

TITLE OF THE PROJECT:

DEVELOPING AN ONLINE SHOPING WEBSITE USING AWS

SERVICES USED:

- AWS EC2-for launching virtual server
- AWS RDS (mysql)-for database
- AWS Elastic beanstalk -for application development
- AWS CLOUD WATCH-for server monitoring
- AWS SNS-for notifications
- AWS VPC-for creating virtual cloud,subnets

OBJECTIVE :

Proper hosting of a online shopping website in an webserver using aws services.

STEPS:

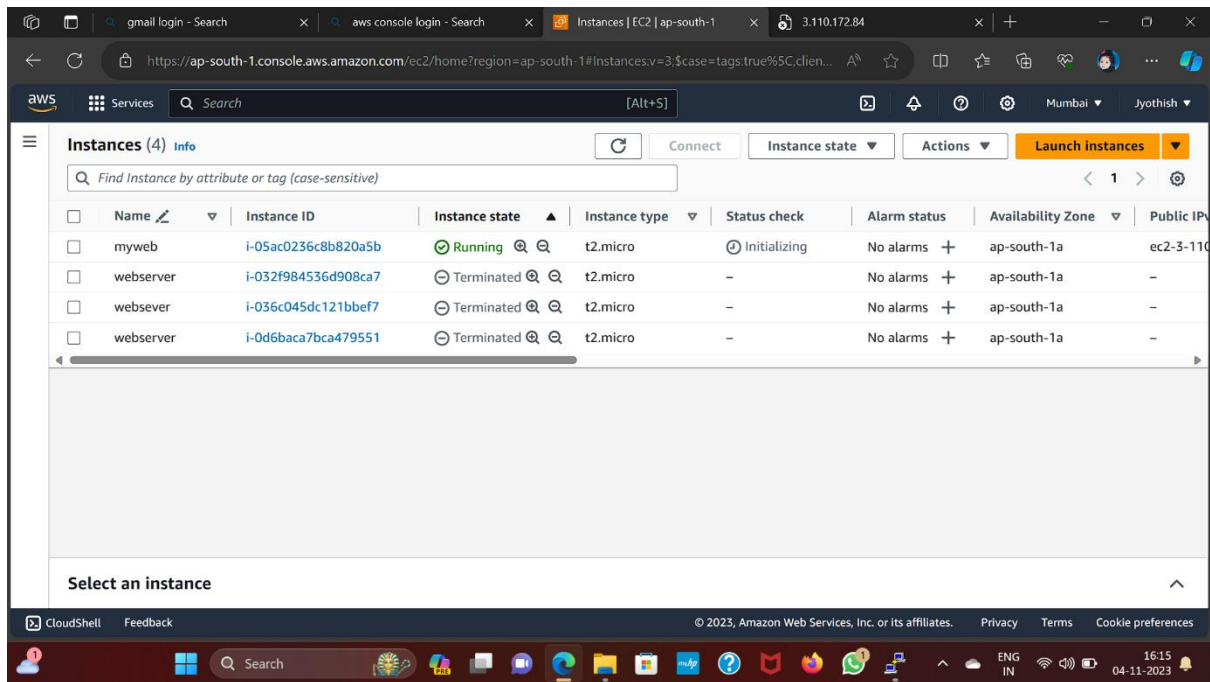
1. Developing web application
2. Launching web server
3. Installing required softwares(appache,mysql,php,...)
4. Connecting to cloud watch to continuous monitoring
5. Launching SNS service to update the admin about status of server
6. Creating database(mysql)
7. Launching RDS server
8. Output of online shopping site with good health

Screen shots of all steps are given below:

PROBLEM STATEMENT 1

Launching a web server:

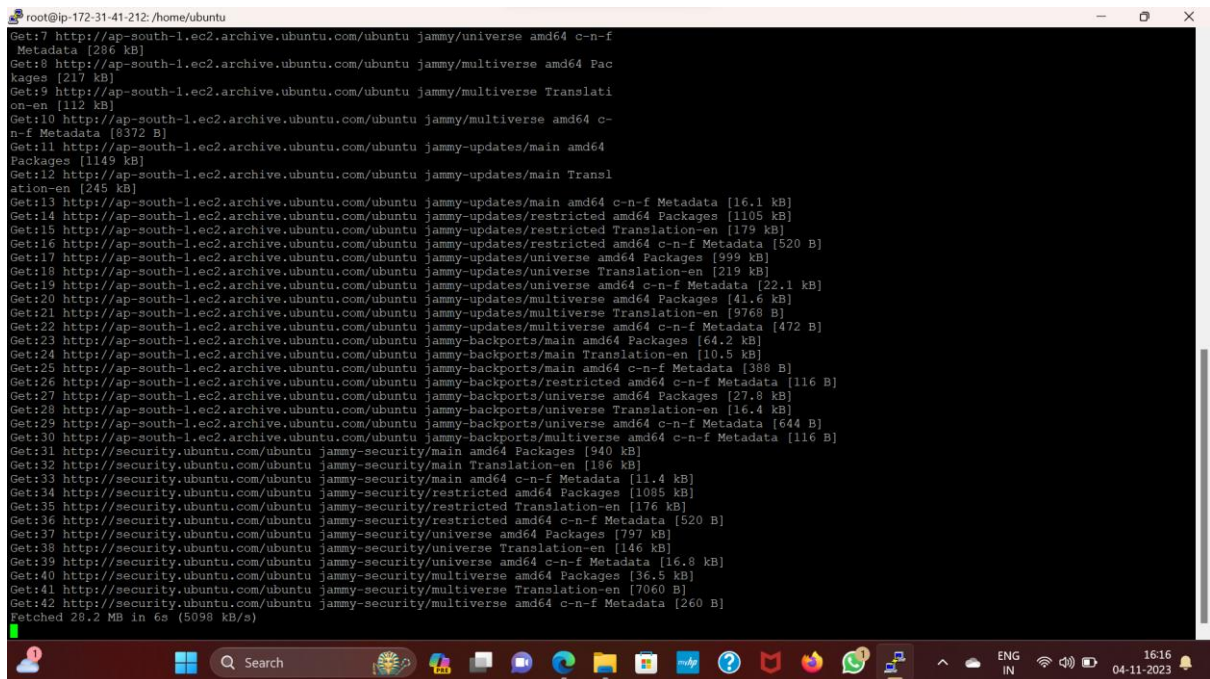
We use ubuntu server to host a site



The screenshot shows the AWS Management Console 'Instances' page for the 'ap-south-1' region. The table lists four instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
myweb	i-05ac0236c8b820a5b	Running	t2.micro	Initializing	No alarms	ap-south-1a	ec2-3-110
webserver	i-032f984536d908ca7	Terminated	t2.micro	-	No alarms	ap-south-1a	-
websever	i-036c045dc121bbe7	Terminated	t2.micro	-	No alarms	ap-south-1a	-
webserver	i-0d6baca7bca479551	Terminated	t2.micro	-	No alarms	ap-south-1a	-

Below the table, there is a 'Select an instance' button. The bottom of the console shows the Windows taskbar with the date 04-11-2023 and time 16:15.



The screenshot shows a terminal window with the output of the 'apt-get update' command. The output lists various Ubuntu repositories and their package lists, including 'jammy/universe', 'jammy/multiverse', 'jammy-updates/main', 'jammy-updates/multiverse', 'jammy-backports/main', 'jammy-backports/multiverse', 'jammy-security/main', 'jammy-security/multiverse', and 'jammy-security/universe'. The terminal shows the progress of downloading package lists and the total size of the data fetched (28.2 MB in 6s).

Installing required softwares:

- Apache
- Mysql
- Php

```
root@ip-172-31-41-212:/home/ubuntu
Preparing to unpack .../03-libaprutil1-ldap 1.6.1-5ubuntu4.22.04.2_amd64.deb ...
Unpacking libaprutil1-ldap:amd64 (1.6.1-5ubuntu4.22.04.2) ...
Selecting previously unselected package liblua5.3-0:amd64.
Preparing to unpack .../04-liblua5.3-0 5.3.6-1build1_amd64.deb ...
Unpacking liblua5.3-0:amd64 (5.3.6-1build1) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../05-apache2-bin 2.4.52-1ubuntu4.6_amd64.deb ...
Unpacking apache2-bin (2.4.52-1ubuntu4.6) ...
Selecting previously unselected package apache2-data.
Preparing to unpack .../06-apache2-data 2.4.52-1ubuntu4.6_all.deb ...
Unpacking apache2-data (2.4.52-1ubuntu4.6) ...
Selecting previously unselected package apache2-utils.
Preparing to unpack .../07-apache2-utils 2.4.52-1ubuntu4.6_amd64.deb ...
Unpacking apache2-utils (2.4.52-1ubuntu4.6) ...
Selecting previously unselected package mailcap.
Preparing to unpack .../08-mailcap 3.70+mmulubuntul_all.deb ...
Unpacking mailcap (3.70+mmulubuntul) ...
Selecting previously unselected package mime-support.
Preparing to unpack .../09-mime-support 3.66_all.deb ...
Unpacking mime-support (3.66) ...
Selecting previously unselected package apache2.
Preparing to unpack .../10-apache2 2.4.52-1ubuntu4.6_amd64.deb ...
Unpacking apache2 (2.4.52-1ubuntu4.6) ...
Selecting previously unselected package bzip2.
Preparing to unpack .../11-bzip2 1.0.8-5build1_amd64.deb ...
Unpacking bzip2 (1.0.8-5build1) ...
Selecting previously unselected package ssl-cert.
Preparing to unpack .../12-ssl-cert 1.1.2_all.deb ...
Unpacking ssl-cert (1.1.2) ...
Setting up libapr1:amd64 (1.7.0-8ubuntu0.22.04.1) ...
Setting up bzip2 (1.0.8-5build1) ...
Setting up ssl-cert (1.1.2) ...
Setting up liblua5.3-0:amd64 (5.3.6-1build1) ...
Setting up apache2-data (2.4.52-1ubuntu4.6) ...
Setting up mailcap (3.70+mmulubuntul) ...
Setting up libaprutil1:amd64 (1.6.1-5ubuntu4.22.04.2) ...
Setting up mime-support (3.66) ...
Setting up libaprutil1-ldap:amd64 (1.6.1-5ubuntu4.22.04.2) ...
Setting up libaprutil1-dbd-sqlite3:amd64 (1.6.1-5ubuntu4.22.04.2) ...
Setting up apache2-utils (2.4.52-1ubuntu4.6) ...
Setting up apache2-bin (2.4.52-1ubuntu4.6) ...
Setting up apache2 (2.4.52-1ubuntu4.6) ...
Progress: [ 94%] [#####]
```

```
root@ip-172-31-41-212:/home/ubuntu
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.1-4ubuntu0.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-172-31-41-212:/home/ubuntu# service apache2 start
root@ip-172-31-41-212:/home/ubuntu# service apache2 status
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2023-11-04 10:47:39 UTC; 36s ago
     Docs: https://httpd.apache.org/docs/2.4/
    Main PID: 2244 (apache2)
      Tasks: 55 (limit: 1121)
     Memory: 4.9M
        CPU: 37ms
    CGroup: /system.slice/apache2.service
            └─2244 /usr/sbin/apache2 -k start
              └─2246 /usr/sbin/apache2 -k start
                └─2247 /usr/sbin/apache2 -k start

Nov 04 10:47:39 ip-172-31-41-212 systemd[1]: Starting The Apache HTTP Server...
Nov 04 10:47:39 ip-172-31-41-212 systemd[1]: Started The Apache HTTP Server.
root@ip-172-31-41-212:/home/ubuntu#
```



```
root@ip-172-31-41-212: /var/www/html
mysql-server-core-8.0
0 upgraded, 28 newly installed, 0 to remove and 42 not upgraded.
Need to get 29.6 MB of archives.
After this operation, 243 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mysql-common all 5.8+1.0.8 [7212 B]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-client-core-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [2682 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-client-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [22.7 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libevent-pthreads-2.1-7 amd64 2.1.12-stable-1build3 [7642 B]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libmecab2 amd64 0.996-14build9 [199 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libprotobuf-lite23 amd64 3.12.4-1ubuntu7.22.04.1 [209 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-server-core-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [17.6 MB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-server-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [1438 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libhtml-tagset-perl all 3.20-4 [12.5 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libburi-perl all 5.10-1 [78.8 kB]
Get:11 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libhtml-parser-perl amd64 3.76-1build2 [88.4 kB]
Get:12 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libcgi-pm-perl all 4.54-1 [188 kB]
Get:13 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libfcgi10ldbl amd64 2.4.2-2build2 [28.0 kB]
Get:14 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libfcgi-perl amd64 0.82+ds-1build1 [22.8 kB]
Get:15 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libcgi-fast-perl all 1:2.15-1 [10.5 kB]
Get:16 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libclone-perl amd64 0.45-1build3 [11.0 kB]
Get:17 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libencode-locale-perl all 1.05-1.1 [11.8 kB]
Get:18 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libfcgi-bin amd64 2.4.2-2build2 [11.2 kB]
Get:19 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libhtml-template-perl all 2.97-1.1 [59.1 kB]
Get:20 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libtime-date-perl all 2.3300-2 [34.0 kB]
Get:21 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libhttp-date-perl all 6.05-1 [9920 B]
Get:22 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libio-html-perl all 1.004-2 [15.4 kB]
Get:23 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblwp-mediatypes-perl all 6.04-1 [19.5 kB]
Get:24 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libhttp-message-perl all 6.36-1 [76.8 kB]
Get:25 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mecab-utils amd64 0.996-14build9 [4850 B]
Get:26 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mecab-ipadic all 2.7.0-20070801+main-3 [6718 kB]
Get:27 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mecab-ipadic-utf8 all 2.7.0-20070801+main-3 [4384 B]
Get:28 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-server all 8.0.35-0ubuntu0.22.04.1 [9464 B]
Fetched 29.6 MB in 1s (30.6 MB/s)
Preconfiguring packages ...
Selecting previously unselected package mysql-common.
(Reading database ... 6525 files and directories currently installed.)
Preparing to unpack .../0-mysql-common-5.8+1.0.8_all.deb ...
Unpacking mysql-common (5.8+1.0.8) ...
Selecting previously unselected package mysql-client-core-8.0.
Preparing to unpack .../1-mysql-client-core-8.0_8.0.35-0ubuntu0.22.04.1_amd64.deb ...
Unpacking mysql-client-core-8.0 (8.0.35-0ubuntu0.22.04.1) ...
root@ip-172-31-41-212: /var/www/html
```

```
root@ip-172-31-41-212: /var/www/html
reading /usr/share/mecab/dic/ipadic/Noun.demonst.csv ... 120
reading /usr/share/mecab/dic/ipadic/Symbol.csv ... 208
reading /usr/share/mecab/dic/ipadic/Noun.others.csv ... 151
emitting double-array: 100% |#####|
reading /usr/share/mecab/dic/ipadic/matrix.def ... 1316x1316
emitting matrix : 100% |#####|

done!
update-alternatives: using /var/lib/mecab/dic/ipadic-utf8 to provide /var/lib/mecab/dic/debian (mecab-dictionary) in auto mode
Setting up libhtml-parser-perl:amd64 (3.76-1build2) ...
Setting up libhttp-message-perl (6.36-1) ...
Setting up mysql-server-8.0 (8.0.35-0ubuntu0.22.04.1) ...
update-alternatives: using /etc/mysql/mysql.cnf to provide /etc/mysql/my.cnf (my.cnf) in auto mode
Renaming removed key buffer and myisam-recover options (if present)
mysqld will log errors to /var/log/mysql/error.log
mysqld is running as pid 9501
Created symlink /etc/systemd/system/multi-user.target.wants/mysql.service → /lib/systemd/system/mysql.service.
Setting up libcgi-pm-perl (4.54-1) ...
Setting up libhtml-template-perl (2.97-1.1) ...
Setting up mysql-server (8.0.35-0ubuntu0.22.04.1) ...
Setting up libcgi-fast-perl (1:2.15-1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-172-31-41-212: /var/www/html# cd /home/ubuntu/
root@ip-172-31-41-212: /home/ubuntu# ls
lifestyleStore.zip
root@ip-172-31-41-212: /home/ubuntu# mv lifestyleStore.zip /var/www/html/
root@ip-172-31-41-212: /home/ubuntu# ls
root@ip-172-31-41-212: /home/ubuntu# cd /var/www/html
root@ip-172-31-41-212: /var/www/html# ls
lifestyleStore.zip
root@ip-172-31-41-212: /var/www/html#
```

```
root@ip-172-31-41-212: /var/www/html/LifestyleStore
inflating: LifestyleStore/img/camera.jpg
inflating: LifestyleStore/img/cannon_eos.jpg
inflating: LifestyleStore/img/charles.jpg
inflating: LifestyleStore/img/cover.jpg
inflating: LifestyleStore/img/favreleuba.jpg
inflating: LifestyleStore/img/hmt.JPEG
inflating: LifestyleStore/img/HXR.jpg
inflating: LifestyleStore/img/intro-bg 1.jpg
inflating: LifestyleStore/img/lifestyleStore.png
inflating: LifestyleStore/img/olympus.jpg
inflating: LifestyleStore/img/pink.jpg
inflating: LifestyleStore/img/raymond.jpg
inflating: LifestyleStore/img/shirt.jpg
inflating: LifestyleStore/img/sony_dslr.jpeg
inflating: LifestyleStore/img/sony_dslr2.jpeg
inflating: LifestyleStore/img/Thumb2.db
inflating: LifestyleStore/img/titan201.jpg
inflating: LifestyleStore/img/titan301.jpg
inflating: LifestyleStore/img/watch.jpg
inflating: LifestyleStore/index.php
inflating: LifestyleStore/login.php
inflating: LifestyleStore/login_submit.php
inflating: LifestyleStore/logout.php
creating: LifestyleStore/nbproject/
creating: LifestyleStore/nbproject/private/
inflating: LifestyleStore/nbproject/private/private.properties
inflating: LifestyleStore/nbproject/private/private.xml
inflating: LifestyleStore/nbproject/project.properties
inflating: LifestyleStore/nbproject/project.xml
inflating: LifestyleStore/products.php
inflating: LifestyleStore/setting_script.php
inflating: LifestyleStore/settings.php
inflating: LifestyleStore/signup.php
inflating: LifestyleStore/store.sql
inflating: LifestyleStore/success.php
inflating: LifestyleStore/user_registration_script.php
root@ip-172-31-41-212:/var/www/html# ls
LifestyleStore LifestyleStore.zip
root@ip-172-31-41-212:/var/www/html# cd LifestyleStore
root@ip-172-31-41-212:/var/www/html/LifestyleStore# ls
bootstrap      cart_remove.php  css              img              login_submit.php  products.php      signup.php      user_registration_script.php
cart.php        check_if_added.php  header.php      index.php        logout.php         setting_script.php  store.sql      success.php
cart_add.php    connection.php     header2.php     login.php        nbproject          settings.php
root@ip-172-31-41-212:/var/www/html/LifestyleStore#
```

DATABASE :

Created using AWS RDS and accessing in databse server

```
root@ip-172-31-41-212: /etc/apache2/sites-available
root@ip-172-31-41-212:/etc/apache2/sites-available# mysql -h localhost -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.35-0ubuntu0.22.04.1 (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> ALTER USER 'root'@'localhost' IDENTIFIED BY 'leo';
Query OK, 0 rows affected (0.04 sec)

mysql> exit
Bye
root@ip-172-31-41-212:/etc/apache2/sites-available# mysql -h localhost -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.35-0ubuntu0.22.04.1 (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> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.04 sec)

mysql> create database store;
```

```
root@ip-172-31-41-212: /var/www/html/LifestyleStore
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)
Copyright (c) 2000, 2023, Oracle and/or its affiliates.

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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> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| store |
| sys |
+-----+
5 rows in set (0.00 sec)

mysql> show tables store;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'store' at line 1
mysql> use store;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables store;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'store' at line 1
mysql> show tables;
+-----+
| Tables_in_store |
+-----+
| items |
| users |
| users_items |
+-----+
3 rows in set (0.00 sec)

mysql>
```

```
root@ip-172-31-41-212: /var/www/html/LifestyleStore

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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> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| store |
| sys |
+-----+
5 rows in set (0.00 sec)

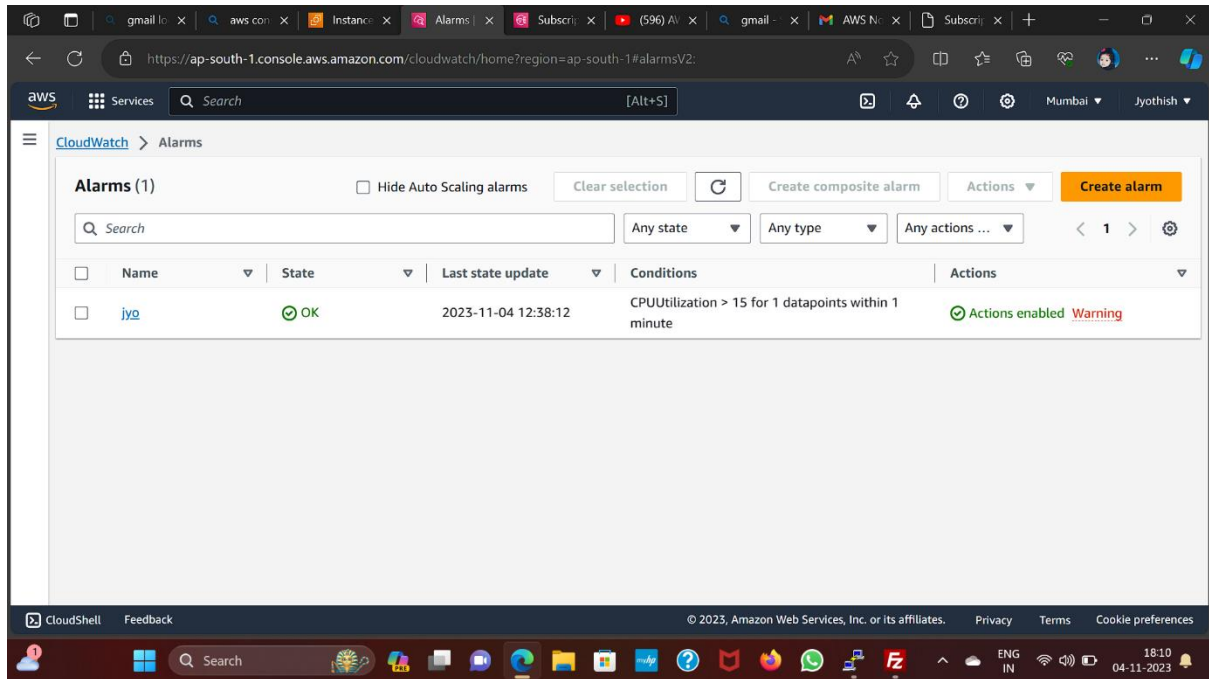
mysql> show tables store;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'store' at line 1
mysql> use store;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables store;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'store' at line 1
mysql> show tables;
+-----+
| Tables_in_store |
+-----+
| items |
| users |
| users_items |
+-----+
3 rows in set (0.00 sec)

mysql> exit;
Bye
root@ip-172-31-41-212:/var/www/html/LifestyleStore# service apache2 restart
root@ip-172-31-41-212:/var/www/html/LifestyleStore#
```

PROBLE STATEMENT 2

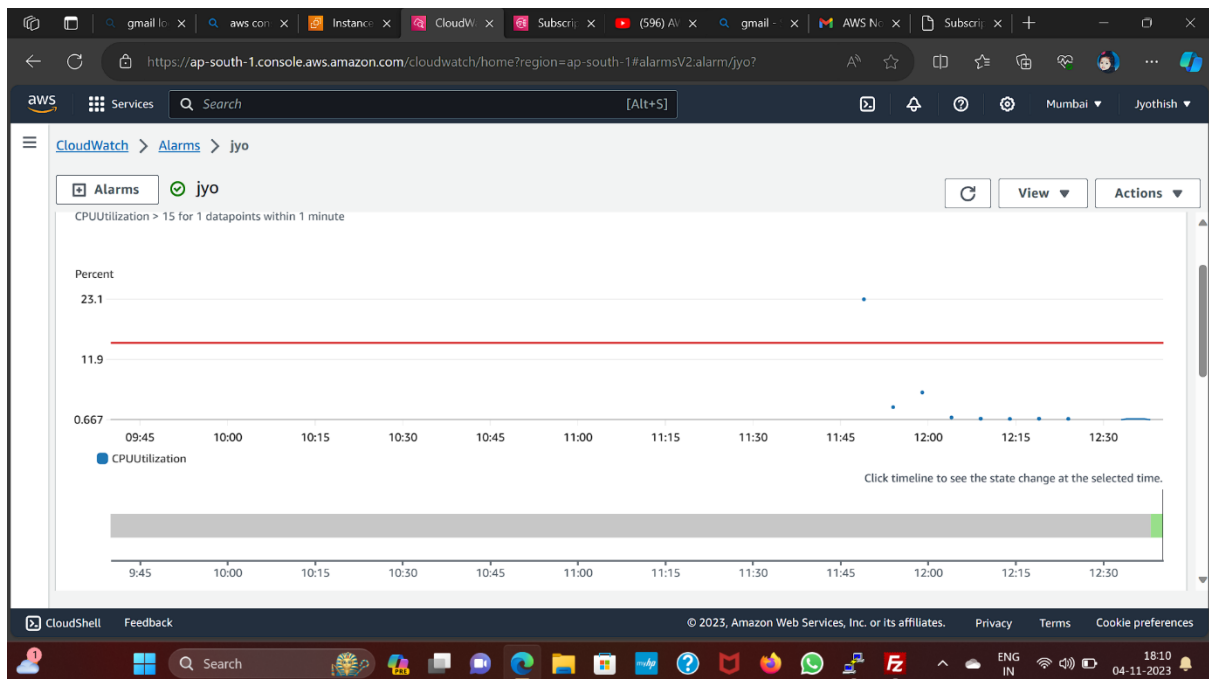
Cloud watch:



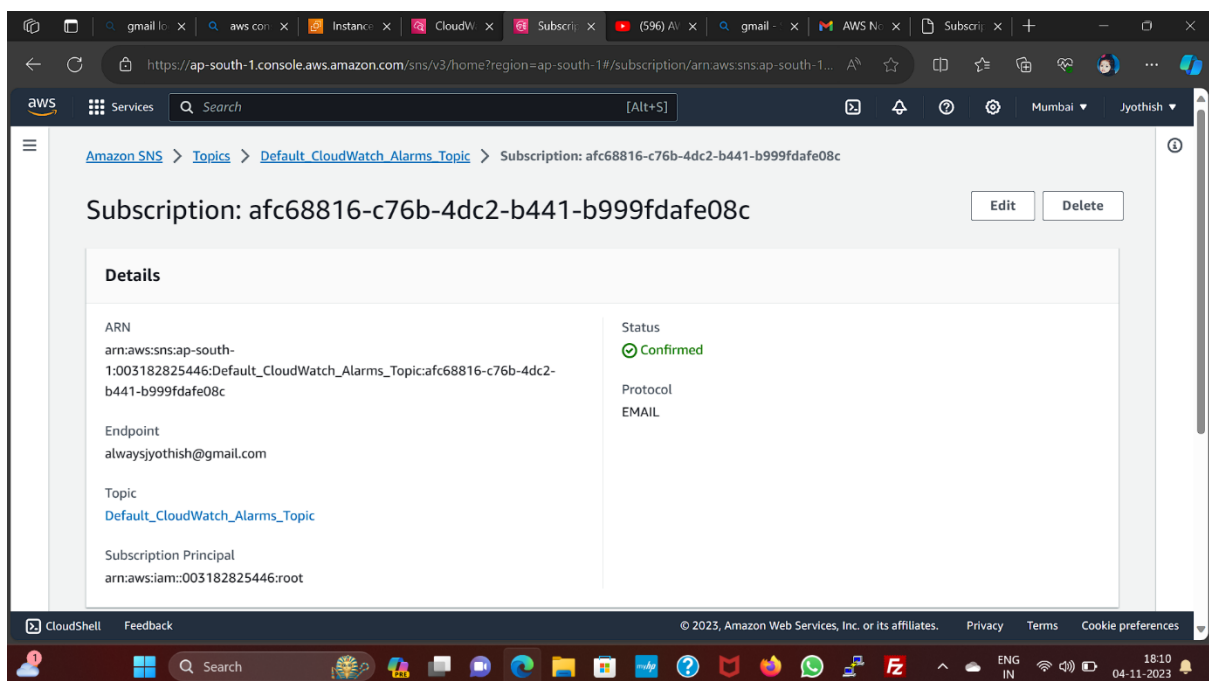
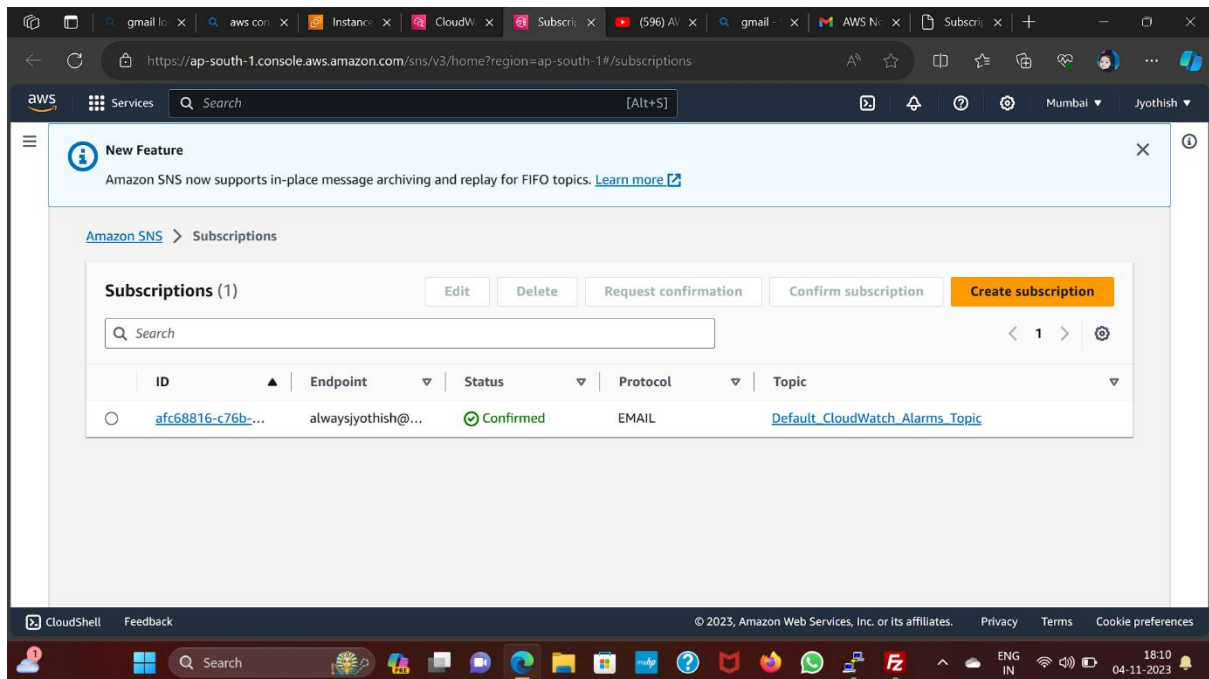
The screenshot shows the AWS CloudWatch Alarms console. The URL is <https://ap-south-1.console.aws.amazon.com/cloudwatch/home?region=ap-south-1#alarmsV2>. The page displays a list of alarms under the heading "Alarms (1)". There is a search bar and filters for "Any state", "Any type", and "Any actions ...". A table lists the alarms:

Name	State	Last state update	Conditions	Actions
jyo	OK	2023-11-04 12:38:12	CPUUtilization > 15 for 1 datapoints within 1 minute	Actions enabled Warning

The bottom of the screenshot shows the Windows taskbar with the time 18:10 on 04-11-2023.

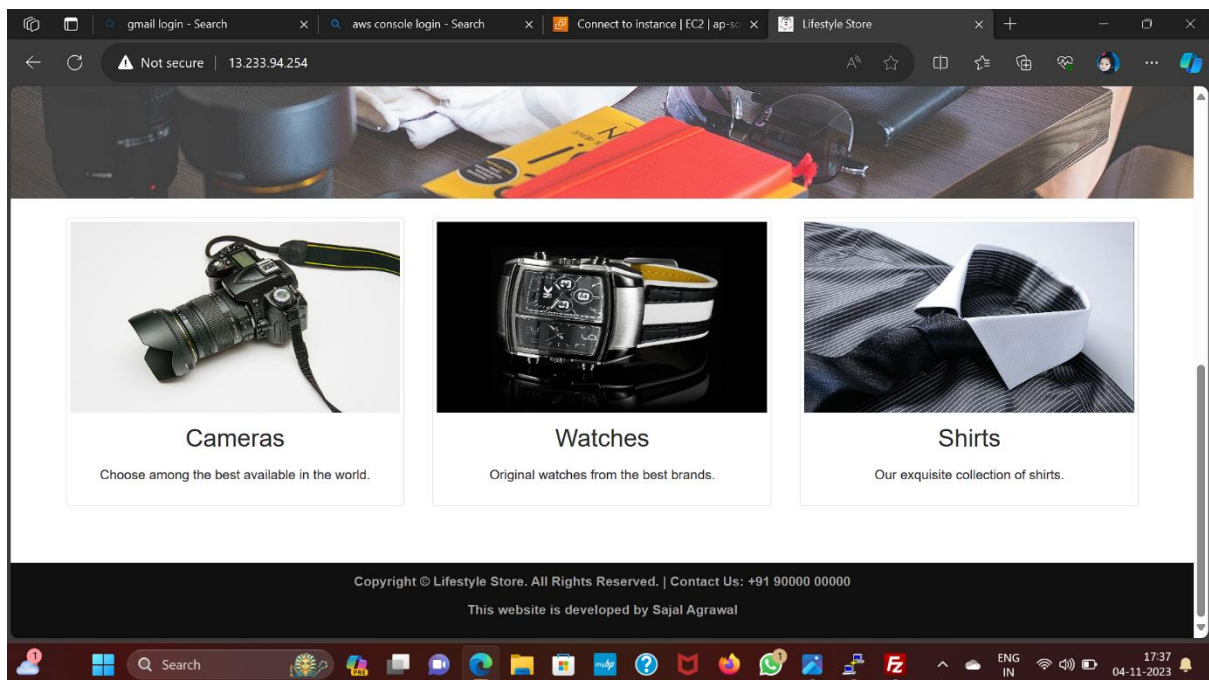
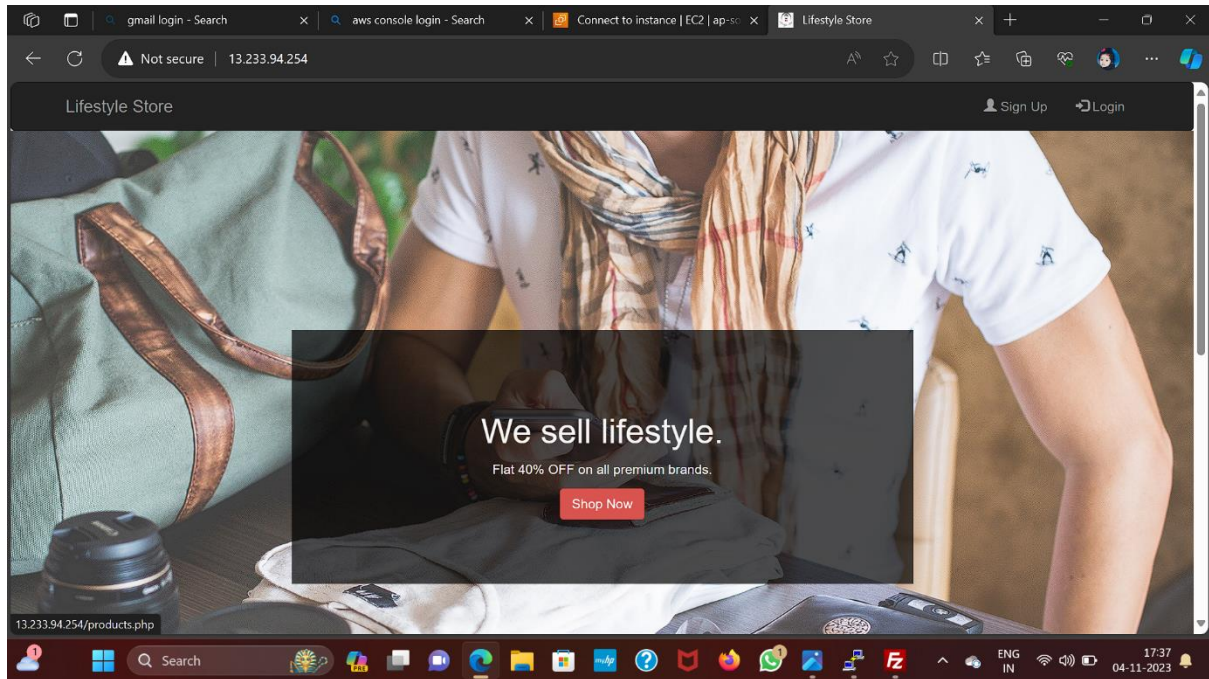


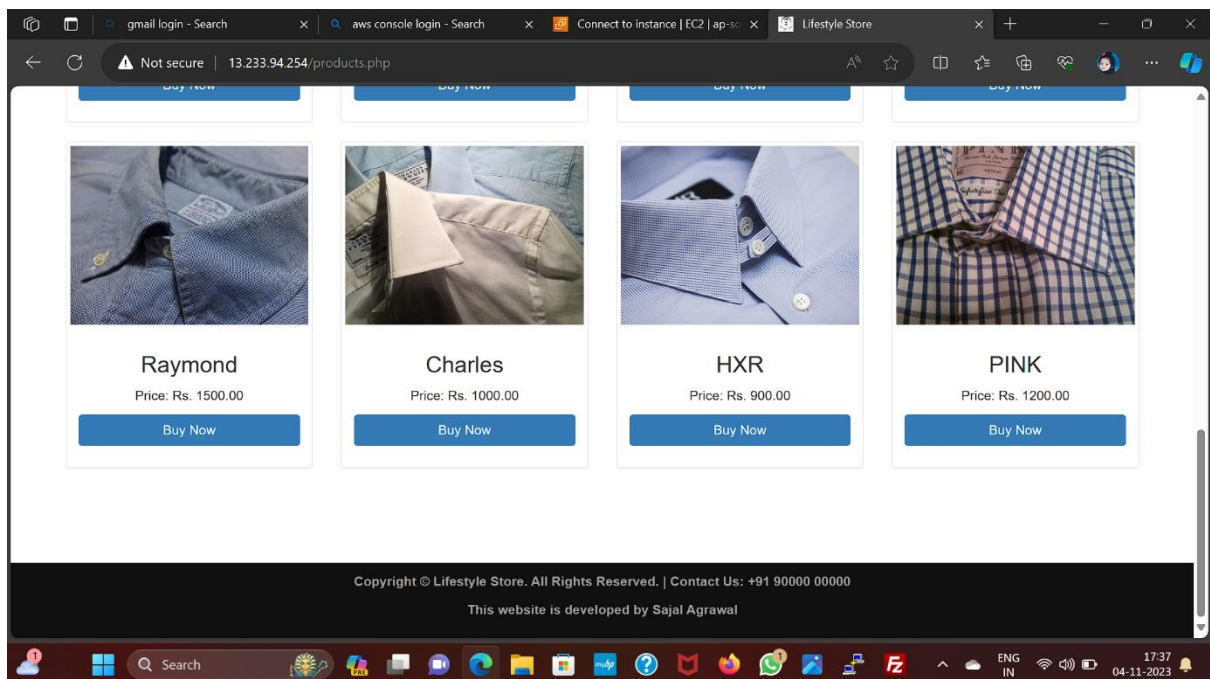
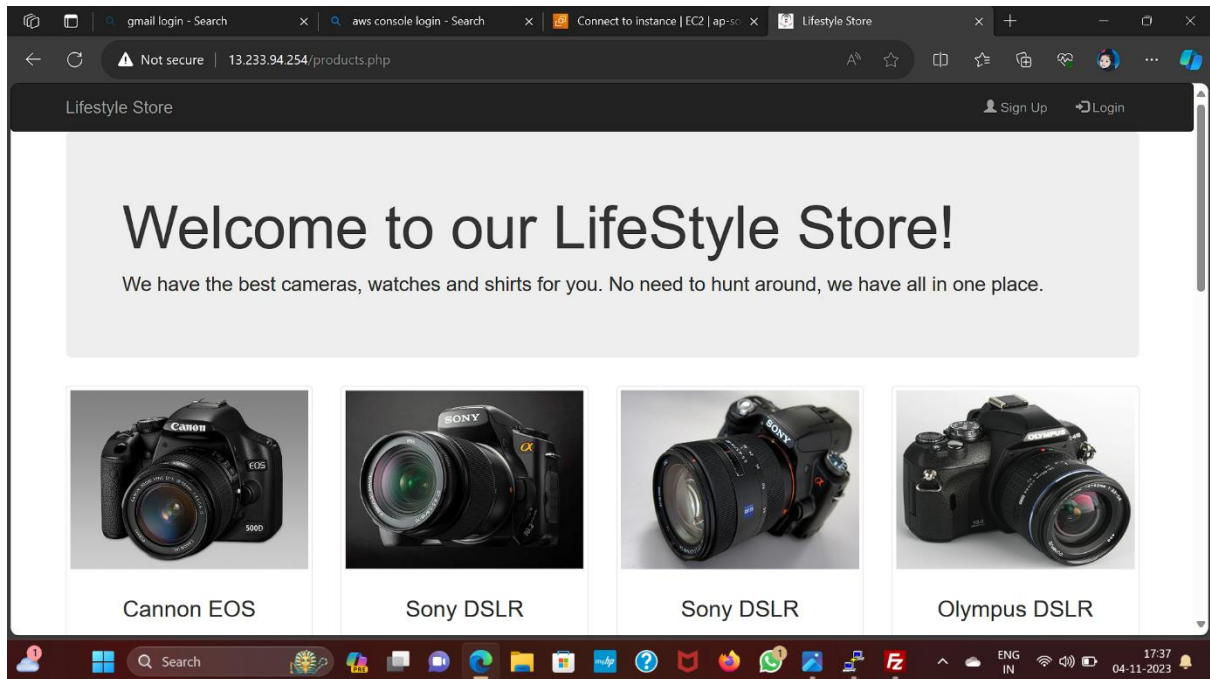
Simple Notification Service:



Final Outcome of The Project:

Here some sanpshots of healthy website using ip 13.233.94.254





Final Declartion:

The website is hosted successfully in web server and I am very thankful to our mentor who guide me to complete this .Finalli I am decalred that this is completely developed and hosted with my personal knowledge only.

THANK YOU TEACHNOOK