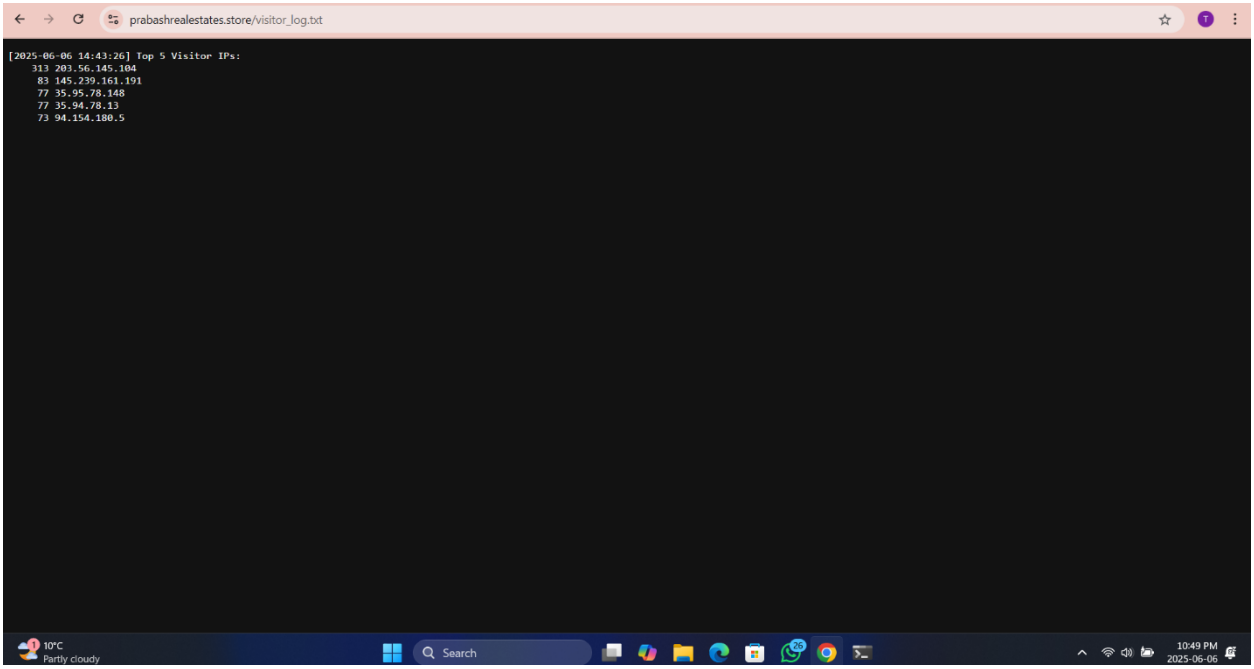


Command used to run and execute it:

chmod +x visitor_logger.sh

sudo ./visitor_logger.sh

test it at: https://prabashrealestates.store/visitor_log.txt

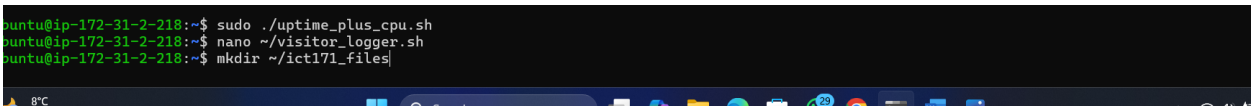

prabashrealestates.store/visitor_log.txt
[2025-06-06 14:43:26] Top 5 Visitor IPs:
313 203.56.145.104
83 145.239.161.191
77 35.95.78.148
77 35.94.78.13
73 94.154.180.5
10°C
Partly cloudy
Search
10:49 PM
2025-06-06


[2025-06-06 14:43:26] Top 5 Visitor IPs:
313 203.56.145.104
83 145.239.161.191
77 35.95.78.148
77 35.94.78.13
73 94.154.180.5

7. Folder and File Management

Created script folder:

mkdir ~/ict171_files



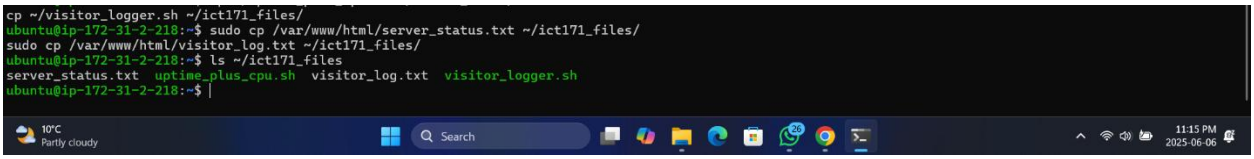
Copied files:

cp ~/uptime_plus_cpu.sh ~/ict171_files/

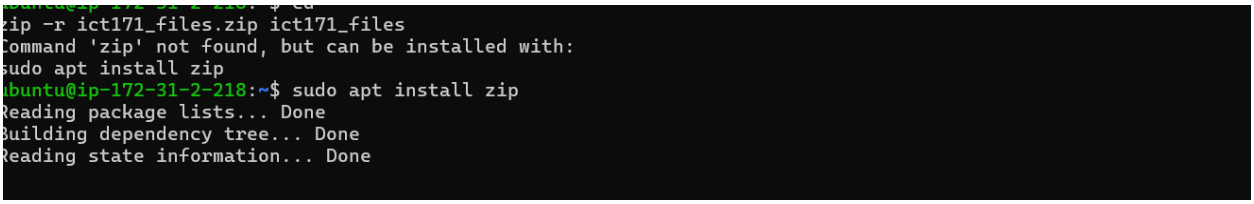
cp ~/visitor_logger.sh ~/ict171_files/

sudo cp /var/www/html/visitor_log.txt ~/ict171_files/

sudo cp /var/www/html/server_status.txt ~/ict171_files/



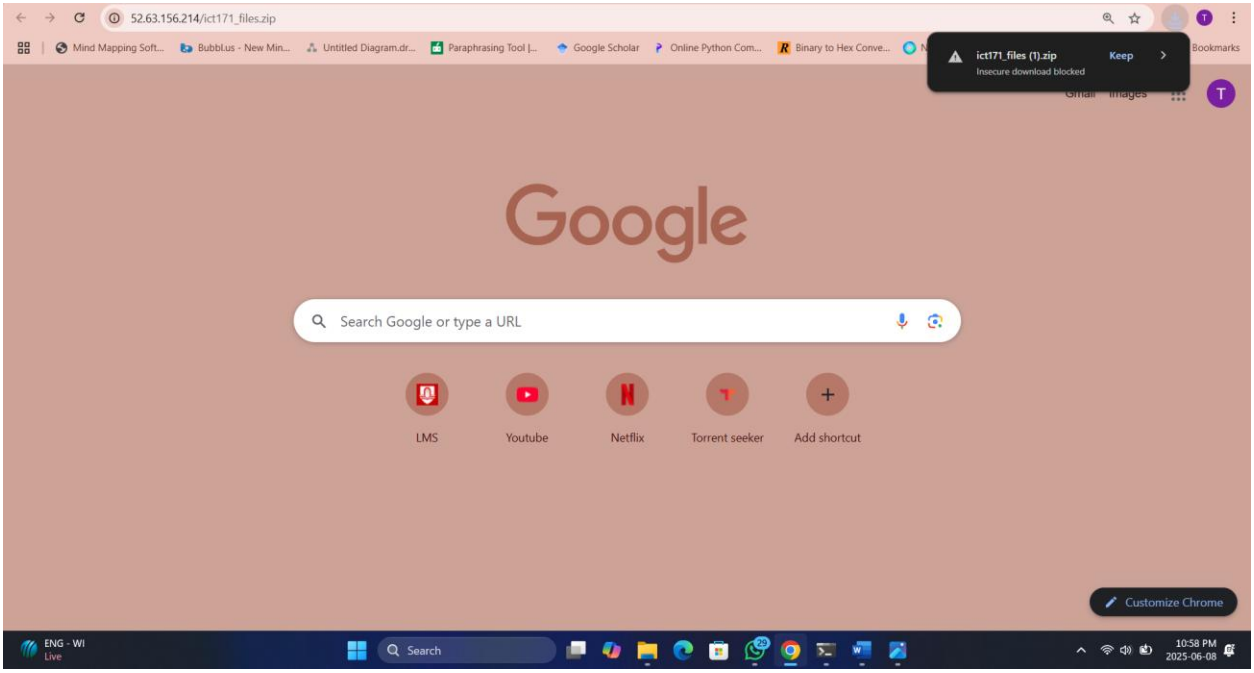
Zipped folder (Install it):

