Task:- Deploy application in monolithic and microservices architecture

Here's how I completed the task of deploying WordPress in both monolithic and microservices architectures on AWS EC2 instances.

1.] Monolithic Architecture:-

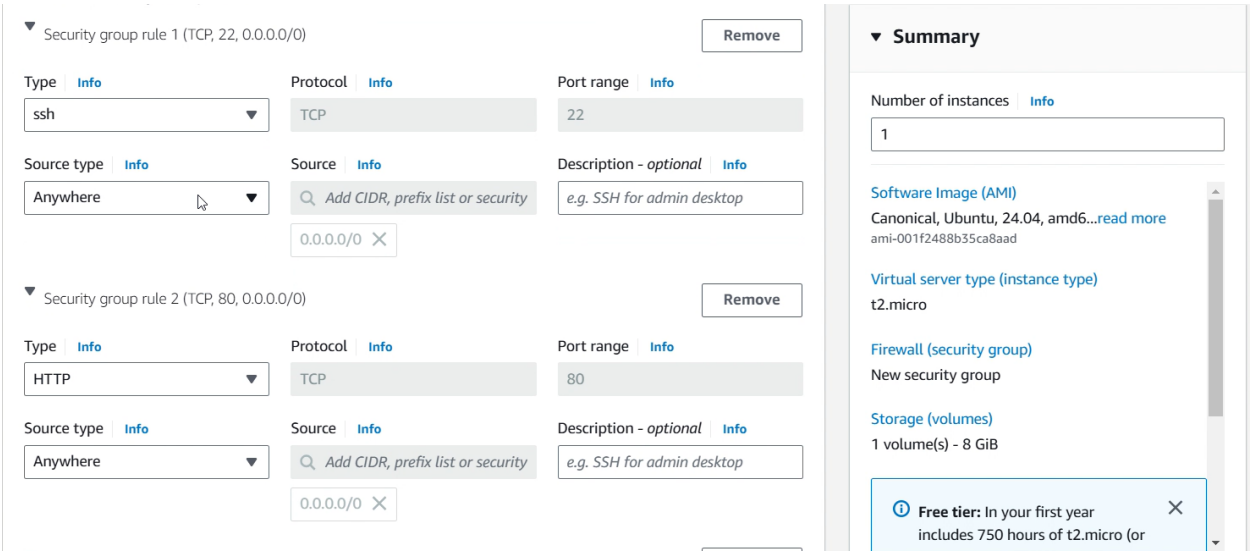
In the monolithic setup, WordPress and MySQL will run on the same EC2 instance.

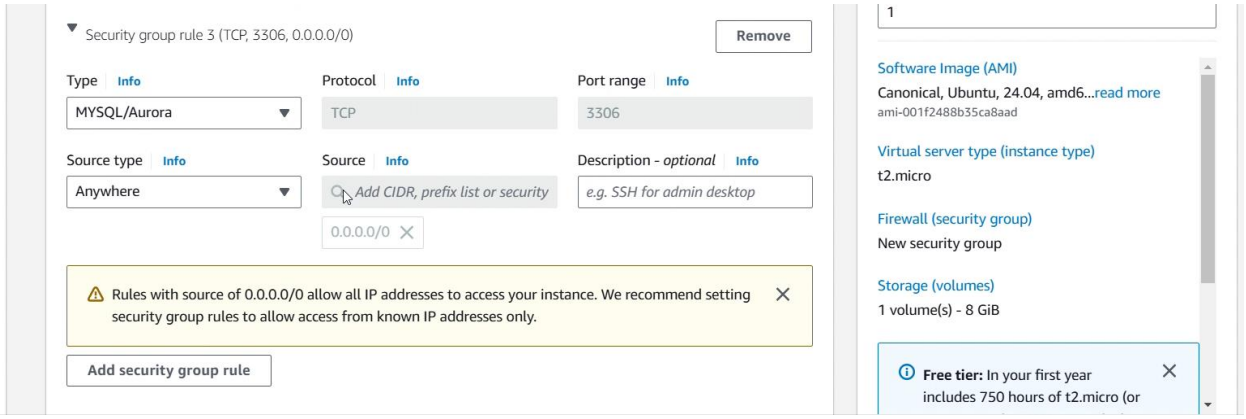
Steps:

1. Launch an EC2 Instance:

- Go to the AWS EC2 Dashboard, choose an Ubuntu AMI, select the `t2.micro` instance type, and name it something like `monolithic-wordpress`.

- Create a security group to allow HTTP (port 80) for web access, MySQL (port 3306) from the instance itself, and SSH (port 22) from your IP.





2. Install Required Software:

- SSH into the instance, update packages, and install Apache for web server, MySQL for the database and PHP.

3. Set Up MySQL:

- Start MySQL, create a database named `wordpress`, and set up a user with access to this database.

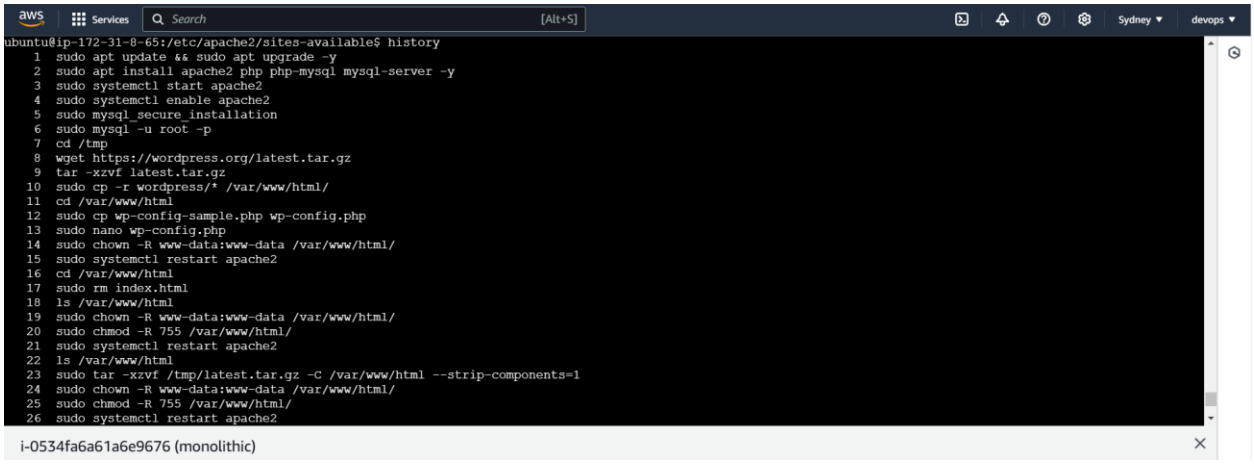
4. Install WordPress:

- Download WordPress, move it to the web root directory (`/var/www/html/wordpress`), and configure it to connect to MySQL (using `localhost` as the database host).

5. Finish Setup and Create Welcome Page:

- Access `http://<Instance_Public_IP>/wordpress` in a browser to complete the WordPress setup, then log in to the dashboard, create a Welcome Page, and set it as the homepage.

The commands used are as follows:-



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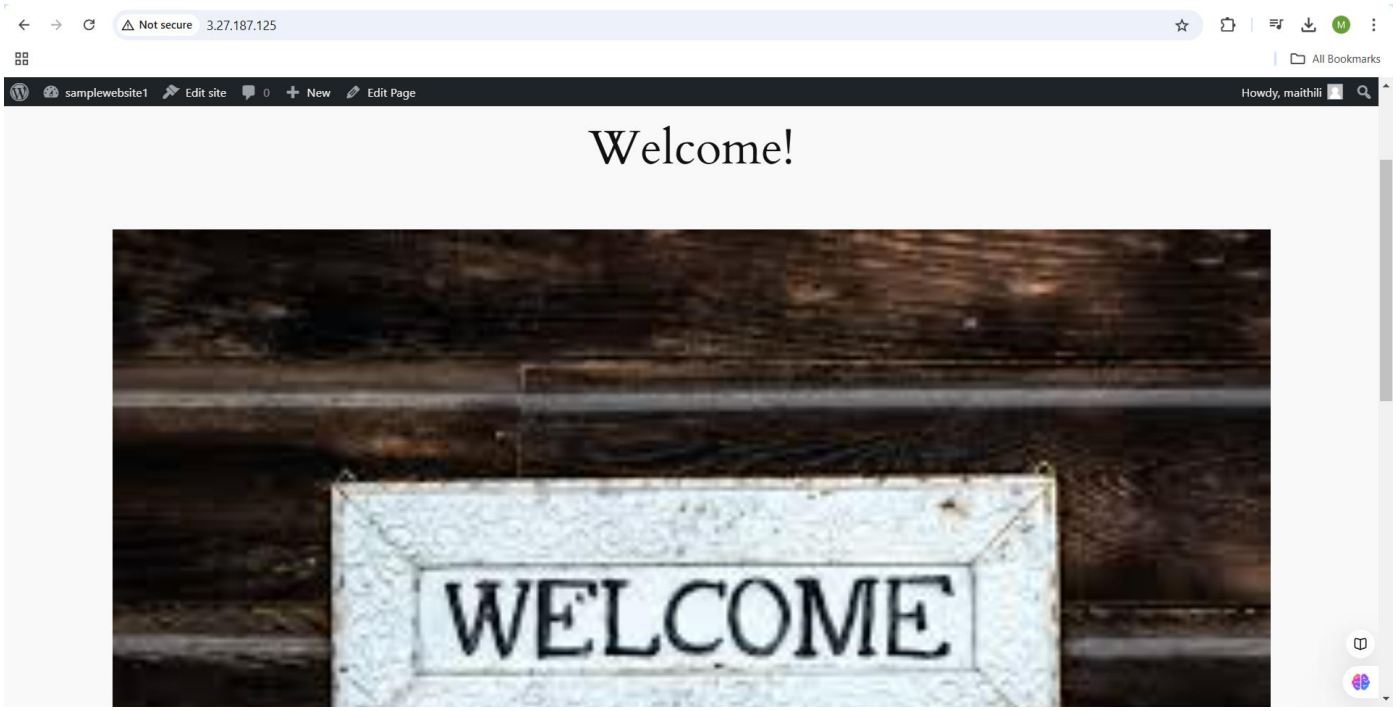


2.] Microservices Architecture

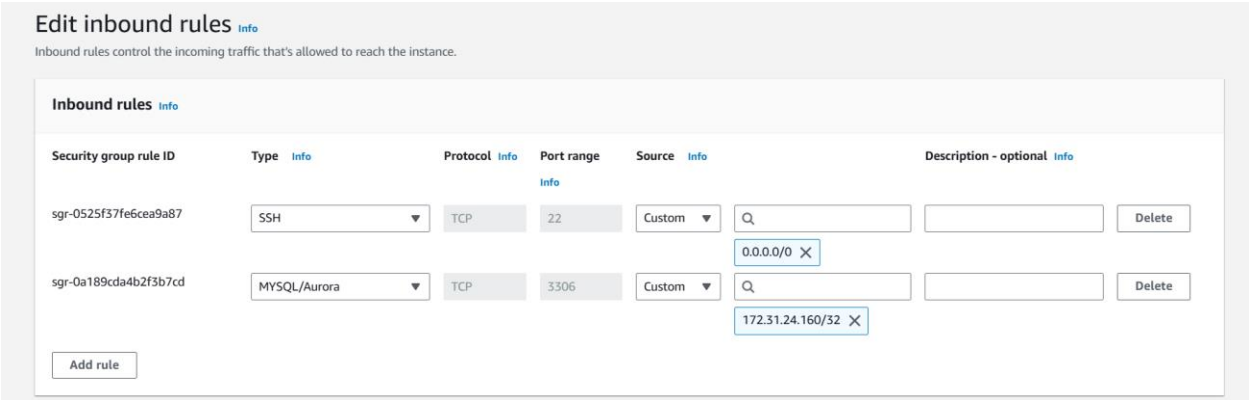
For the microservices setup, WordPress and MySQL will run on separate EC2 instances.

Steps:

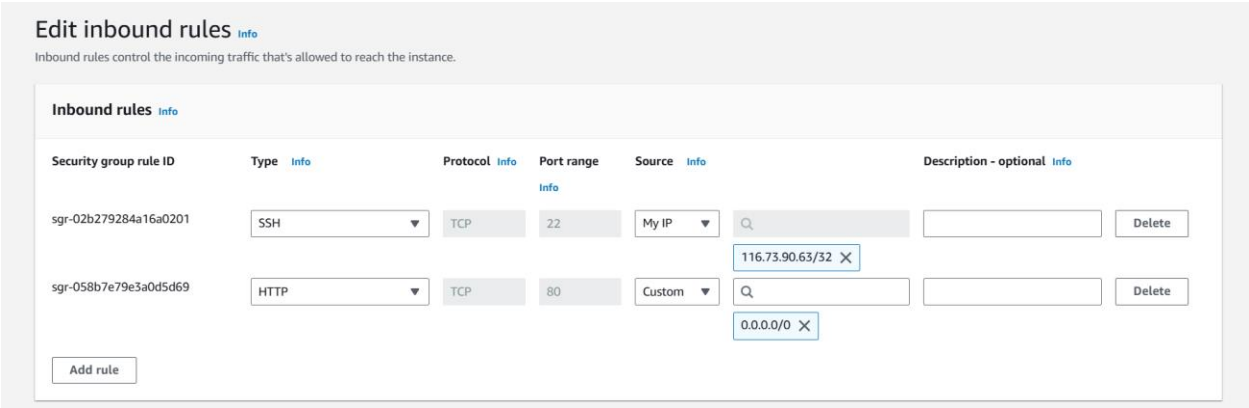
1. Launch EC2 Instances:

- Start two instances:

- One for MySQL with a security group that allows inbound MySQL connections (port 3306) from the WordPress instance's private IP.



- One for WordPress with a security group that allows HTTP (port 80) for public web access and SSH (port 22) from your IP.



2. Install MySQL on the MySQL Instance:

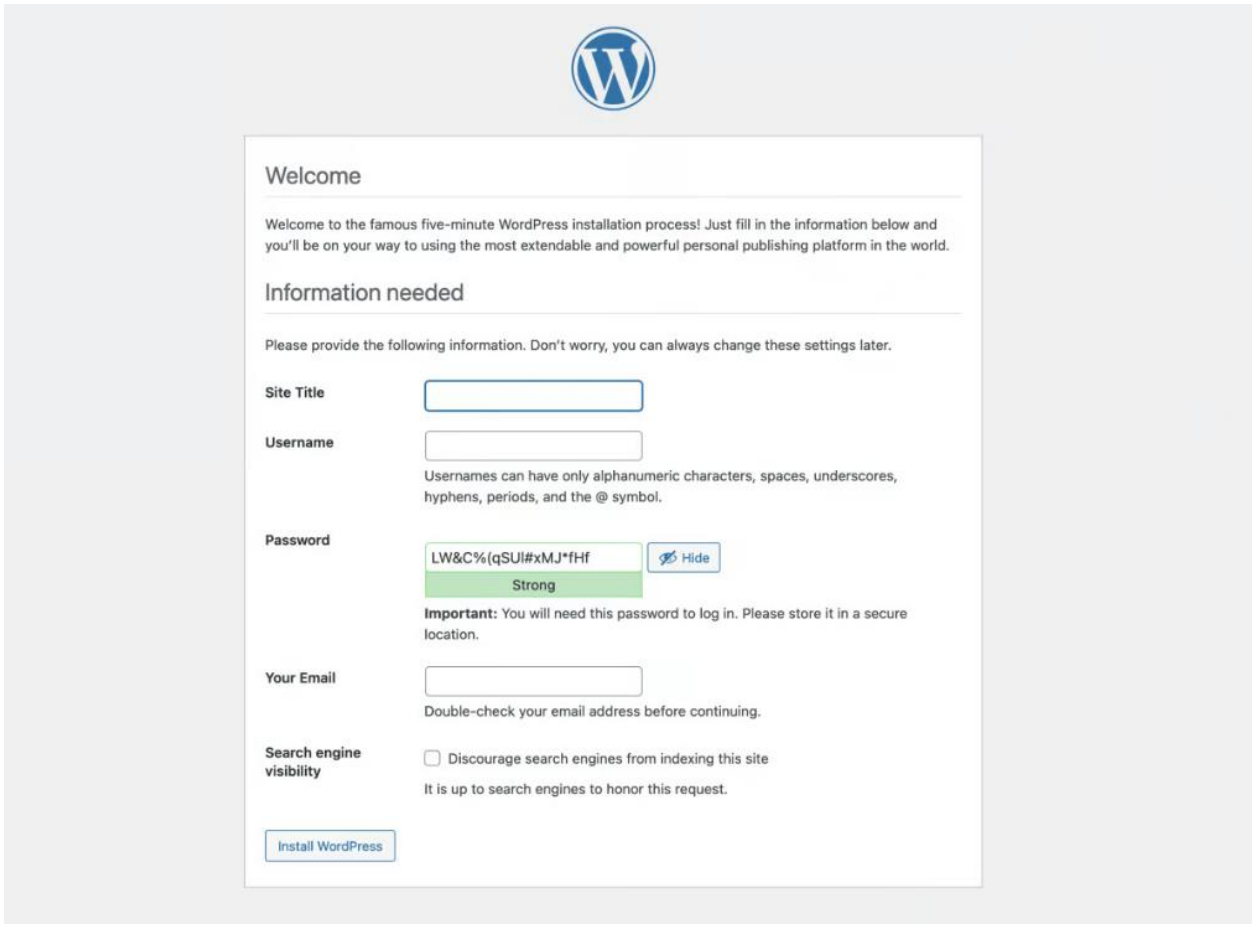
- SSH into the MySQL instance, install MySQL, and configure it to accept remote connections. Create a `wordpress` database and a user for the WordPress instance to connect.

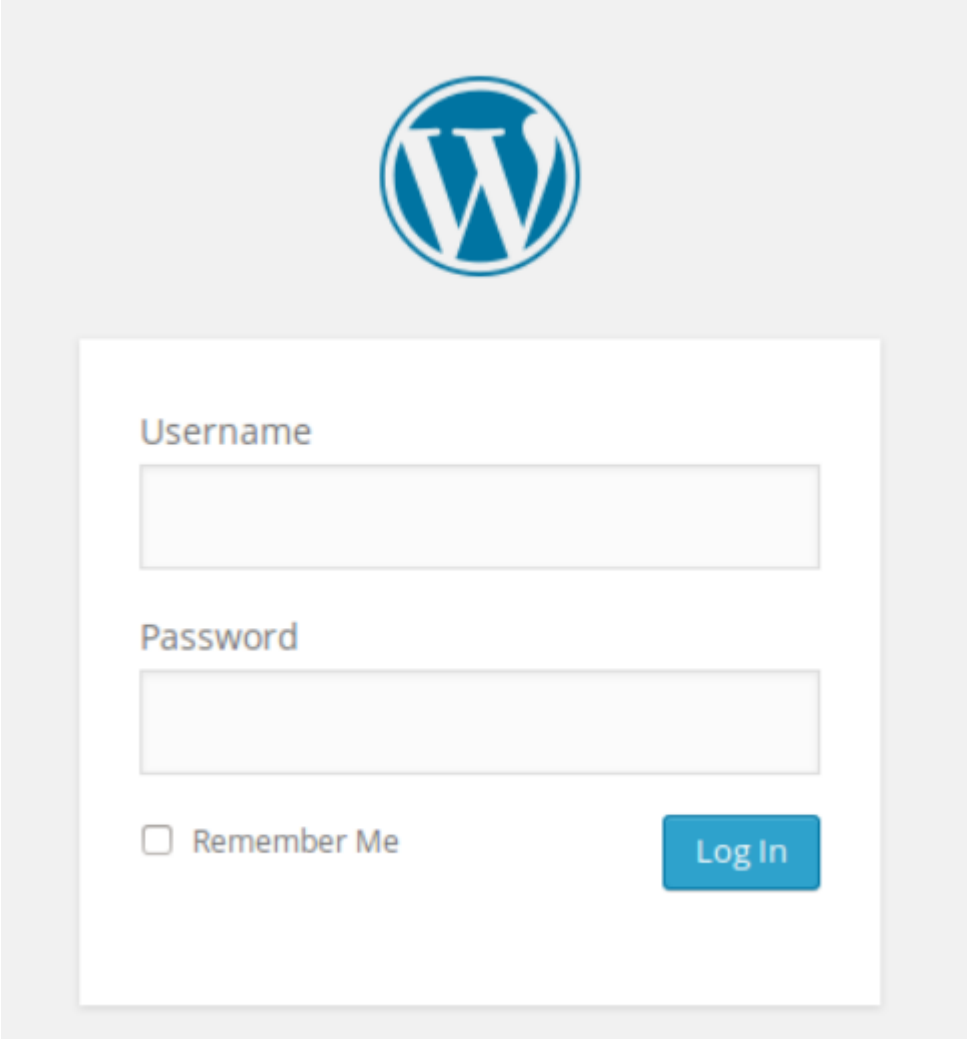
3. Install WordPress on the WordPress Instance:

- SSH into the WordPress instance, install Apache and PHP, download WordPress, and configure it to connect to the MySQL instance by using the MySQL instance’s private IP.

4. Finish Setup and Create Welcome Page:

- Go to `http://<WordPress_Instance_Public_IP>/wordpress` in a browser, complete the WordPress setup, create a Welcome Page, and set it as the homepage.


Welcome
Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.
Information needed
Please provide the following information. Don't worry, you can always change these settings later.
Site Title
Username
Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.
Password
LW&C%(qSUl#xMJ*fHf
Hide
Strong
Important: You will need this password to log in. Please store it in a secure location.
Your Email
Double-check your email address before continuing.
Search engine visibility
Discourage search engines from indexing this site
It is up to search engines to honor this request.
Install WordPress



The commands used are as follows:-

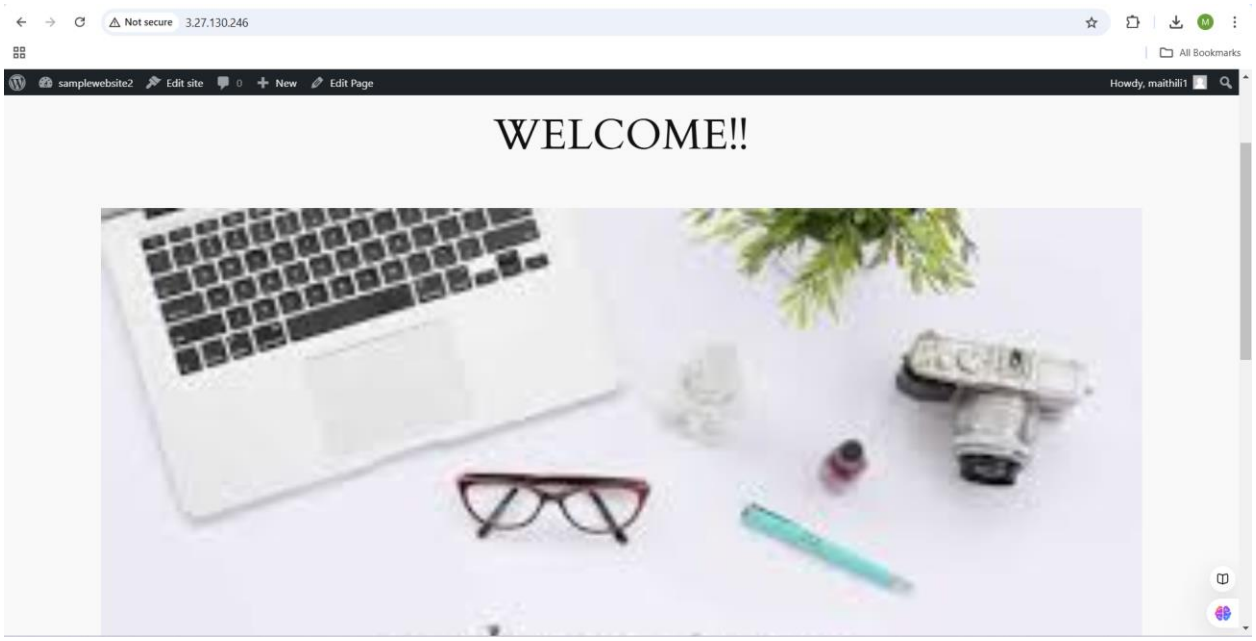
For MySQL instance:-

```
ubuntu@ip-172-31-17-76:~$ history
    1  sudo apt update
    2  sudo apt install mysql-server -y
    3  sudo mysql
    4  sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
    5  sudo systemctl restart mysql
    6  history
ubuntu@ip-172-31-17-76:~$
```

For Wordpress instance:-

```
ubuntu@ip-172-31-24-160:/var/www/html$ history
    1  sudo mv /var/www/html/wordpress/* /var/www/html/
    2  cd /var/www/html/
    3  sudo rm /var/www/html/index.html
    4  sudo chown -R www-data:www-data /var/www/html
    5  sudo chmod -R 755 /var/www/html
    6  sudo systemctl restart apache2
    7  history
ubuntu@ip-172-31-24-160:/var/www/html$
```

It appears like this:-



- Resources referred to complete the task include:- YouTube tutorial- https://youtu.be/8Uofkq718n8?si=GgaeV5LoFh9U19hR