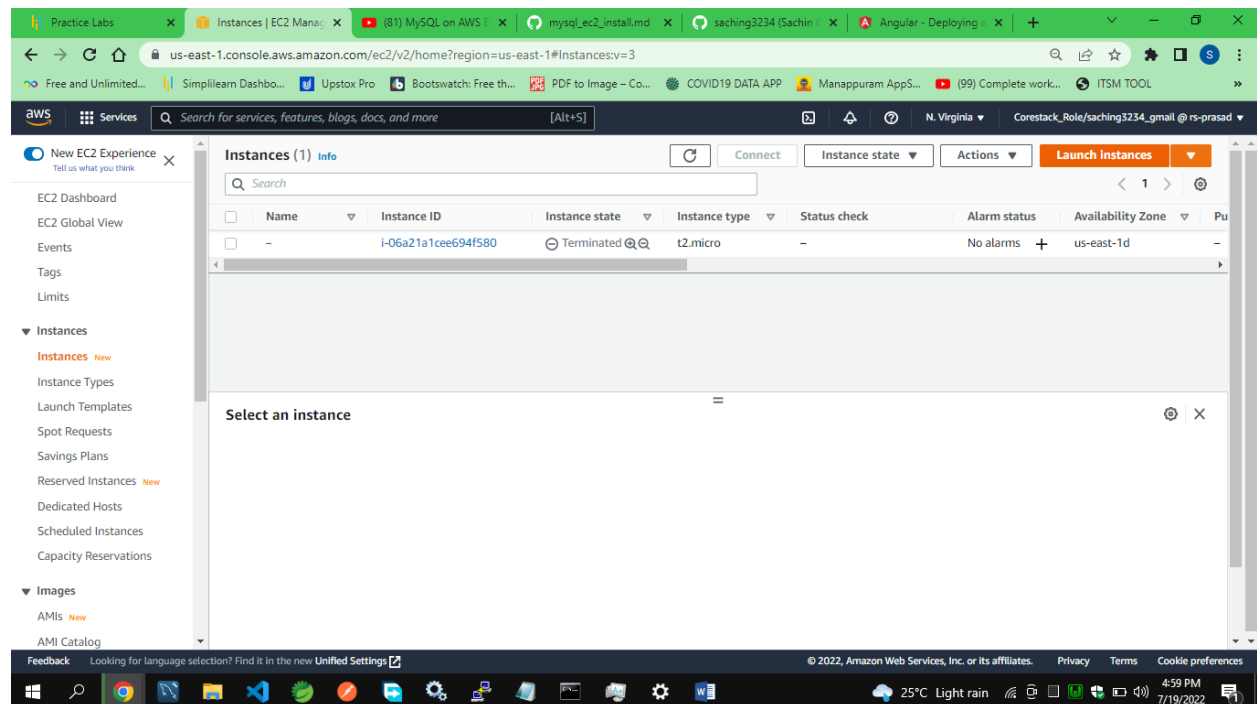


Full Name	Sachin Rangnath Gawade
Batch	Dec 2020
Project Title	CI/CD Deployment for Springboot Application.
Project Submission Date	19-July – 2022
Git Hub Project Link	https://github.com/saching3234/Aws-Final-Build-And-Documentation

1.Creating the new Ec2 linux instance:-



2. selected Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type :-

This launch experience will soon be reaching end of life. We've introduced a new launch experience with new and updated features. You can opt in now by choosing Opt in to the new experience. Currently, you can opt out to the old experience at any time. Please send us your feedback about the new experience so that we can continue to improve it. [Opt in to the new experience](#)

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Search for an AMI by entering a search term e.g. "Windows"

Quick Start

My AMIs

AWS Marketplace

Community AMIs

☐ Free tier only

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type - ami-0cf7528ff583bf9a (64-bit x86) / ami-00bf5f1c358708486 (64-bit Arm) [Select](#)

Amazon Linux 2 comes with five years support. It provides Linux kernel 5.10 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is now under maintenance only mode and has been removed from this wizard.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

☒ 64-bit (x86) ☐ 64-bit (Arm)

Amazon Linux 2 AMI (HVM) - Kernel 4.14, SSD Volume Type - ami-065efef2c739d613b (64-bit x86) / ami-09f0bb50202ca06b0 (64-bit Arm) [Select](#)

Feedback Looking for language selection? Find it in the new Unified Settings

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25°C Light rain 5:01 PM 7/19/2022

3. selected t2.micro Free tier eligible

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: [All instance families](#) [Current generation](#) [Show/Hide Columns](#)

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

Feedback Looking for language selection? Find it in the new Unified Settings

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25°C Light rain 5:02 PM 7/19/2022

4. Configure Instance Details :-

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances: 1 [Launch into Auto Scaling Group](#)

Purchasing option: ☐ Request Spot instances

Network: vpc-029cdebe9e111a51e (default) [Create new VPC](#)

Subnet: No preference (default subnet in any Availability Zone) [Create new subnet](#)

Auto-assign Public IP: Use subnet setting (Enable)

Hostname type: Use subnet setting (IP name)

DNS Hostname: ☐ Enable IP name IPv4 (A record) DNS requests
☒ Enable resource-based IPv4 (A record) DNS requests
☐ Enable resource-based IPv6 (AAAA record) DNS requests

Placement group: ☐ Add instance to placement group

Capacity Reservation: Open

Domain join directory: No directory

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

5. Adding Storage:-

Step 4: Add Storage

edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-08f1069dfde2007ba	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Shared file systems

You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

[Add file system](#)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

6. Adding Tags-

The screenshot shows the 'Add Tags' step (Step 5) of the AWS EC2 instance wizard. The breadcrumb trail at the top indicates the sequence: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, 7. Review. The main heading is 'Step 5: Add Tags'. Below it, a text box explains that a tag consists of a case-sensitive key-value pair and that tags can be applied to instances and volumes. A table with four columns is shown: 'Key' (128 characters maximum), 'Value' (256 characters maximum), 'Instances' (with an info icon), 'Volumes' (with an info icon), and 'Network Interfaces' (with an info icon). One tag is already added: 'name' as the key and 'linuxec2instance' as the value, with checkboxes for 'Instances', 'Volumes', and 'Network Interfaces' all checked. There is an 'Add another tag' button with a note '(Up to 50 tags maximum)'. At the bottom right, there are buttons for 'Cancel', 'Previous', 'Review and Launch', and 'Next: Configure Security Group'. The footer of the console shows the date and time as 5:07 PM on 7/19/2022.

7. Setting the firewall rules

The screenshot shows the 'Configure Security Group' step (Step 6) of the AWS EC2 instance wizard. The breadcrumb trail at the top indicates the sequence: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, 7. Review. The main heading is 'Step 6: Configure Security Group'. Below it, a text box explains that a security group is a set of firewall rules that control traffic to and from an instance. Under 'Assign a security group', the 'Create a new security group' option is selected. The 'Security group name' is 'launch-wizard-2' and the 'Description' is 'launch-wizard-2 created 2022-07-19T17:08:27.464+05:30'. A table lists the configured rules:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
MYSQL/Aurora	TCP	3306	Custom CIDR, IP or Security Group	e.g. SSH for Admin Desktop
Custom TCP	TCP	8080	Custom 0.0.0.0/0:::0	e.g. SSH for Admin Desktop
Custom TCP	TCP	4200	Custom CIDR, IP or Security Group	e.g. SSH for Admin Desktop

Below the table is an 'Add Rule' button. A warning message states: 'Warning: Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' At the bottom right, there are buttons for 'Cancel', 'Previous', and 'Review and Launch'. The footer of the console shows the date and time as 5:10 PM on 7/19/2022.

8. Launching the instance

Step 7: Review Instance Launch

Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups

Security group name: launch-wizard-2
Description: launch-wizard-2 created 2022-07-19T17:08:27.464+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	
MySQL/Aurora	TCP	3306	0.0.0.0/0	
MySQL/Aurora	TCP	3306	:::0	
Custom TCP Rule	TCP	8080	0.0.0.0/0	
Custom TCP Rule	TCP	8080	:::0	
Custom TCP Rule	TCP	4200	0.0.0.0/0	
Custom TCP Rule	TCP	4200	:::0	

Cancel Previous Launch

9. Creating the key for login the instance-

Step 7: Review Instance Launch

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)
t2.micro	-	1	1

Security Groups

Security group name: launch-wizard-2
Description: launch-wizard-2 created 2022-07-19T17:08:27.464+05:30

Type	Protocol
SSH	TCP
MySQL/Aurora	TCP
MySQL/Aurora	TCP
Custom TCP Rule	TCP

Select an existing key pair or create a new key pair

A key pair consists of a public key that AWS stores, and a private key file that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance. Amazon EC2 supports ED25519 and RSA key pair types.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about removing existing key pairs from a public AMI.

Create a new key pair
Key pair type: RSA ED25519
Key pair name: mylinuxmachine
Download Key Pair

You have to download the private key file (*.pem file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after it's created.

Cancel Previous Launch

10. Running Instance:-

The screenshot displays the AWS Management Console for the 'us-east-1' region. The 'Instances' page shows a single EC2 instance with the ID 'i-0787c63e3cb6e573c' in a 'Running' state. The instance is of type 't2.micro' and is located in the 'us-east-1d' availability zone. The 'Status check' shows 'Initializing'. The 'Instance summary' section provides details about the instance, including its ID, public and private IP addresses, and DNS information.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP address
-	i-0787c63e3cb6e573c	Running	t2.micro	Initializing	No alarms	us-east-1d	3.86.113.220

Instance: i-0787c63e3cb6e573c

Instance summary info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0787c63e3cb6e573c	3.86.113.220 open address	172.31.83.98

IPV6 address: Instance state: Public IPv4 DNS:

11. Connecting to the instance

The screenshot shows a terminal window with the following output:

```
ec2-user@ip-172-31-83-98:~$ ssh -i mylinuxmachine.pem ec2-user@ip-172-31-83-98
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"

      _ _ _ _ _
     /   ( _ _ )
    / _ _ (   _ )
   / _ _ \| _ _ )
  / _ _ \| _ _ )
 / _ _ \| _ _ )
/_ _ _ \| _ _ )

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
5 package(s) needed for security, out of 14 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-83-98 ~]$
```

12. Installing the Mysql Server-

#mysql installation commands-

#going to root user

sudo su

sudo yum install -y https://dev.mysql.com/get/mysql80-community-release-el7-3.noarch.rpm

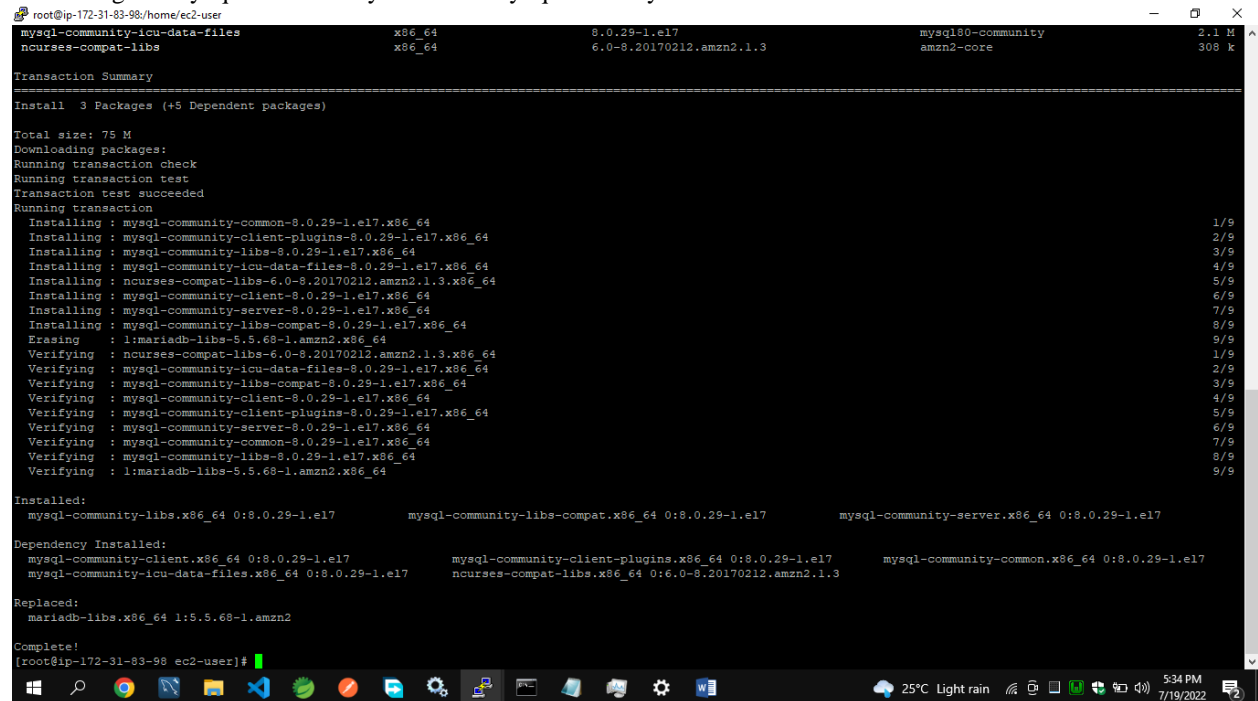
sudo amazon-linux-extras install epel -y

sudo yum install -y mysql-community-server

#imported GPG-KEY:

sudo rpm --import https://repo.mysql.com/RPM-GPG-KEY-mysql-2022

#Installing the mysql serversudo yum install mysql-server -y



```
root@ip-172-31-83-98:/home/ec2-user
mysql-community-icu-data-files      x86_64      8.0.29-1.el7      mysql80-community      2.1 M
ncurses-compat-libs                x86_64      6.0-8.20170212.amzn2.1.3      amzn2-core      308 k

Transaction Summary
-----
Install 3 Packages (+5 Dependent packages)

Total size: 75 M
Downloading packages:
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Installing : mysql-community-common-8.0.29-1.el7.x86_64      1/9
Installing : mysql-community-client-plugins-8.0.29-1.el7.x86_64      2/9
Installing : mysql-community-libs-8.0.29-1.el7.x86_64      3/9
Installing : mysql-community-icu-data-files-8.0.29-1.el7.x86_64      4/9
Installing : ncurses-compat-libs-6.0-8.20170212.amzn2.1.3.x86_64      5/9
Installing : mysql-community-client-8.0.29-1.el7.x86_64      6/9
Installing : mysql-community-server-8.0.29-1.el7.x86_64      7/9
Installing : mysql-community-libs-compat-8.0.29-1.el7.x86_64      8/9
Erasing   : l:mariadb-libs-5.5.68-1.amzn2.x86_64      9/9
Verifying : ncurses-compat-libs-6.0-8.20170212.amzn2.1.3.x86_64      1/8
Verifying : mysql-community-icu-data-files-8.0.29-1.el7.x86_64      2/8
Verifying : mysql-community-libs-compat-8.0.29-1.el7.x86_64      3/8
Verifying : mysql-community-client-8.0.29-1.el7.x86_64      4/8
Verifying : mysql-community-client-plugins-8.0.29-1.el7.x86_64      5/8
Verifying : mysql-community-server-8.0.29-1.el7.x86_64      6/8
Verifying : mysql-community-common-8.0.29-1.el7.x86_64      7/8
Verifying : mysql-community-libs-8.0.29-1.el7.x86_64      8/8
Verifying : l:mariadb-libs-5.5.68-1.amzn2.x86_64      9/9

Installed:
mysql-community-libs.x86_64 0:8.0.29-1.el7      mysql-community-libs-compat.x86_64 0:8.0.29-1.el7      mysql-community-server.x86_64 0:8.0.29-1.el7

Dependency Installed:
mysql-community-client.x86_64 0:8.0.29-1.el7      mysql-community-client-plugins.x86_64 0:8.0.29-1.el7      mysql-community-common.x86_64 0:8.0.29-1.el7
mysql-community-icu-data-files.x86_64 0:8.0.29-1.el7      ncurses-compat-libs.x86_64 0:6.0-8.20170212.amzn2.1.3

Replaced:
mariadb-libs.x86_64 1:5.5.68-1.amzn2

Complete!
[root@ip-172-31-83-98 ec2-user]#
```

13. Creating the new user in mysql.

#Starting the mysql server

sudo systemctl start mysqld

sudo systemctl enable mysqld

#Get the password for the root user:

sudo grep 'temporary password' /var/log/mysqld.log

#Login to MySQL:

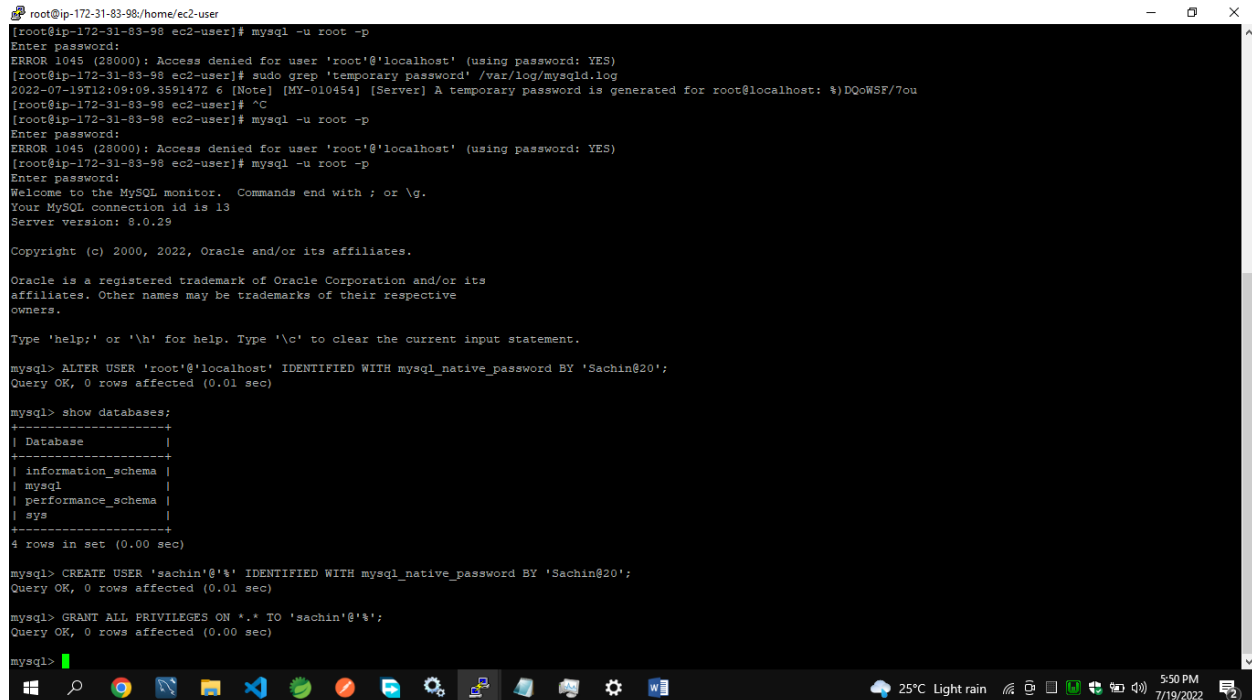
mysql -u root -p

#You have to change the root user's password before you can do anything

```
ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'Sachin@20';
```

```
CREATE USER 'sachin'@'%' IDENTIFIED WITH mysql_native_password BY 'Sachin@20';
```

```
GRANT ALL PRIVILEGES ON *.* TO 'sachin'@'%';
```



The screenshot shows a terminal window with the following content:

```
root@ip-172-31-83-98:/home/ec2-user
[root@ip-172-31-83-98 ec2-user]# mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[root@ip-172-31-83-98 ec2-user]# sudo grep 'temporary password' /var/log/mysql.log
2022-07-19T12:09:09.359147Z 6 [Note] [MY-010454] [Server] A temporary password is generated for root@localhost: %DQoWSF/7ou
[root@ip-172-31-83-98 ec2-user]# ^C
[root@ip-172-31-83-98 ec2-user]# mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[root@ip-172-31-83-98 ec2-user]# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.29

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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 WITH mysql_native_password BY 'Sachin@20';
Query OK, 0 rows affected (0.01 sec)

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

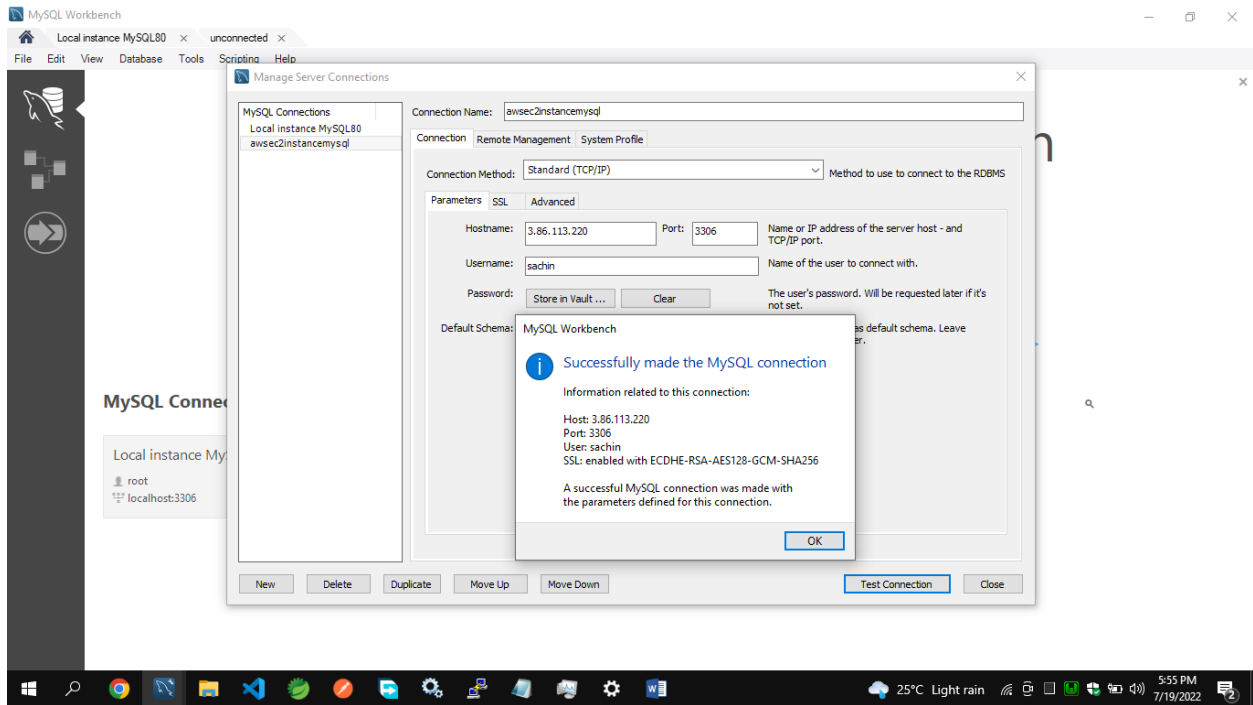
mysql> CREATE USER 'sachin'@'%' IDENTIFIED WITH mysql_native_password BY 'Sachin@20';
Query OK, 0 rows affected (0.01 sec)

mysql> GRANT ALL PRIVILEGES ON *.* TO 'sachin'@'%';
Query OK, 0 rows affected (0.00 sec)

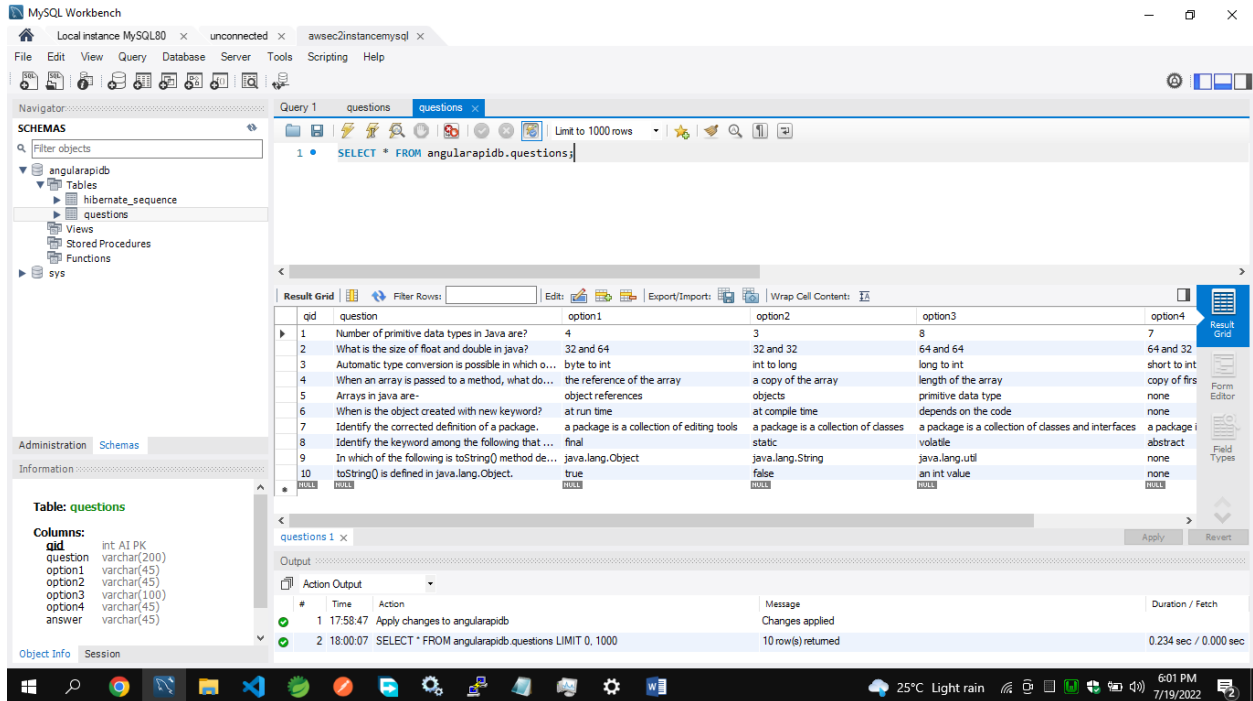
mysql>
```

The terminal window also shows a Windows taskbar at the bottom with various icons and system information: 25°C, Light rain, 5:30 PM, 7/19/2022.

14.Connecting to the mysql server and creating the database



15.Data Imported from local db to ec2 mysql server db



```
ec2-user@ip-172-31-83-98:~$ ssh -i /home/ec2-user/.ssh/important-openssh-key ec2-user@ip-172-31-83-98
Using username "ec2-user".
Authenticating with public key "important-openssh-key"
Last login: Tue Jul 19 12:08:56 2022 from 117.99.240.112

 _ _ _ _ _
| | | | |
|_|_|_|_|_|_ Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
5 package(s) needed for security, out of 17 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-83-98 ~]$ mysql -u sachin -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 23
Server version: 8.0.29 MySQL Community Server - GPL

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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 database;
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 'datab
ase' at line 1
mysql> show databases;
+-----+
| Database |
+-----+
| angularapidb |
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.00 sec)

mysql>
```

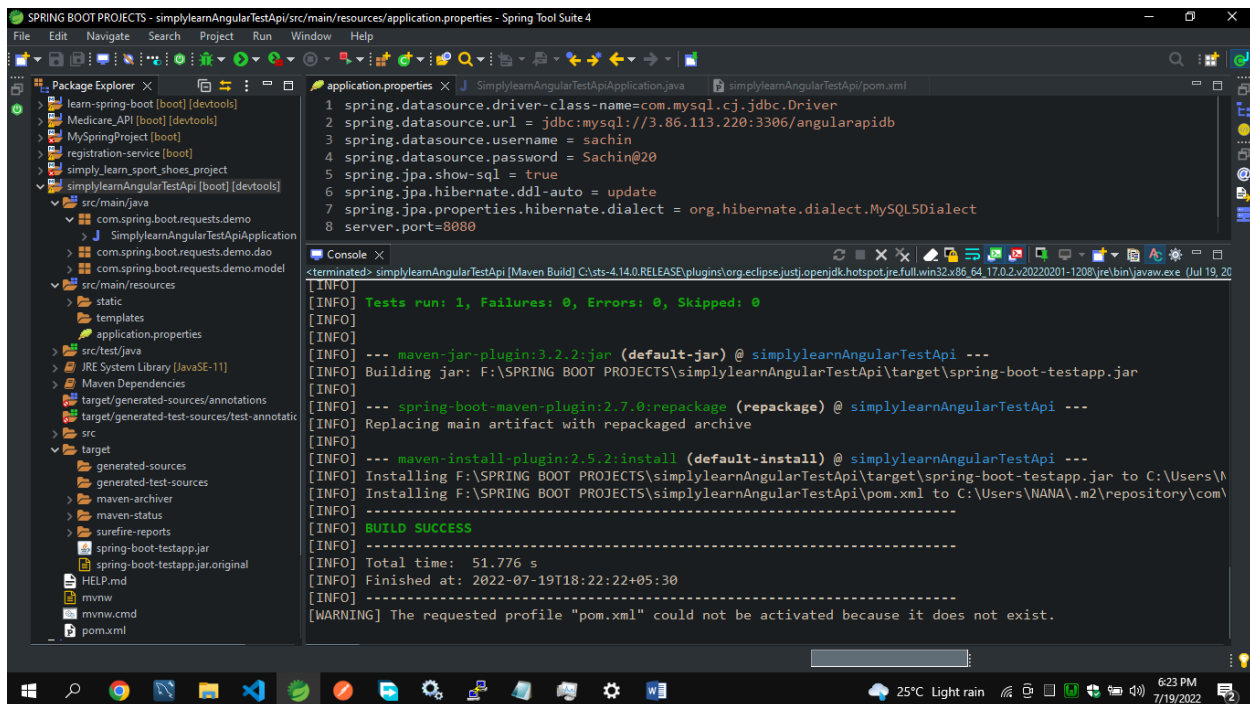
16. Installing the java on ec2

```
sudo amazon-linux-extras install java-openjdk11
```

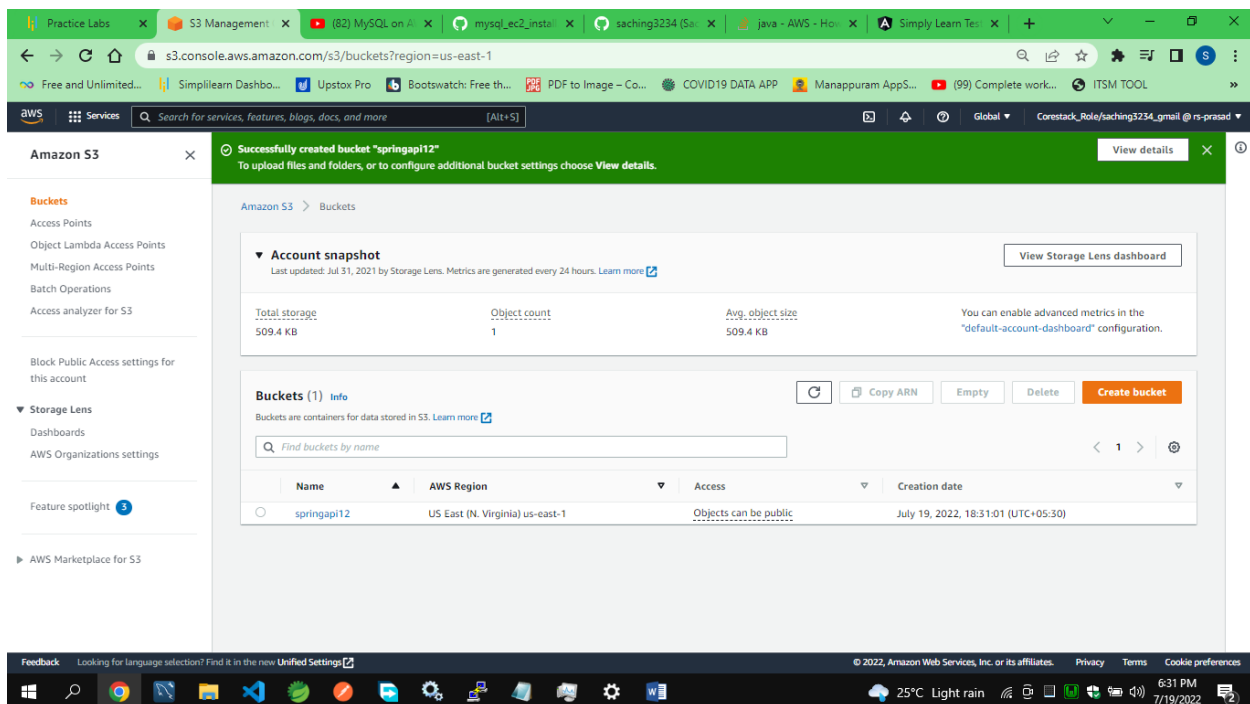
```
ec2-user@ip-172-31-83-98:~$ sudo amazon-linux-extras install java-openjdk11
28 firecracker available [ =0.11 =stable ]
29 golang1.11 available \
   [ =1.11.3 =1.11.11 =1.11.13 =stable ]
30 squid4 available [ =4 =stable ]
32 lustre2.10 available \
   [ =2.10.5 =2.10.8 =stable ]
33 java-openjdk11=latest enabled [ =11 =stable ]
34 lynx available [ =stable ]
35 *kernel-ng available [ =stable ]
36 BCC available [ =0.x =stable ]
37 mono available [ =5.x =stable ]
38 nginx1 available [ =stable ]
39 ruby2.6 available [ =2.6 =stable ]
40 mock available [ =stable ]
41 postgresql11 available [ =11 =stable ]
42 php7.4 available [ =stable ]
43 livepatch available [ =stable ]
44 python3.8 available [ =stable ]
45 haproxy2 available [ =stable ]
46 collectd available [ =stable ]
47 aws-nitro-enclaves-cli available [ =stable ]
48 R4 available [ =stable ]
   _ kernel-5.4 available [ =stable ]
50 selinux-ng available [ =stable ]
51 php8.0 available [ =stable ]
52 tomcat9 available [ =stable ]
53 unbound1.13 available [ =stable ]
54 mariadb10.5 available [ =stable ]
55 kernel-5.10=latest enabled [ =stable ]
56 redis6 available [ =stable ]
57 ruby3.0 available [ =stable ]
58 postgresql12 available [ =stable ]
59 postgresql13 available [ =stable ]
60 mock2 available [ =stable ]
61 dnsmasq2.85 available [ =stable ]
62 kernel-5.15 available [ =stable ]
63 postgresql14 available [ =stable ]
64 firefox available [ =stable ]

† Note on end-of-support. Use 'info' subcommand.
[ec2-user@ip-172-31-83-98 ~]$ java -version
openjdk version "11.0.13" 2021-10-19 LTS
OpenJDK Runtime Environment 18.9 (build 11.0.13+8-LTS)
OpenJDK 64-Bit Server VM 18.9 (build 11.0.13+8-LTS, mixed mode, sharing)
[ec2-user@ip-172-31-83-98 ~]$
```

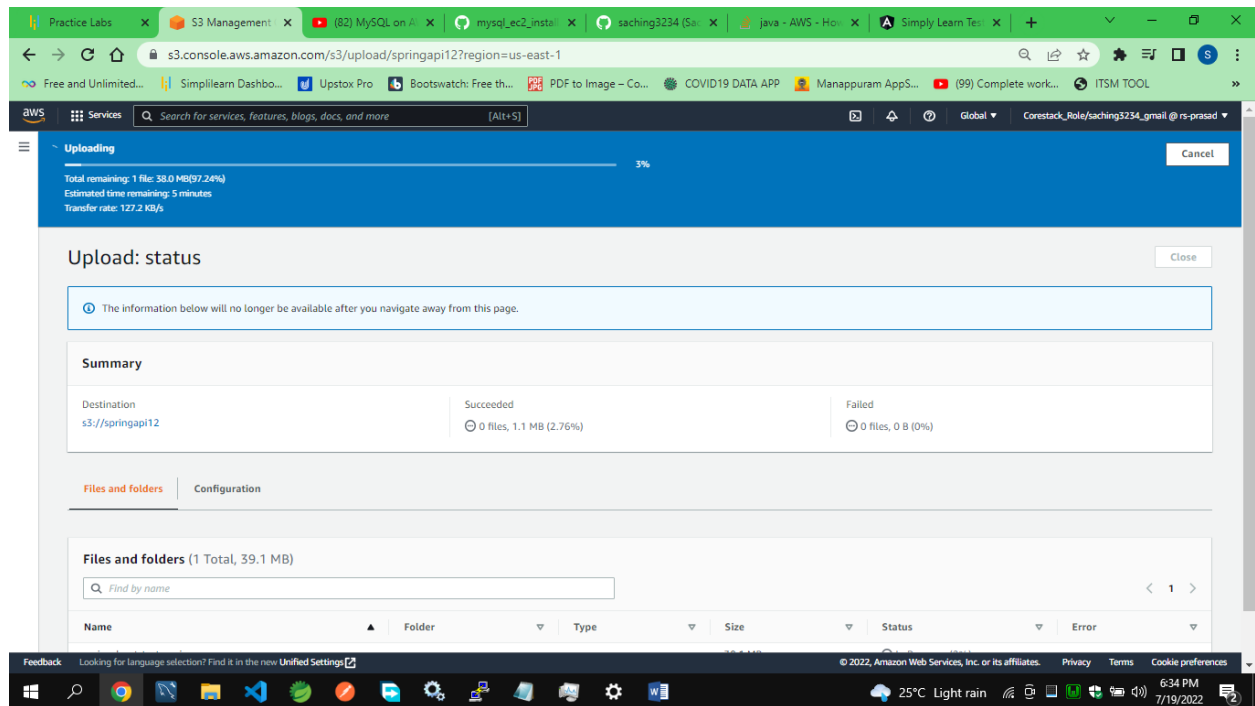
17. Created the final build of java spring boot project



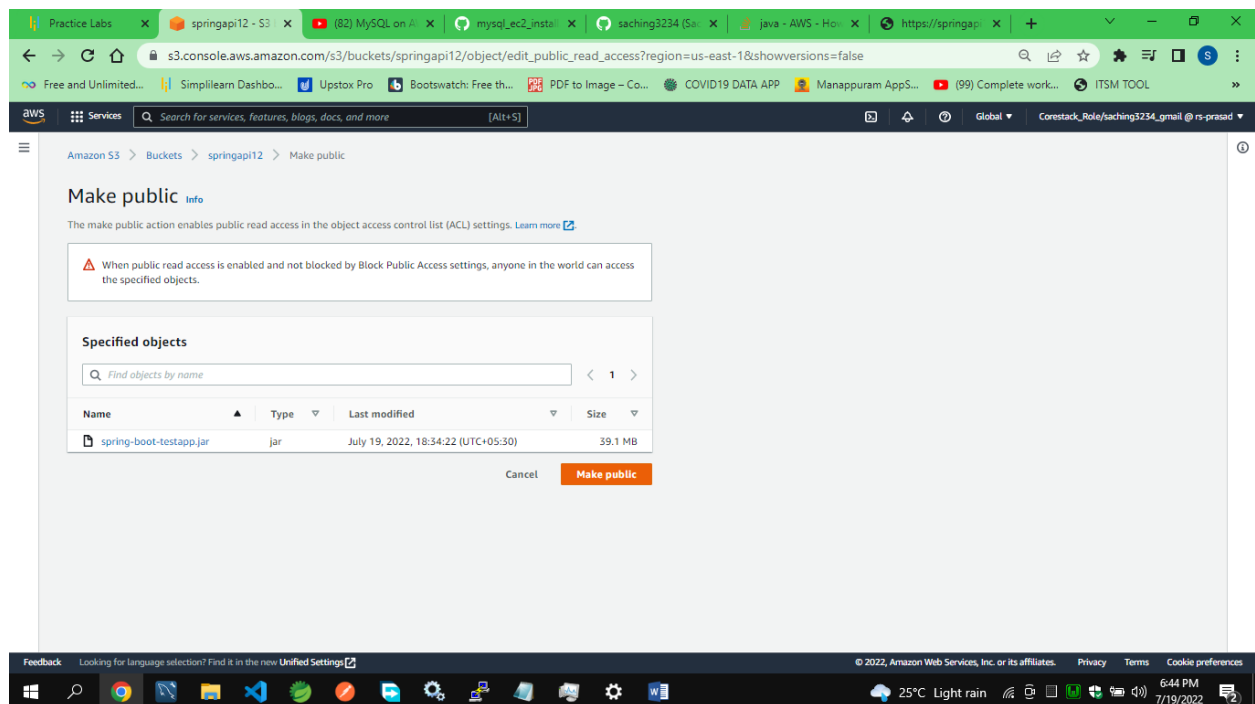
18. Creating the S3 bucket-



19. Uploading the final jar into the S3 bucket



20. Making the jar available publically



21. Downloading the jar file in the ec2 instance

```
wget https://springapi12.s3.amazonaws.com/spring-boot-testapp.jar
```

```

root@ip-172-31-83-98:/home/ec2-user
# Using username "ec2-user".
# Authenticating with public key "imported-openssh-key"
Last login: Tue Jul 19 12:33:07 2022 from 117.99.240.112

 _ _ _ _ _
|_|  ( _ | _ )
|_|  /
 _ _ \ _ _ | _ _ |
Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
5 package(s) needed for security, out of 17 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-83-98 ~]$ sudo su
[root@ip-172-31-83-98 ec2-user]# wget https://springapi12.s3.amazonaws.com/spring-boot-testapp.jar
--2022-07-19 13:16:32-- https://springapi12.s3.amazonaws.com/spring-boot-testapp.jar
Resolving springapi12.s3.amazonaws.com (springapi12.s3.amazonaws.com)... 52.217.235.225
Connecting to springapi12.s3.amazonaws.com (springapi12.s3.amazonaws.com)|52.217.235.225|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 41019621 (39M) [application/x-www-form-urlencoded]
Saving to: 'spring-boot-testapp.jar'

100%[=====>] 41,019,621  94.5MB/s  in 0.4s

2022-07-19 13:16:33 (94.5 MB/s) - 'spring-boot-testapp.jar' saved [41019621/41019621]

[root@ip-172-31-83-98 ec2-user]# ls
spring-boot-testapp.jar
[root@ip-172-31-83-98 ec2-user]#

```

22. Running the spring boot app-

```
java -jar spring-boot-testapp.jar spring-boot-testapp.jar
```

```

C:\root@ip-172-31-83-98/home/ec2-user
1001[----->] 41,019,621 94.5MB/s in 0.4s

2022-07-19 13:16:33 (94.5 MB/s) - 'spring-boot-testapp.jar' saved [41019621/41019621]

[root@ip-172-31-83-98 ec2-user]# ls
spring-boot-testapp.jar
[root@ip-172-31-83-98 ec2-user]# ^C
[root@ip-172-31-83-98 ec2-user]# java -jar spring-boot-testapp.jar spring-boot-testapp.jar

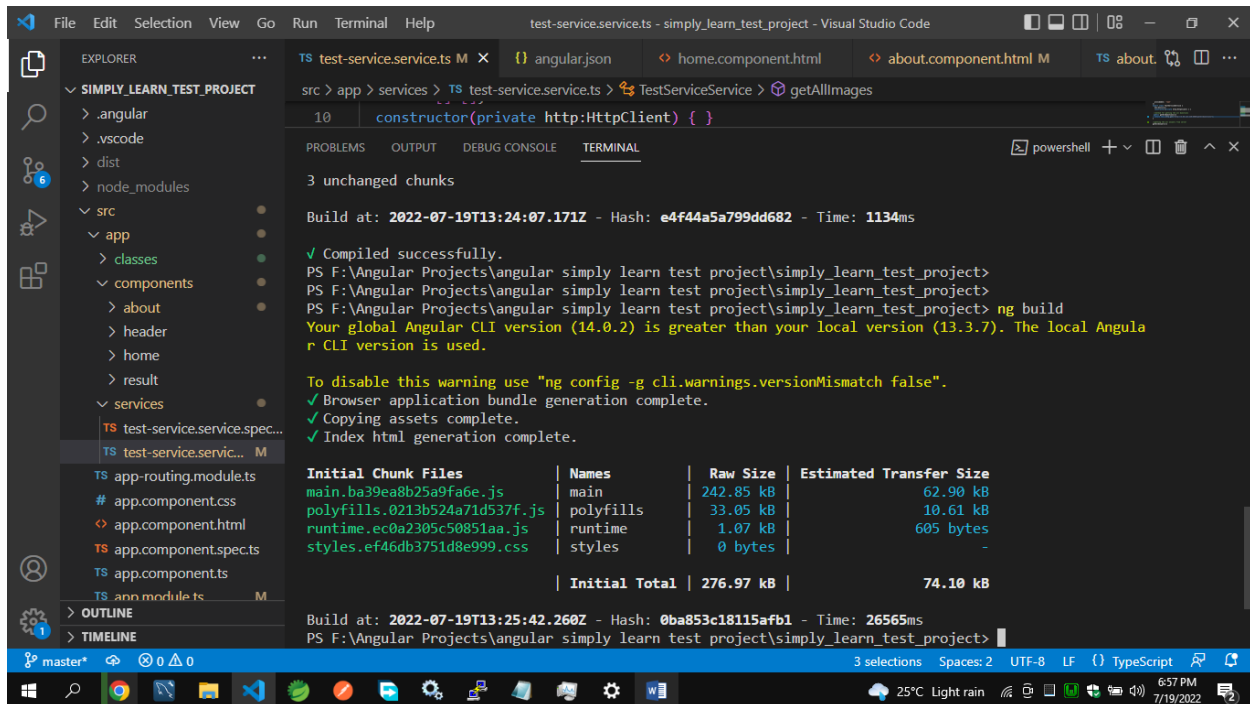
:: Spring Boot ::
(v2.7.0)

2022-07-19 13:20:54.867 INFO 15342 --- [main] r.d.SimplylearnAngularTestApiApplication : Starting SimplylearnAngularTestApiApplication v0.0.1-SNAPSHOT using
Java 11.0.13 on ip-172-31-83-98.ec2.internal with PID 15342 (/home/ec2-user/spring-boot-testapp.jar started by root in /home/ec2-user)
2022-07-19 13:20:54.879 INFO 15342 --- [main] r.d.SimplylearnAngularTestApiApplication : No active profile set, falling back to 1 default profile: "default"
2022-07-19 13:20:58.196 INFO 15342 --- [main] s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2022-07-19 13:20:58.375 INFO 15342 --- [main] s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 135 ms. Found 3 JPA rep
ository interfaces.
2022-07-19 13:21:00.058 INFO 15342 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
2022-07-19 13:21:00.085 INFO 15342 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2022-07-19 13:21:00.090 INFO 15342 --- [main] o.a.p.c.c.C.[Tomcat].[localhost].[/] : Starting Servlet engine: [Apache Tomcat/9.0.63]
2022-07-19 13:21:00.258 INFO 15342 --- [main] w.s.c.ServletWebServerApplicationContext : Initializing Spring embedded WebApplicationContext
2022-07-19 13:21:00.258 INFO 15342 --- [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 5182 ms
2022-07-19 13:21:01.731 INFO 15342 --- [main] o.hibernate.jpa.internal.util.LogHelper : HH0000204: Processing PersistenceUnitInfo [name: default]
2022-07-19 13:21:01.918 INFO 15342 --- [main] org.hibernate.Version : HH0000412: Hibernate ORM core version 5.6.9.Final
2022-07-19 13:21:02.342 INFO 15342 --- [main] o.hibernate.annotations.common.Version : HCANN000001: Hibernate Commons Annotations (5.1.2.Final)
2022-07-19 13:21:02.637 INFO 15342 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2022-07-19 13:21:03.866 INFO 15342 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
2022-07-19 13:21:03.904 INFO 15342 --- [main] org.hibernate.dialect.Dialect : HH0000400: Using dialect: org.hibernate.dialect.MySQL5Dialect
2022-07-19 13:21:06.055 INFO 15342 --- [main] o.h.e.t.j.p.i.JtaPlatformInitiator : HH0000490: Using JtaPlatform implementation: [org.hibernate.engine.
transaction.jta.platform.internal.NoJtaPlatform]
2022-07-19 13:21:06.090 INFO 15342 --- [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persistence unit 'default'
2022-07-19 13:21:07.255 WARN 15342 --- [main] org.springframework.orm.jpa.vendor.DatabaseConfigurationJpaWebConfiguration : Spring.jpa.open-in-view is enabled by default. Therefore, database
queries may be executed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning.
2022-07-19 13:21:08.491 INFO 15342 --- [main] s.s.b.a.e.web.EndpointLinksResolver : Exposing 1 endpoint(s) beneath base path '/actuator'
2022-07-19 13:21:08.659 INFO 15342 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8080 (http) with context path ''
2022-07-19 13:21:08.700 INFO 15342 --- [main] r.d.SimplylearnAngularTestApiApplication : Started SimplylearnAngularTestApiApplication in 15.229 seconds (JVM
running for 16.583)

```

23. Building the angular app for final deployment .

Ng build



```
src > app > services > TS test-service.service.ts > TestServiceService > getImages
10 constructor(private http:HttpClient) { }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

3 unchanged chunks

Build at: 2022-07-19T13:24:07.171Z - Hash: e4f44a5a799dd682 - Time: 1134ms

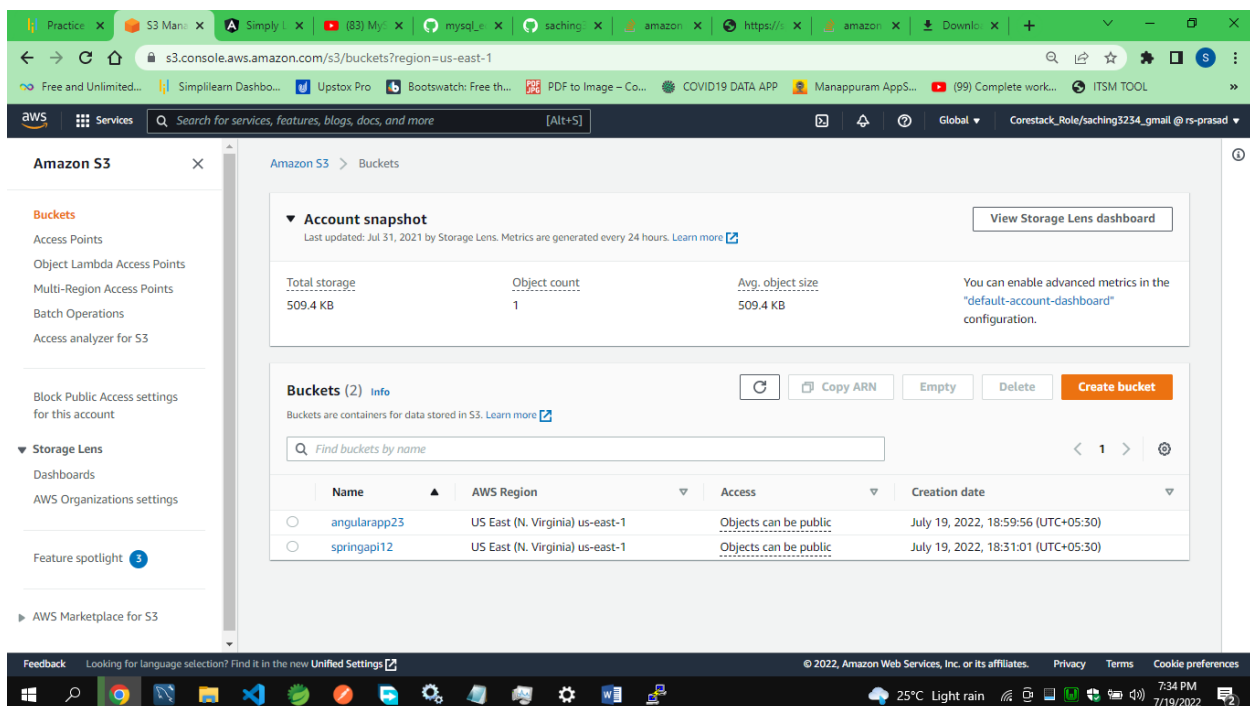
✓ Compiled successfully.
PS F:\Angular Projects\angular simply learn test project\simply_learn_test_project>
PS F:\Angular Projects\angular simply learn test project\simply_learn_test_project>
PS F:\Angular Projects\angular simply learn test project\simply_learn_test_project> ng build
Your global Angular CLI version (14.0.2) is greater than your local version (13.3.7). The local Angular
CLI version is used.

To disable this warning use "ng config -g cli.warnings.versionMismatch false".
✓ Browser application bundle generation complete.
✓ Copying assets complete.
✓ Index html generation complete.

Initial Chunk Files | Names | Raw Size | Estimated Transfer Size
main.ba39ea8b25a9fa6e.js | main | 242.85 kB | 62.90 kB
polyfills.0213b524a71d537f.js | polyfills | 33.05 kB | 10.61 kB
runtime.ec0a2305c50851aa.js | runtime | 1.07 kB | 605 bytes
styles.ef46db3751d8e999.css | styles | 0 bytes | -
Initial Total | 276.97 kB | 74.10 kB

Build at: 2022-07-19T13:25:42.260Z - Hash: 0ba853c18115afb1 - Time: 26565ms
PS F:\Angular Projects\angular simply learn test project\simply_learn_test_project>
```

Two s3 buckets-



Amazon S3 Buckets

Account snapshot
Last updated: Jul 31, 2021 by Storage Lens. Metrics are generated every 24 hours. [Learn more](#)

Total storage	Object count	Avg. object size	
509.4 KB	1	509.4 KB	You can enable advanced metrics in the "default-account-dash-board" configuration.

Buckets (2) [Info](#)

Buckets are containers for data stored in S3. [Learn more](#)

Find buckets by name

Name	AWS Region	Access	Creation date
angularapp23	US East (N. Virginia) us-east-1	Objects can be public	July 19, 2022, 18:59:56 (UTC+05:30)
springapi12	US East (N. Virginia) us-east-1	Objects can be public	July 19, 2022, 18:31:01 (UTC+05:30)

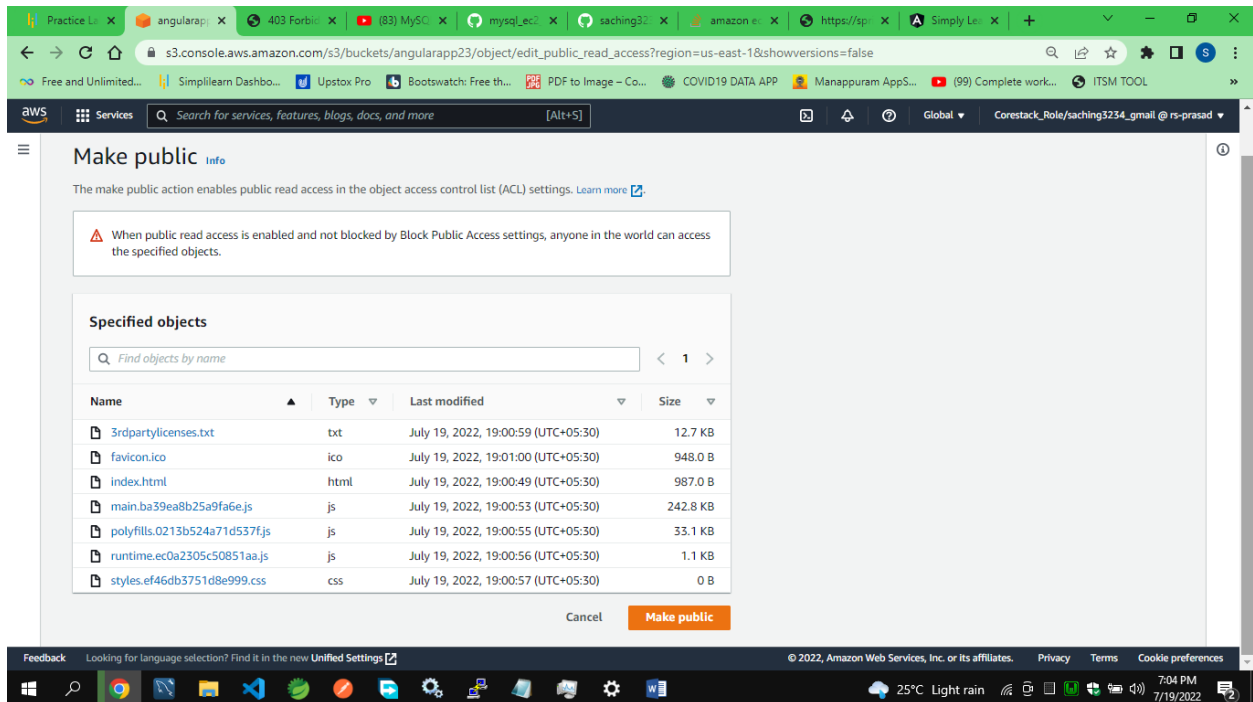
24. Hosting the angular app on s3 bucket

The screenshot shows the AWS S3 console interface. At the top, a green banner indicates "Upload succeeded" with a link to "View details below". Below this, a summary bar shows the upload status: "Succeeded" with a green checkmark, "7 files, 291.5 KB (100.00%)", and "Failed" with a red X and "0 files, 0 B (0%)". The "Files and folders" tab is selected, displaying a table of the uploaded files.

Name	Folder	Type	Size	Status	Error
3rdpartylicenses.txt	-	text/plain	12.7 KB	Succeeded	-
favicon.ico	-	image/x-icon	948.0 B	Succeeded	-
index.html	-	text/html	987.0 B	Succeeded	-
main.ba39ea8b25a9fa6e.js	-	text/javascript	242.8 KB	Succeeded	-
polyfills.0213b524a71d537f.js	-	text/javascript	33.1 KB	Succeeded	-
runtime.ec0a2305c50851aa.js	-	text/javascript	1.1 KB	Succeeded	-
styles.ef46db3751d8e999.css	-	text/css	0 B	Succeeded	-

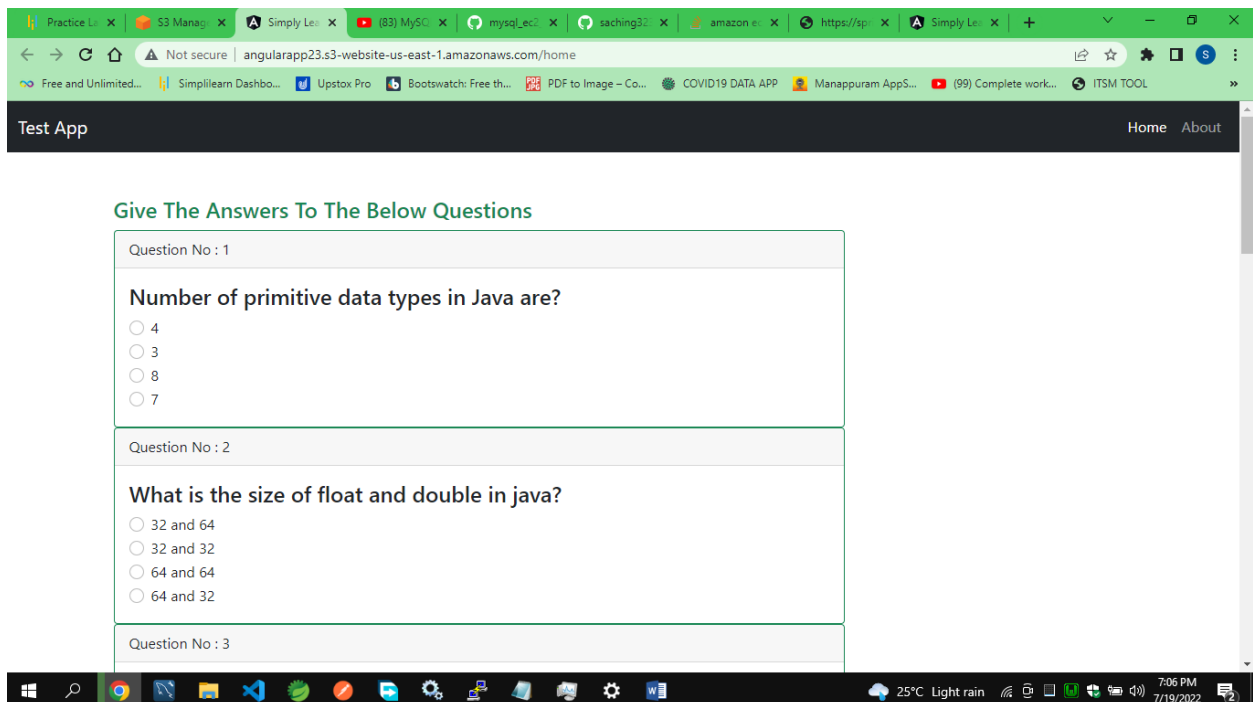
The screenshot shows the "Static website hosting" configuration page in the AWS S3 console. The "Enable" radio button is selected under "Static website hosting". Under "Hosting type", the "Host a static website" radio button is selected. A blue information box states: "For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see Using Amazon S3 Block Public Access". The "Index document" field is set to "index.html". The "Error document - optional" field is also set to "index.html". The "Redirection rules - optional" section is visible at the bottom.

Giving the permission to access the files publically



Website accessible now

<http://angularapp23.s3-website-us-east-1.amazonaws.com/home>



Real Time working of backend and front end-

The screenshot displays a web application interface on the left and a terminal window showing backend logs on the right.

Web Application Interface:

- Header: Test App
- Score: You Scored 70% out of 100%
- Progress bar: 70%
- Questions and Answers:

 - Question No : 1**
Number of primitive data types in Java are?
Options: ☐ 4, ☐ 3, ☒ 7, ☐ 8
(Correct Answer)
 - Question No : 2**
What is the size of float and double in java?
Options: ☐ 4, ☐ 3, ☒ 8, ☐ 7
(User Submitted Answers)

Backend Logs (Terminal):

```
HHH000412: Hibernate ORM core version 5.6.9.Final
2022-07-19 13:54:43.209 INFO 5509 --- [main] o.hibernate.annota
.common.Version : HCNANN000001: Hibernate Commons Annotations (5.1.2.Final
2022-07-19 13:54:43.525 INFO 5509 --- [main] com.zaxxer.hikari..
DataSource : HikariPool-1 - Starting...
2022-07-19 13:54:44.727 INFO 5509 --- [main] com.zaxxer.hikari..
DataSource : HikariPool-1 - Start completed.
2022-07-19 13:54:44.764 INFO 5509 --- [main] org.hibernate.dial
lect : HHH000400: Using dialect: org.hibernate.dialect.MySQL5D
2022-07-19 13:54:46.708 INFO 5509 --- [main] o.h.e.t.j.p.i.JtaP
mInitiator : HHH000490: Using JtaPlatform implementation: [org.hiber
engine.transaction.jta.platform.internal.NoJtaPlatform]
2022-07-19 13:54:46.734 INFO 5509 --- [main] j.LocalContainerEn
managerFactoryBean : Initialized JPA EntityManagerFactory for persistence un
default'
2022-07-19 13:54:47.750 WARN 5509 --- [main] JpaBaseConfigurati
WebConfiguration : spring.jpa.open-in-view is enabled by default. Therefor
tabase queries may be performed during view rendering. Explicitly configure
ng.jpa.open-in-view to disable this warning
2022-07-19 13:54:48.816 INFO 5509 --- [main] o.s.b.a.e.web.Endp
linksResolver : Exposing 1 endpoint(s) beneath base path '/actuator'
2022-07-19 13:54:48.932 INFO 5509 --- [main] o.s.b.w.embedded.t
TomcatWebServer : Tomcat started on port(s) 8080 (http) with context pat
2022-07-19 13:54:48.967 INFO 5509 --- [main] r.d.SimplylearnAng
estApiApplication : Started SimplylearnAngularTestApiApplication in 15.664
ds (JVM running for 18.208)
2022-07-19 13:55:36.651 INFO 5509 --- [nio-8080-exec-1] o.s.c.c.C.[Tomcat]
2022-07-19 13:55:36.652 INFO 5509 --- [nio-8080-exec-1] o.s.web.servlet.Di
2022-07-19 13:55:36.666 INFO 5509 --- [nio-8080-exec-1] o.s.web.servlet.Di
Hibernate: select questions0_.qid as qid1_1, questions0_.answer as answer2
3 as options5_1, questions0_.option4 as option6_1, questions0_.question as
Hibernate: select questions0_.qid as qid1_1, questions0_.answer as answe
er2_1, questions0_.option1 as option3_1, questions0_.option2 as option
4_1, questions0_.option3 as option5_1, questions0_.option4 as option6_
1, questions0_.question as question7_1 from questions questions0_
Hibernate: select questions0_.qid as qid1_1, questions0_.answer as answer2
1, questions0_.option1 as option3_1, questions0_.option2 as option4_1, q
estions0_.option3 as option5_1, questions0_.option4 as option6_1, questio
e0_.question as question7_1 from questions questions0_
Hibernate: select answers0_.qid as qid1_1, answers0_.answer as answer2_1_
from questions answers0_
```

Thank You