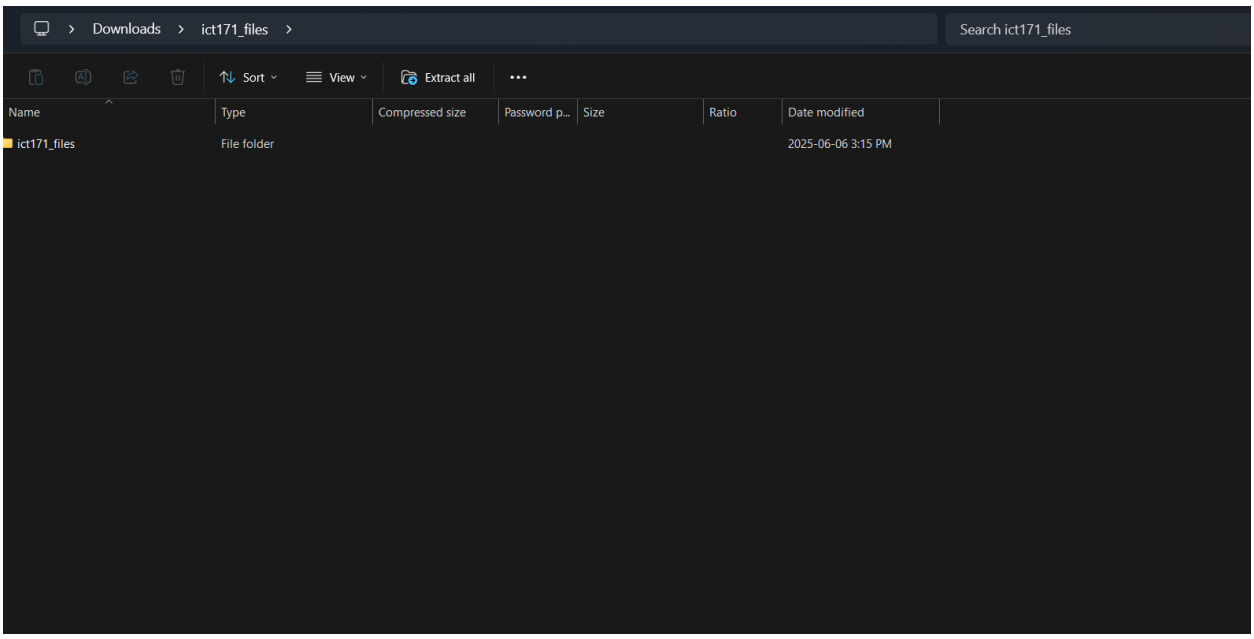


Moved ZIP to public directory:

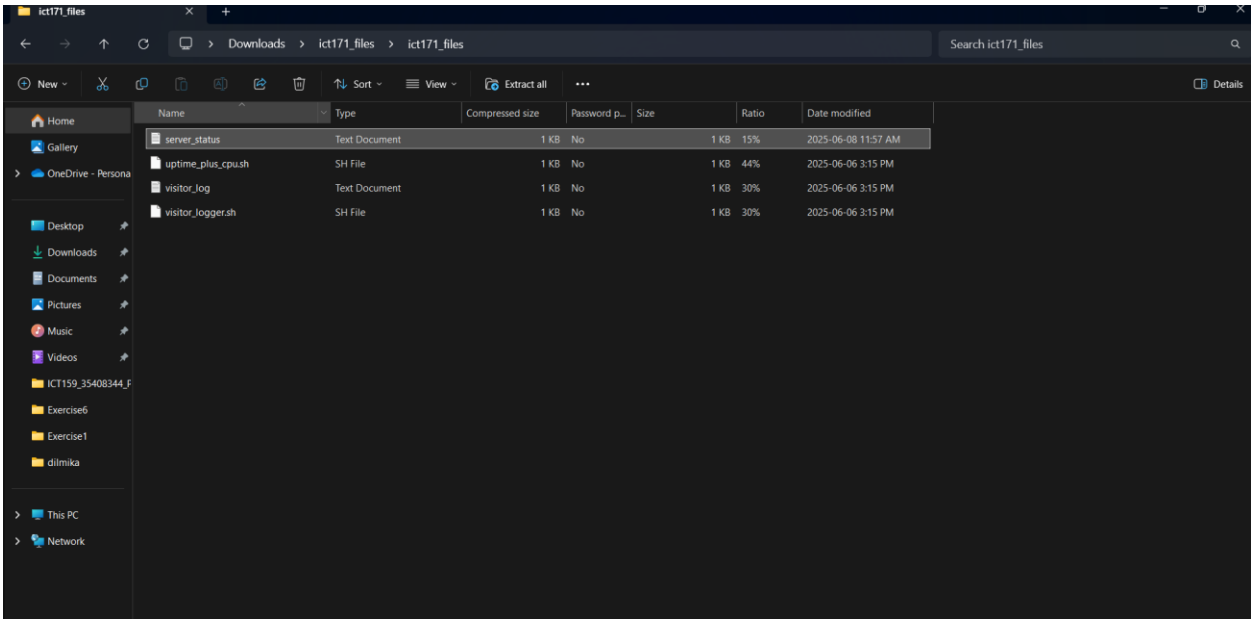
sudo cp ~/ict171_files.zip /var/www/html/

Downloaded from: http://52.63.156.214/ict171_files.zip





Open the zipped file:



View the contents of the file: