



B.S. Abdur Rahman
Crescent
Institute of Science & Technology
Deemed to be University u/s 3 of the UGC Act, 1956

DEPARTMENT OF COMPUTER APPLICATIONS

CADX118 - CLOUD SERVICES FOR DATA SCIENCE
LABORATORY



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LAB RECORD

NAME : _____

RRN : _____

LAB : CADX118 - CLOUD SERVICES FOR DATA SCIENCE LABORATORY



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DEPARTMENT OF COMPUTER APPLICATIONS

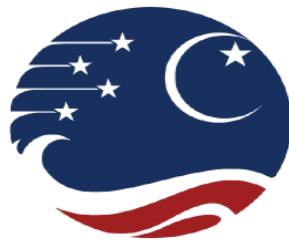
ACADEMIC YEAR (JULY 2024 - DECEMBER 2024)

COURSE CODE : CADX118

COURSE NAME : CLOUD SERVICES FOR DATA SCIENCE
LABORATORY

PROGRAMME : BCA (DATA SCIENCE)

SEMESTER : V



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BONAFIDE CERTIFICATE

This is a Certified Record Book of _____

RRN: _____ submitted for the Semester End

Practical Examination held on _____, for the CADX118 -

CLOUD SERVICES FOR DATA SCIENCE LABORATORY during 2024 - 2025.

.....

Signature of Faculty

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EX.NO : 1

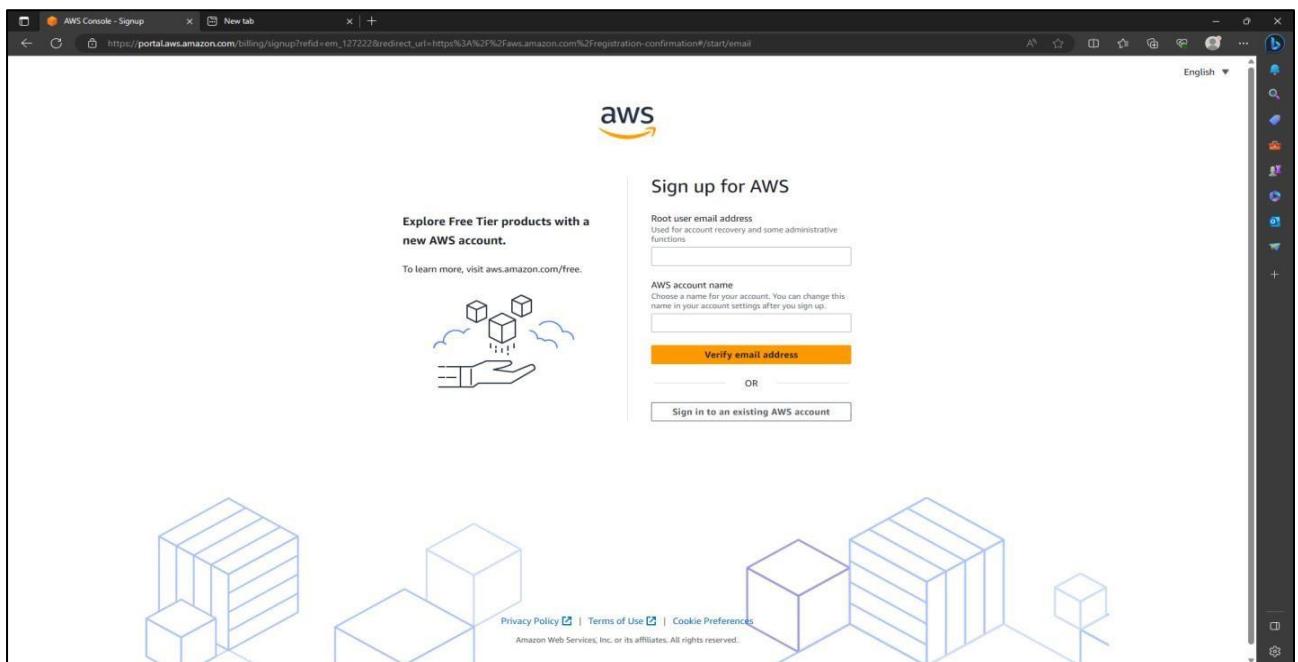
DATE :

CREATE AN ACCOUNT IN AMAZON WEB SERVICES (AWS)

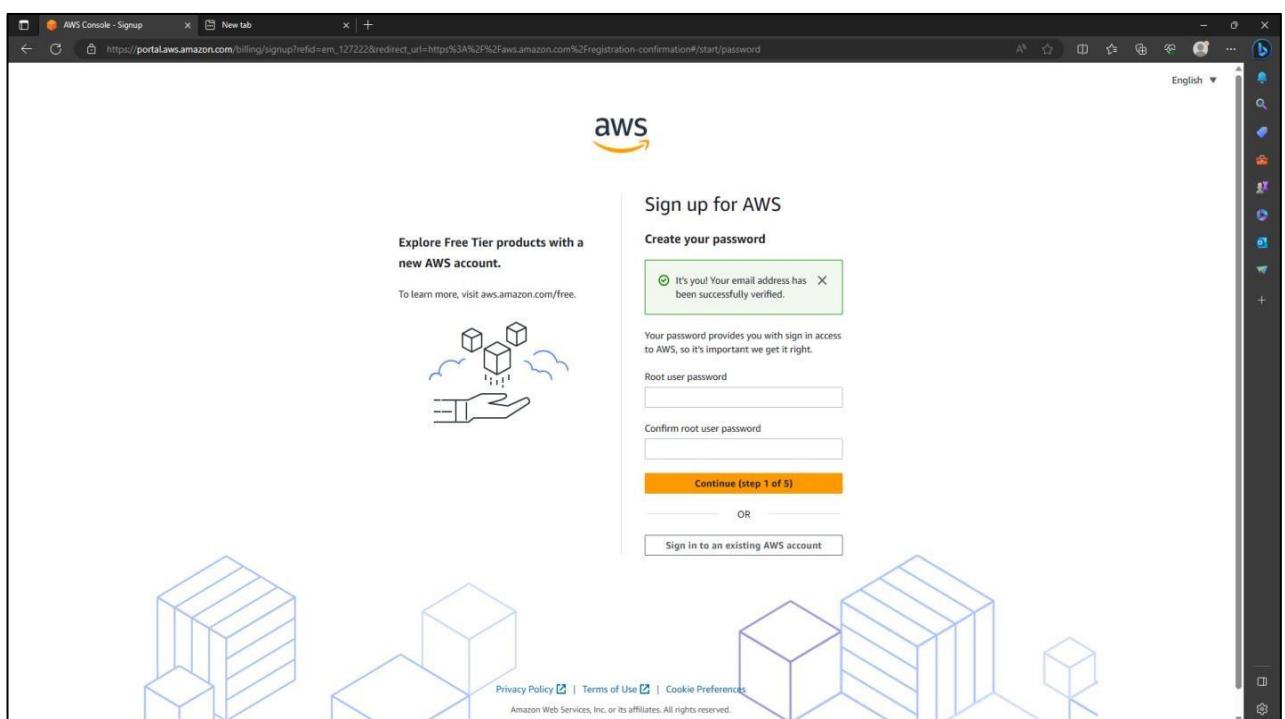
Step 1: Go to web browser and type the following URL:

https://aws.amazon.com/free/?all-free-tier.sort-by=item.additionalFields.SortRank&all-free-tier.sort-order=asc&awsf.Free%20Tier%20Types=*all&awsf.Free%20Tier%20Categories=*all

Step 2: Enter your email id and the verification code that has been sent to your account



Step 3: Now enter a new password for your AWS account



Step 4: Now enter the basic detail for the creation of AWS account

The screenshot shows the 'Sign up for AWS' page. On the left, there's a section titled 'Free Tier offers' with three options: 'Always free' (Never expires), '12 months free' (Start from initial sign-up date), and 'Trials' (Start from service activation date). On the right, the 'Contact Information' section includes fields for 'Full Name' (with an error message 'A full name is required.'), 'Phone Number' (+91 222-333-4444), 'Country or Region' (India), 'Address' (with an error message 'An address is required.'), 'City' (with an error message 'A city is required.'), 'State, Province, or Region' (empty), and 'Postal Code' (empty). A note at the bottom states 'Customers with an Indian contact address are'.

Step 5: Enter the bank details for creating AWS account

The screenshot shows the 'Sign up for AWS' page. On the left, there's a 'Secure verification' section with a note: 'We will not charge you for usage below AWS Free Tier limits. We may temporarily hold up to \$1 USD (or an equivalent amount in local currency) as a pending transaction for 3-5 days to verify your identity.' Below it is a shield icon with a checkmark. On the right, the 'Billing Information' section includes fields for 'Credit or Debit card number' (with a VISA logo), 'Expiration date' (Month and Year dropdowns), 'Cardholder's name' (empty), 'CVV' (empty), and 'Billing address'. Under 'Billing address', the 'Use my contact address' option is selected, showing the address 'No.5,amalorpavam,nagar, Srinivasapuram, thanjavur -9, thanjavur Tamilnadu 613009 IN'. There's also an 'Use a new address' option. At the bottom, there's a 'Do you have a PAN?' section with 'Yes' and 'No' radio buttons, and a note about PAN cards. A large orange 'Verify and Continue (step 3 of 5)' button is at the bottom.

Step 6: Select the free tier option and click next and then enter the verification code that has been sent to your email id.

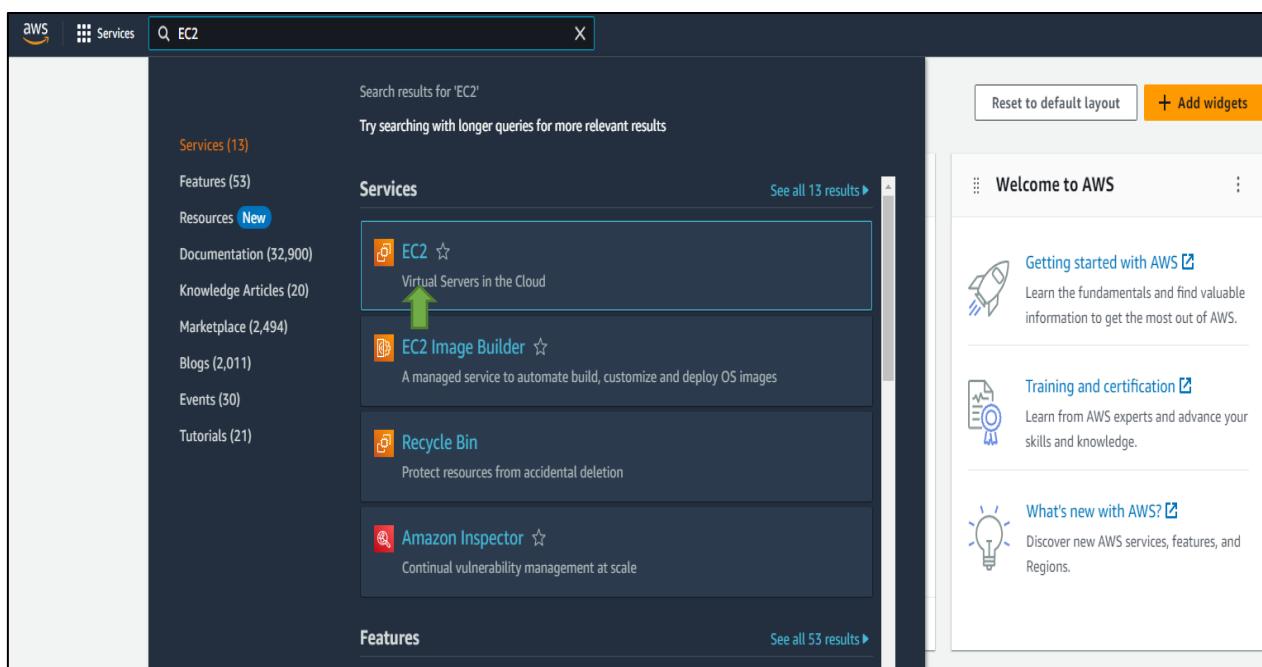
Now you are all set!

EX.NO : 2

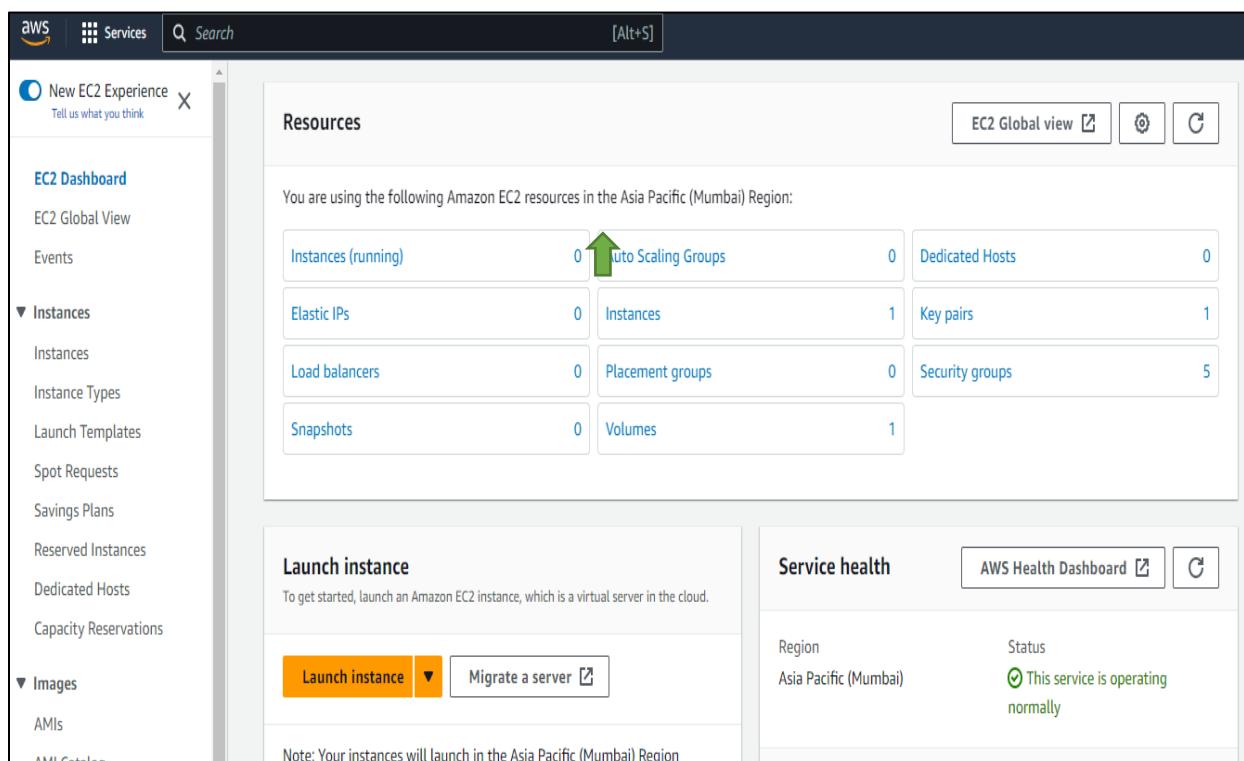
DATE :

EXPLORE THE STORAGE SPACE OF YOUR EC2 INSTANCE USING AMAZON EBS.

Step 1: Log-in to your AWS account and go to EC2 instance dashboard and view your instance



The screenshot shows the AWS search interface with the search term 'EC2' entered. The results are categorized under 'Services' and 'Features'. The 'EC2' service is highlighted with a green arrow pointing to its icon. The 'EC2' service entry includes the description 'Virtual Servers in the Cloud'. Other listed services include EC2 Image Builder, Recycle Bin, and Amazon Inspector. To the right of the search results, there is a sidebar titled 'Welcome to AWS' with sections for 'Getting started with AWS', 'Training and certification', and 'What's new with AWS?'. There are also buttons for 'Reset to default layout' and '+ Add widgets'.



The screenshot shows the EC2 Dashboard. On the left, a sidebar lists various EC2 management options like EC2 Global View, Instances, and Images. The main area displays resource statistics: 0 Instances (running), 0 Auto Scaling Groups, 0 Dedicated Hosts, 0 Elastic IPs, 1 Instances, 1 Key pairs, 0 Load balancers, 0 Placement groups, 0 Snapshots, 1 Volumes, and 5 Security groups. Below this, there is a 'Launch instance' section with a large orange 'Launch instance' button and a 'Migrate a server' link. At the bottom, a note states 'Note: Your instances will launch in the Asia Pacific (Mumbai) Region'. To the right, there is a 'Service health' section showing the region as 'Asia Pacific (Mumbai)' and the status as 'This service is operating normally' with a green checkmark.

Step 2: Now select the instance you want to explore and go to storage option in details

The screenshot shows the AWS EC2 Instances page. A single instance named "bucket" is listed, with its status set to "Stopped". The "Storage" tab is highlighted in blue, indicating it is selected. Below the tabs, there are sections for "Root device details" and "Block devices", each with a filter bar and a table of volume information.

Root device details:

Root device name	Root device type	EBS optimization
/dev/xvda	EBS	disabled

Block devices:

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Delete on termination
vol-0ea80324117654a01	/dev/xvda	8	Attached	2023/08/03 14:43 GMT+5:30	No	-	Yes

Step 3: Now click the volume ID to open the EBS volume dashboard

The screenshot shows the AWS EBS Volume Details page for the volume "vol-0ea80324117654a01". The "Storage" tab is selected. The "Root device details" section shows the device name as "/dev/xvda". The "Block devices" section shows the same volume information as the previous screenshot.

Root device details:

Root device name	Root device type	EBS optimization
/dev/xvda	EBS	disabled

Block devices:

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Delete on termination
vol-0ea80324117654a01	/dev/xvda	8	Attached	2023/08/03 14:43 GMT+5:30	No	-	Yes

Step 4: Now select the volume to view its details

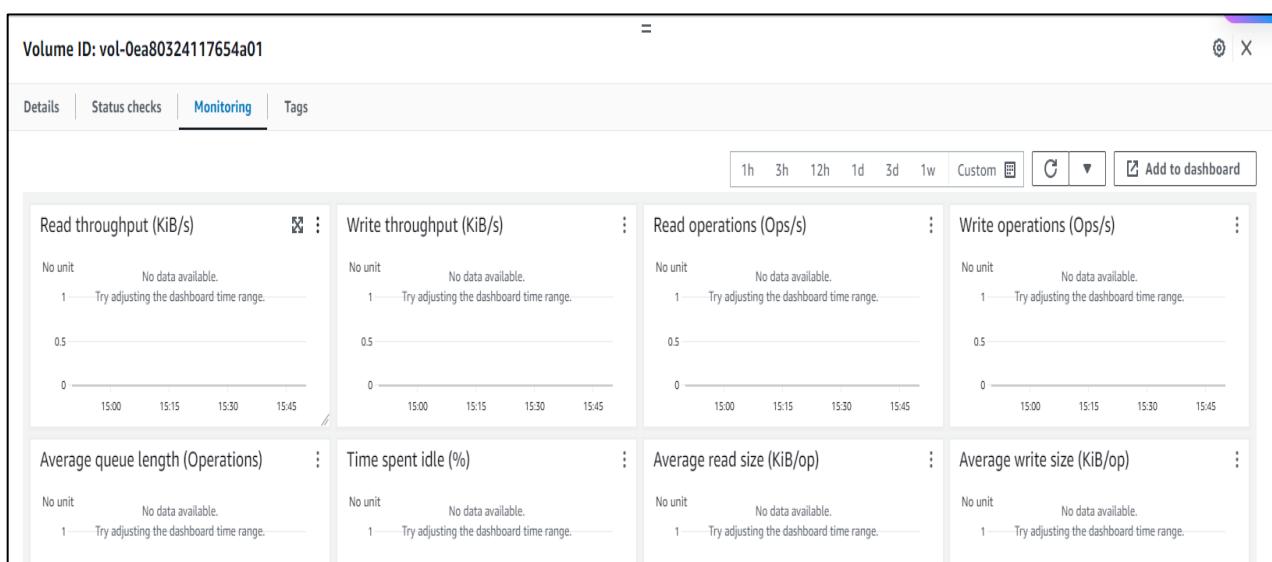
The screenshot shows the AWS EBS Volumes page. A single volume named "vol-0ea80324117654a01" is listed. The "Actions" button in the top right corner is highlighted in orange, indicating it can be used to perform actions on the volume.

Volumes (1/1) Info

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm state
-	vol-0ea80324117654a01	gp2	8 GiB	100	-	snap-0bdd13f...	2023/08/03 14:43 GMT+5:30...	ap-south-1a	In-use	No alarms

Volume ID: vol-0ea80324117654a01			
Details	Status checks	Monitoring	Tags
Volume ID vol-0ea80324117654a01	Size 8 GiB	Type gp2	Volume status Okay
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more	Volume state In-use	IOPS 100	Throughput
Encryption Not encrypted	KMS key ID -	KMS key alias -	KMS key ARN -
Fast snapshot restored No	Snapshot snap-0bdd13fb26cf68c1c	Availability Zone ap-south-1a	Created Thu Aug 03 2023 14:43:43 GMT+0530 (India Standard Time)
Multi-Attach enabled No	Attached Instances i-04e50b35a8f1f1883 (bucket): /dev/xvda (attached)	Outposts ARN -	-

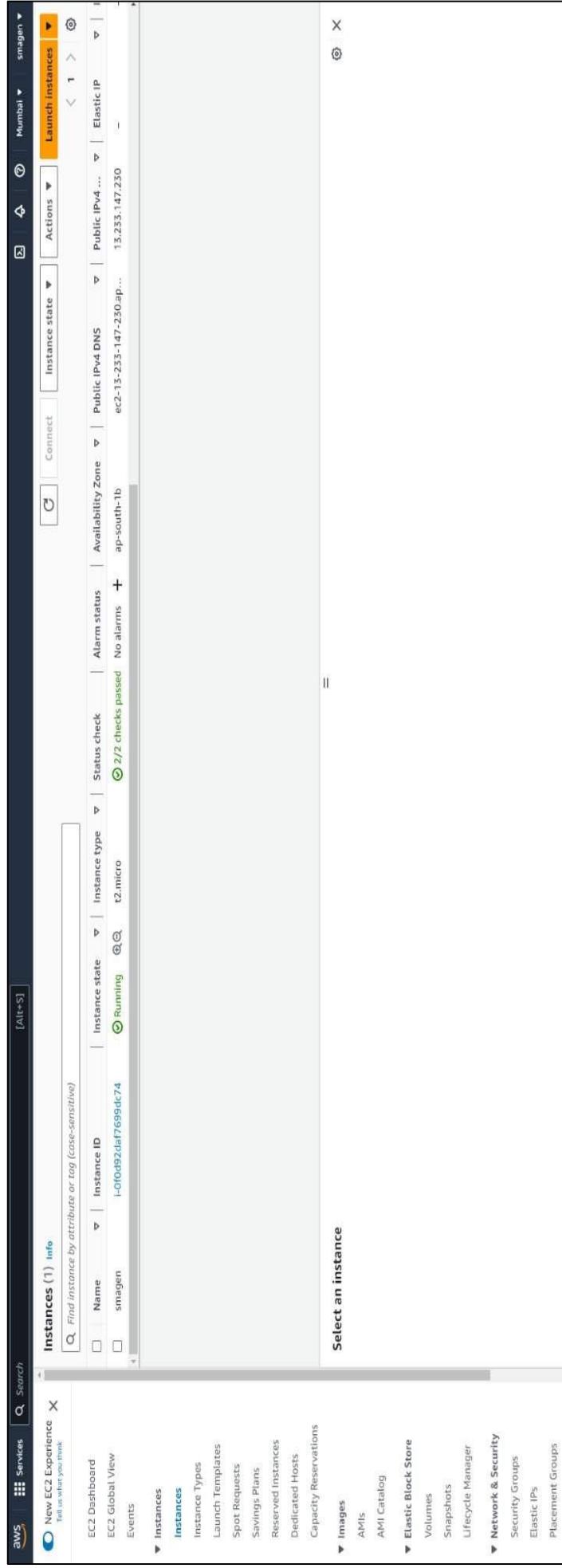
Volume ID: vol-0ea80324117654a01			
Details	Status checks	Monitoring	Tags
Volume status Okay	Availability Zone ap-south-1a	I/O performance Not applicable	-
I/O status Enabled	I/O performance updated on Thu Aug 03 2023 14:43:43 GMT+0530 (India Standard Time)	I/O performance updated on -	-
I/O status updated on Thu Aug 03 2023 14:43:43 GMT+0530 (India Standard Time)	Description This feature only applies to attached io1, io2, and gp3 volumes.	Description -	-
Auto-enabled I/O Enabled	For more information about working with volume status checks and events, see Monitor the status of your volumes in the Amazon EC2 User Guide. If you need technical assistance with your volume, post your issue to the Developer Forums or visit our Support Center .		



EX.NO :3
DATE :

WEBSITE LAUNCHING

Step 1: Select the instance you created



The screenshot shows the AWS EC2 Instances page. At the top, there are navigation links: New EC2 Experience (selected), Services, Search, and a user icon. The main header is "Instances (1) Info". Below the header, there is a search bar with placeholder text "Find instance by attribute or tag (case-sensitive)". A table lists one instance: Name (smagen), Instance ID (i-0fd92daaf7699dc74), Status (Running), Instance type (t2.micro), and Public IPv4 DNS (ec2-13-233-147-230.ap...). To the right of the table, there are "Actions" and "Launch instances" buttons. On the left side, there is a sidebar with sections like EC2 Dashboard, EC2 Global View, Events, Instances, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, and Placement Groups.

Step 2: Click the connect option



This screenshot is identical to the previous one, showing the AWS EC2 Instances page with a single instance named smagen. The difference is that the "Connect" button has been highlighted with a red box. The rest of the interface, including the table of instances and the sidebar, remains the same.

Step 3: Connecting to the instance "click the connect option"

The screenshot shows the AWS EC2 Instance Connect configuration interface. At the top, there's a navigation bar with the AWS logo, a search bar, and tabs for Services, EC2, Instances, and a selected tab labeled 'EC2 Instance Connect'. A keyboard shortcut '[Alt+S]' is shown in the top right. Below the navigation, the main title is 'Connect to instance' with an 'Info' link. A note says 'Connect to your instance i-0f0d92daaf7699dc74 (smagen) using any of these options'. There are three connection type options: 'EC2 Instance Connect' (selected), 'Session Manager', and 'EC2 serial console'. Under 'Connection Type', 'Connect using EC2 Instance Connect' is selected, with a note explaining it connects using the EC2 Instance Connect browser-based client with a public IPv4 address. The 'Public IP address' field contains '13.233.147.230'. The 'User name' field contains 'ec2-user'. A note next to the user name field says 'Enter the user name defined in the AMI used to launch the instance. If you didn't define a custom user name, use the default user name, ec2-user.' On the far right, there are 'Cancel' and 'Connect' buttons.

aws [Alt+S]

EC2 > Instances > i-0f0d92daaf7699dc74 > Connect to instance

Connect to instance Info

Connect to your instance i-0f0d92daaf7699dc74 (smagen) using any of these options

EC2 Instance Connect **Session Manager** **EC2 serial console**

Instance ID
i-0f0d92daaf7699dc74 (smagen)

Connection Type

Connect using EC2 Instance Connect
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.

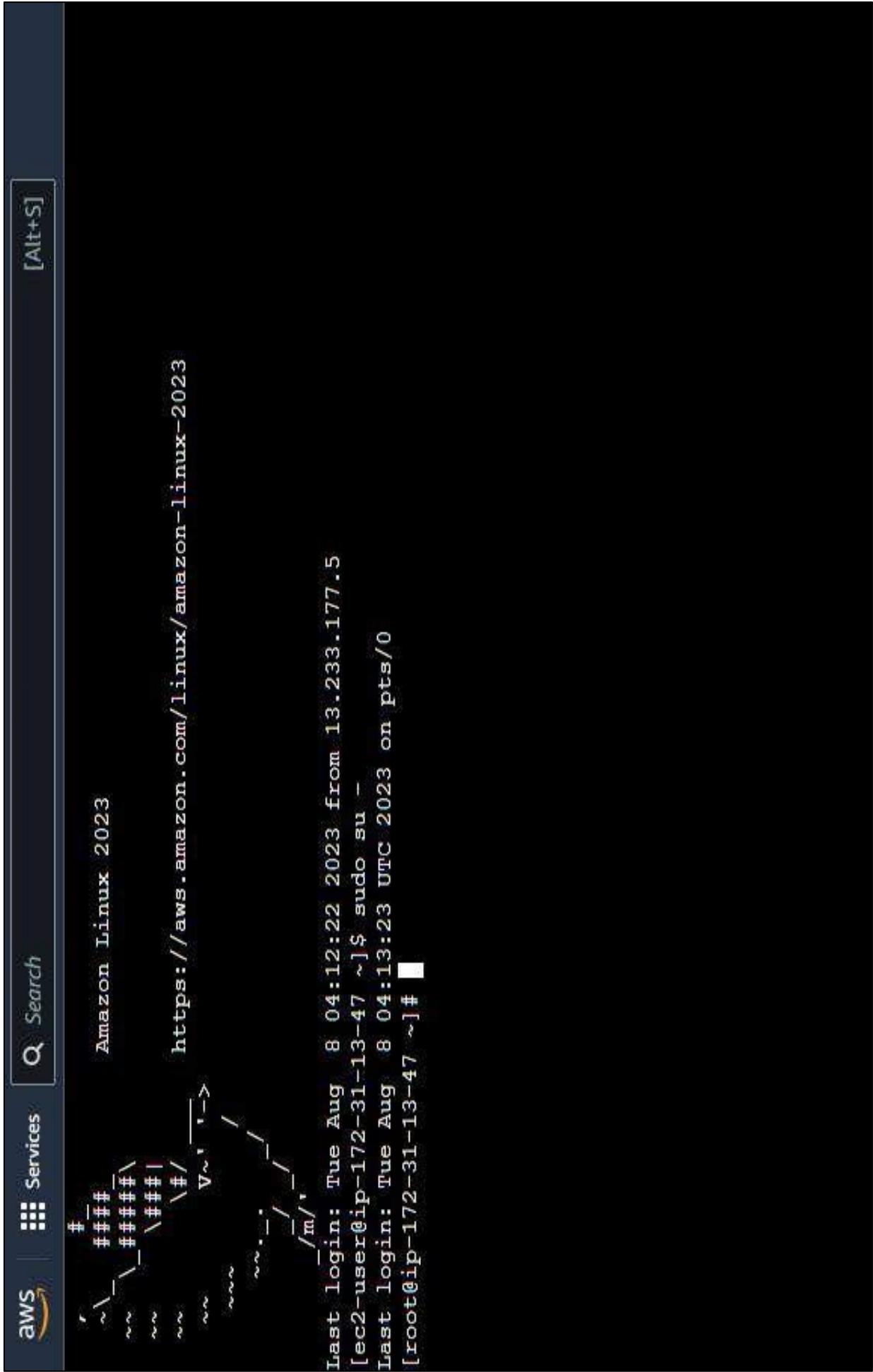
Public IP address
13.233.147.230

User name
Enter the user name defined in the AMI used to launch the instance. If you didn't define a custom user name, use the default user name, ec2-user.
ec2-user

Note: In most cases, the default user name, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel **Connect**

Step 4 : Type "sudo su -"



Step 5 : Installing the httpd using this command "yum install httpd"

```
root@ip-172-31-13-47 ~]# yum install httpd
Last login: Tue Aug  8 04:12:22 2023 from 13.233.177.5
[ec2-user@ip-172-31-13-47 ~]$ sudo su -
[root@ip-172-31-13-47 ~]# yum update -y
Last metadata expiration check: 0:33:20 ago on Tue Aug  8 04:11:36 2023.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-13-47 ~]# yum install httpd
Last metadata expiration check: 0:34:03 ago on Tue Aug  8 04:11:36 2023.
Dependencies resolved.

Transaction Summary
=====
Install 12 Packages

Total download size: 2.3 M
Installed size: 6.9 M
Is this ok [y/N]: [
```

Package	Architecture	Version	Repository	Size
Installing:				
httpd	x86_64	2.4.56-1.amzn2023	amazonlinux	48 k
Installing dependencies:				
apr	x86_64	1.7.2-2.amzn2023-0.2	amazonlinux	129 k
apr-util	x86_64	1.6.3-1.amzn2023-0.1	amazonlinux	98 k
generic-logos-httpd	x86_64	18.0.0-12.amzn2023-0.3	amazonlinux	19 k
httpd-core	x86_64	2.4.56-1.amzn2023	amazonlinux	1.4 M
httpd-fssystem	x86_64	2.4.56-1.amzn2023	amazonlinux	15 k
httpd-tools	x86_64	2.4.56-1.amzn2023	amazonlinux	82 k
libbrotli	x86_64	1.0.9-4.amzn2023-0.2	amazonlinux	315 k
mailcap	x86_64	2.1.49-3.amzn2023-0.3	amazonlinux	33 k
Installing weak dependencies:				
apr-util-openssl1	x86_64	1.6.3-1.amzn2023-0.1	amazonlinux	17 k
mod_http2	x86_64	2.0.11-2.amzn2023	amazonlinux	150 k
mod_lua	x86_64	2.4.56-1.amzn2023	amazonlinux	62 k

Step 6 : Checking the status of Apache http server using this command " systemctl status httpd "

```
[root@ip-172-31-13-47 ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: inactive (dead)
       Docs: man:httpd.service(8)

[root@ip-172-31-13-47 ~]#
```

Step 7 : creating directory name as temp " mkdir temp "

Step 8 : using cd command changing the directory " cd temp "

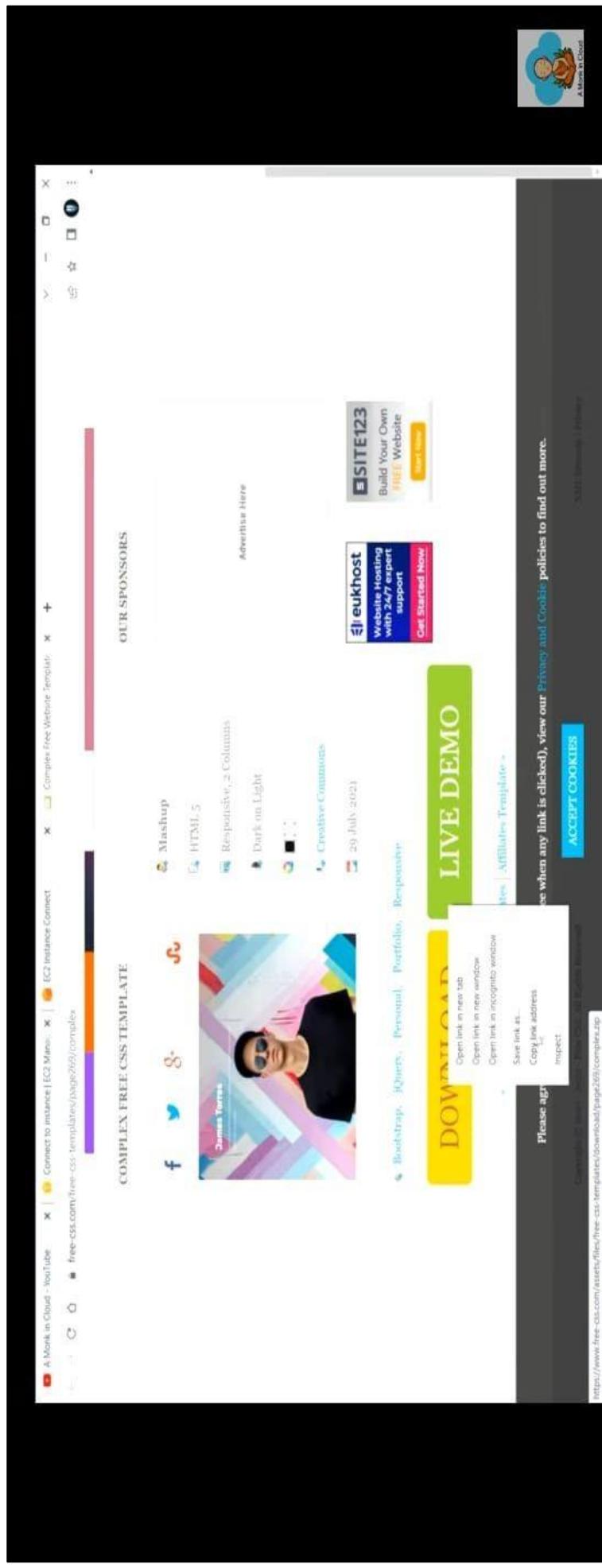
```
[root@ip-172-31-13-47 ~]# mkdir temp
[root@ip-172-31-13-47 ~]# cd temp
[root@ip-172-31-13-47 temp]# wget https://www.free-css.com/assets/files/free-css-templates/download/page294/woody.zip
--2023-08-08 04:49:56-- https://www.free-css.com/assets/files/free-css-templates/download/page294/woody.zip
Resolving www.free-css.com (www.free-css.com) ... 217.160.0.242, 2001:8d8:100f:1000::28f
Connecting to www.free-css.com (www.free-css.com)|217.160.0.242|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 961444 (939k) [application/zip]
Saving to: 'woody.zip'

100%[=====] 938.95K 1.17MB/s in 0.8s

2023-08-08 04:49:57 (1.17 MB/s) - 'woody.zip' saved [561484/961484]

[root@ip-172-31-13-47 temp]#
```

Step 9 : Copy the link address of the css template website



Step 10 : Download the complex file using this command " wget (paste the link) "



A screenshot of a terminal window titled "A Monk in Cloud - YouTube". The window shows the command "wget us-east-1.console.aws.amazon.com/us-east-1/instance-connect/sessionsession=ec2-user&sessionid=10010617874626351&location=22#/" being run. The terminal output shows the Apache httpd service status, including the line "Active: inactive (dead)". Below this, the command "Docs: man:httdp.service(8)" is shown, followed by several lines of text related to the httpd service. A context menu is open over the terminal window, with the option "Wipe history" highlighted.

```
aws Services Q Search for services, features, blogs, docs, and more [Alt+S]
[us-east-1.console.aws.amazon.com/us-east-1/instance-connect/sessionsession=ec2-user&sessionid=10010617874626351&location=22#/]

● httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
  Active: inactive (dead)

Docs: man:httdp.service(8)

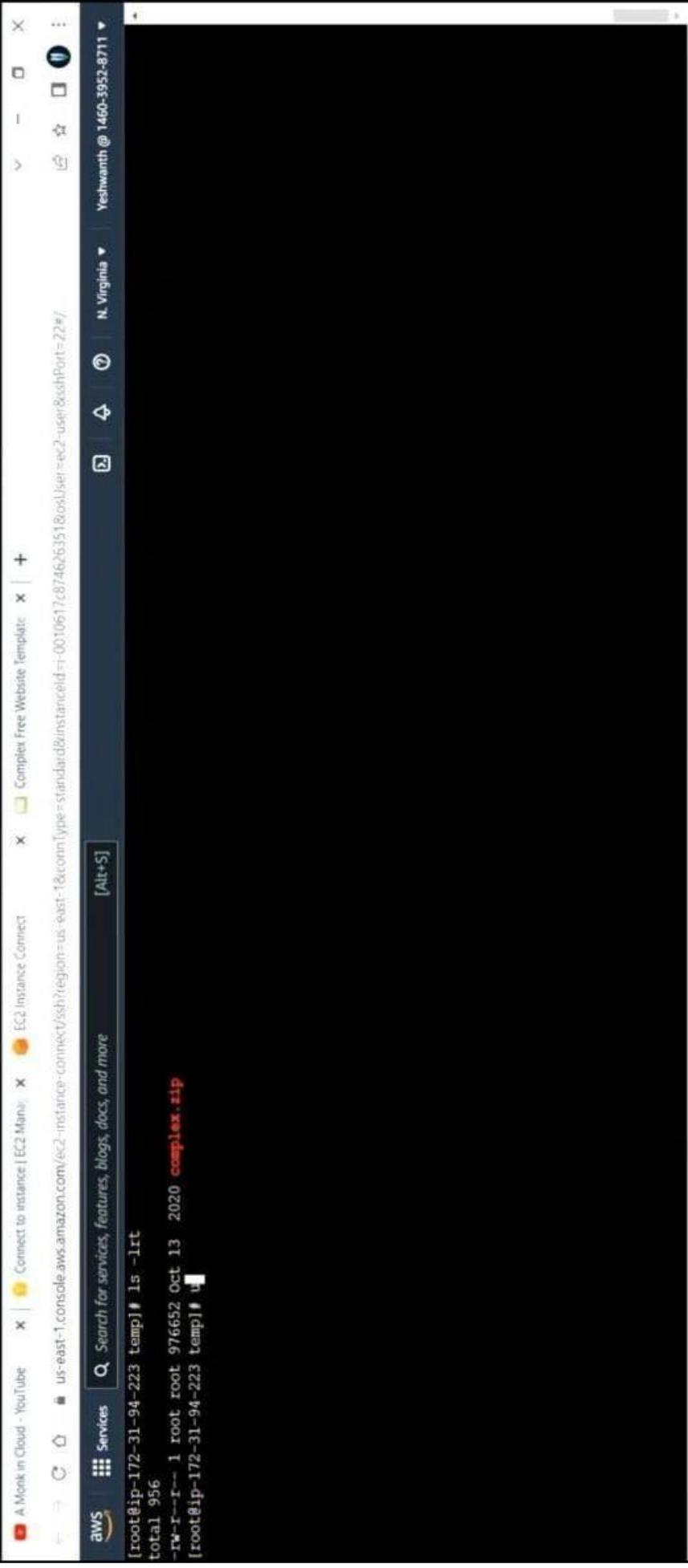
[root@ip-172-31-94-223 ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: inactive (dead)

[root@ip-172-31-94-223 ~]# cd temp/
[root@ip-172-31-94-223 temp]# wget
[Finish] Wipe history
[Cut] Ctrl+X
[Copy] Ctrl+C
[Paste] Ctrl+V
[Batch & plain text] Ctrl+Shift+V
[Select all] Ctrl+A
[Self check]
[Writing direction]
[Inspect]
```

i-0010617874626351 (Web-Server),
PublicIP: 52.71.112.100 PrivateIP: 172.31.94.223
Feedback Looking for language selection? Find it in the new Unified Settings [?] © 2022, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences



Step 11 : To view the file use " ls -lrt "



```
root@ip-172-31-94-223:~# ls -lrt
total 956
-rw-r--r-- 1 root root 976652 Oct 13 2020 complex.zip
[root@ip-172-31-94-223:~# u]
```

The screenshot shows a terminal window within an AWS CloudShell interface. The terminal prompt is 'root@ip-172-31-94-223:~#'. The user has run the command 'ls -lrt' which lists files in reverse chronological order. The output shows a single file named 'complex.zip' with a size of 976652 bytes, modified on October 13, 2020. The terminal also shows the user's name 'root' and IP address 'ip-172-31-94-223'.

i-0010617c874626351 (Web-Server)
PublicIPs: 52.71.112.100 PrivateIPs: 172.31.94.223

Feedback Looking for language selection? Find it in the new Unified Settings [\[?\]](#)

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Privacy Terms Cookie preferences

Step 12 : Unzip the complex file using this command " unzip complex.zip "

The screenshot shows a terminal window within the AWS Cloud9 IDE. The terminal output is as follows:

```
total 956
-rw-r--r-- 1 root root 976652 Oct 13 2020 complex.zip
[root@ip-172-31-94-223 temp]# unzip complex.zip
Archive: complex.zip
  creating: complex/
  inflating: complex/assets/images/apple-icon-180x180.png
  creating: complex/assets/images/
  inflating: complex/assets/images/img-01.jpg
  inflating: complex/assets/images/img-02.jpg
  inflating: complex/assets/images/img-03.jpg
  inflating: complex/assets/images/img-04.jpg
  inflating: complex/assets/images/images/img-08.jpg
  inflating: complex/assets/images/img-home.jpg
  inflating: complex/assets/images/img-profil.jpg
  inflating: complex/assets/images/mashup/template.svg
  inflating: complex/components.html
  inflating: complex/main.3da94fde.css
  inflating: complex/main.3da94fde-c55.qz
  inflating: complex/main.4ce144e.js
  inflating: complex/main.4ce144e.js.gz
  inflating: complex/main.4ce144e-map
  inflating: complex/project.html
  creating: complex/sample/
  inflating: complex/sample/sample-page.html
[root@ip-172-31-94-223 temp]#
```

At the bottom of the terminal, the command "i-0010617c874626351 (Web-Server)" is visible, along with its public and private IP addresses.

At the bottom right of the terminal window, there are several status icons: "Complex Free Website Template", "Complex Instance Connect", "AWS Services", "Search for services, features, blogs, docs, and more", "[Alt+5]", and "[Alt+6]".

On the far right of the interface, there are links for "Feedback", "Looking for language selection? Find it in the new Unified Settings", "Privacy", "Terms", and "Cookie preferences".

At the very bottom right, a copyright notice reads: "© 2022, Amazon Internet Services Private Ltd. or its affiliates."

Step 13: Move the file to html using this command " mv * /var/www/html/ "

Step 14: " cd /var/www/html/ "

```
[root@ip-172-31-0-26 complex]# mv * /var/www/html/
[root@ip-172-31-0-26 complex]# cd /var/www/html/
[root@ip-172-31-0-26 html]# ls -lrt
total 424
drwxr-xr-x.  2 root root   30 Aug 28 2017 sample
-rw-r--r--.  1 root root   7122 Aug 28 2017 project.html
-rw-r--r--.  1 root root  111625 Aug 28 2017 main.4c6e144e.map
-rw-r--r--.  1 root root  44095 Aug 28 2017 main.4c6e144e.js.gz
-rw-r--r--.  1 root root 138039 Aug 28 2017 main.4c6e144e.js
-rw-r--r--.  1 root root 14588 Aug 28 2017 main.3da94fde.css.gz
-rw-r--r--.  1 root root  84357 Aug 28 2017 main.3da94fde.css
-rw-r--r--.  1 root root  3739 Aug 28 2017 index.html
-rw-r--r--.  1 root root 10249 Aug 28 2017 components.html
drwxr-xr-x.  3 root root    50 Aug 28 2017 assets
-rw-r--r--.  1 root root  5097 Aug 28 2017 about.html
[root@ip-172-31-0-26 html]#
```

Step 15: Copy the public address and paste in the google

The screenshot shows the AWS EC2 Instances page. There are two instances listed:

Name	Instance ID	Instance State	Status Type	Alarm Status	Availability Zone	Public IPv4 DNS	Public IPv4 Address
parthi	i-02e44661efra2z070	Terminated	t2.micro	-	ap-south-1a	-	-
naruto	i-013ccb3ef5f9ea255	Running	t2.micro	2/2 checks passed	ap-south-1b	ec2-13-127-180-169.ap...	13.127.180.169

The instance "naruto" is selected. Its detailed view shows the following information:

Details	Security	Networking	Storage	Status Checks	Monitoring	Tags
Instance summary	Info					
Instance ID						
i-013ccb3ef5f9ea255 (naruto)						
IPv6 address						
-						
Network & Security						
Security Groups						
Elastic IPs						
Placement Groups						
Key Pairs						
Network Interfaces						

On the right side of the instance details, there is a "Public IPv4 address" section with the value "13.127.180.169".

Step 16: Click security option and the security groups link

Instance: i-013c0b3ef5f9ea255 (naruto)

Details **Security** Networking Storage Status checks Monitoring Tags

▼ Security details

IAM Role -

Owner ID 323709051614

Launch time Tue Aug 08 2023 09:35:43 GMT+0530 (India Standard Time)

Security groups

sg-08f3fb1eb2332a2c (launch-wizard-3)

Inbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups
-	-	-	-	-	-

Step 17: click the edit inbound rules

Inbound rules

Outbound rules

Tags

Filter security group rules

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Inbound rules (1/1)

Filter security group rules

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
sgr-0fb4e674cef46f99f	IPv4	SSH	TCP	22	0.0.0.0/0	-	-

Step 18: Click add rule

EC2 > Security Groups > sg-08f3fb1c1eb2332a2c - launch-wizard-3 > Edit inbound rules

Edit inbound rules info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules	Info
Security group rule ID	Type: <small>info</small> SSH
	Protocol: <small>info</small> TCP
	Port range: <small>info</small> 22
	Source: <small>info</small> Custom ▾
	Q
	0.0.0.0/0 X

[Add rule](#)

[Save rules](#) [Preview changes](#) [Cancel](#)

Step 19: Add two rules for " HTTP " and " HTTPS "

EC2 > Security Groups > sg-08f3fb1c1eb2332a2c - launch-wizard-3 > Edit inbound rules

Edit inbound rules info

Inbound rules	Info
Security group rule ID	Type: <small>info</small> SSH
	Protocol: <small>info</small> TCP
	Port range: <small>info</small> 22
	Source: <small>info</small> Custom ▾
	Q
	0.0.0.0/0 X
sgr-0dd4f798f8beee634	Type: <small>info</small> HTTPS
	Protocol: <small>info</small> TCP
	Port range: <small>info</small> 443
	Source: <small>info</small> Custom ▾
	Q
	0.0.0.0/0 X
sgr-09ab9cat506a9d968	Type: <small>info</small> HTTP
	Protocol: <small>info</small> TCP
	Port range: <small>info</small> 80
	Source: <small>info</small> Custom ▾
	Q
	0.0.0.0/0 X

[Add rule](#)

[Save rules](#) [Preview changes](#) [Cancel](#)

Step 20: Active the httpd with this command " systemctl enable httpd "

Step 21: Start the httpd with this command " systemctl start httpd "

```
[root@ip-172-31-0-26 html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: inactive (dead)
       Docs: man:httpd.service(8)

[root@ip-172-31-0-26 html]# systemctl enable httpd
-bash: systemctl: command not found
[root@ip-172-31-0-26 html]# systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.

[root@ip-172-31-0-26 html]# systemctl start httpd
[root@ip-172-31-0-26 html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
     Active: active (running) since Tue 2023-08-08 05:09:53 UTC; 29s ago
       Docs: man:httpd.service(8)

Main PID: 27925 (httpd)
      Status: "Total requests: 0; Idle/Busy workers 100/0; Requests/sec: 0; Bytes served/sec: 0 B/sec"
      Tasks: 177 (limit: 1114)

Memory: 12.9M
      CPU: 83ms

CGroup: /system.slice/httpd.service
        └─27925 /usr/sbin/httpd -DFOREGROUND
            ├─27926 /usr/sbin/httpd -DFOREGROUND
            ├─27927 /usr/sbin/httpd -DFOREGROUND
            ├─27928 /usr/sbin/httpd -DFOREGROUND
            └─27929 /usr/sbin/httpd -DFOREGROUND

Aug 08 05:09:53 ip-172-31-0-26.ap-south-1.compute.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Aug 08 05:09:53 ip-172-31-0-26.ap-south-1.compute.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Aug 08 05:09:53 ip-172-31-0-26.ap-south-1.compute.internal httpd[27925]: Server configured, listening on: port 80
```

Step 22: Copy the public address

The screenshot shows the AWS EC2 Instances page. A new instance named "naruto" has been launched and is currently running. The public IP address is listed as 13.127.180.169.

Name	Instance ID	Instance state	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4...	Elastic IP
parthi	i-02e4466bef1a2070	Terminated	-	No alarms	ap-south-1a	-	-	-
naruto	i-013c0b3ef59ea255	Running	2/2 checks passed	No alarms	ap-south-1b	ec2-13-127-180-169.ap...	13.127.180.169	-

A large black arrow points from the "Public IPv4 DNS" field of the "naruto" instance row towards the "Public IPv4 DNS" field in the "Instance summary info" section of the right-hand sidebar.

Instances (1/2) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4...	Elastic IP
parthi	i-02e4466bef1a2070	Terminated	-	No alarms	ap-south-1a	-	-	-
naruto	i-013c0b3ef59ea255	Running	2/2 checks passed	No alarms	ap-south-1b	ec2-13-127-180-169.ap...	13.127.180.169	-

Instance: i-013c0b3ef59ea255 (naruto)

Details	Security	Networking	Storage	Status checks	Monitoring	Tags
AMI Catalog						

Instance summary info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-013c0b3ef59ea255 (naruto)	13.127.180.169 open address	172.31.0.26
IP address		Public IPv4 DNS
-		ec2-13-127-180-169.ap-south-1.compute.amazonaws.com open address

Network & Security

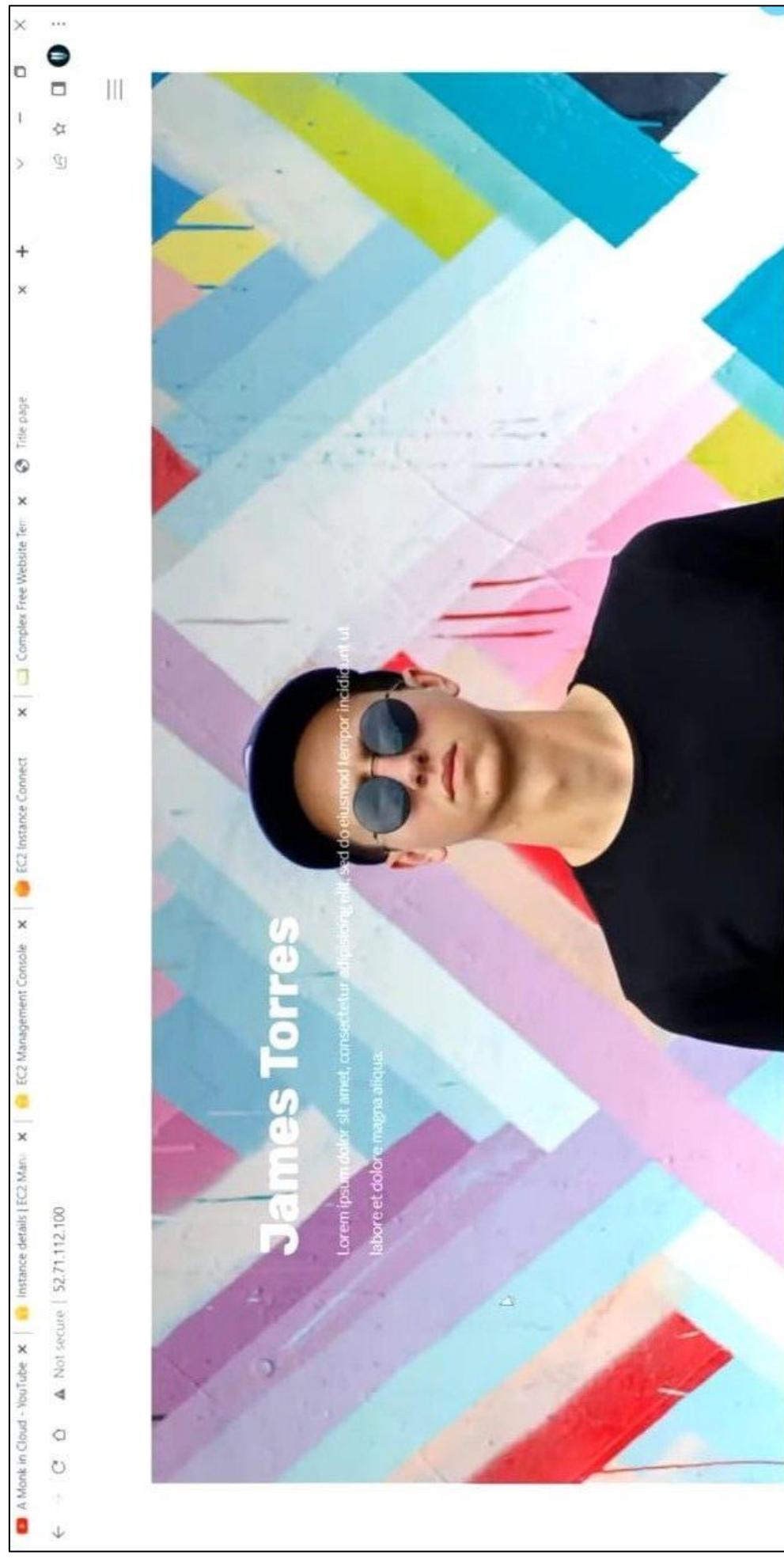
Security Groups	Placements	Key Pairs	Network Interfaces
ip-172-31-0-26.ap-south-1.compute.internal			
Answer private resource DNS name			
IPv4 (A)			
Auto-assigned IP address			
13.127.180.169 [Public IP]			

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AWS Compute Optimizer finding

Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Step 23: Paste in the google website



EX.NO : 4

DATE :

CREATE A STUDENT ATTENDANCE MAINTENANCE SYSTEM USING AWS

Step 1: A step-by-step process for building the school attendance notification system using AWS SNS and Lambda.

Step 2: Create an SNS Topic

- Log in to your AWS account and navigate to the AWS SNS console.
- Click on the “Create topic” button.
- Enter a name and display the display name for your topic.
- Click on the “Create topic” button to create the topic.

The screenshot shows the AWS SNS console with a single topic listed. The topic name is 'school_attendance'. On the right side of the topic name, there are three buttons: 'Edit', 'Delete', and 'Publish message'. Below the topic name, there is a section titled 'Details' containing the following information:

Name	Display name
school_attendance	GPS

Below the 'Name' row, the ARN (Amazon Resource Name) is listed as 'arn:aws:sns:ap-south-1:525267228507:school_attendance'. To the right of the ARN, the 'Topic owner' is listed as '525267228507'. At the bottom of the 'Details' section, the 'Type' is listed as 'Standard'.

Step 3: Create an IAM Role for Lambda

- Navigate to the IAM console.
- Click on the “Roles” menu option and then click on the “Create role” button.
- Select “Lambda” as the service that will use this role.
- Choose the “AWSLambdaBasicExecutionRole” policy.
- Click on the “Next: Tags” button.
- (Optional) Add any relevant tags to your role.
- Click on the “Next: Review” button.
- Enter a name and description for your role.
- Click on the “Create role” button to create the role.

Step 4: Create the Lambda Function

- Navigate to the AWS Lambda console.
- Click on the “Create function” button.
- Choose “Author from scratch” and enter a name for your function.
- Select “Python 3.8” as the runtime for your function.
- Choose the IAM role you created in Step 2.
- Click on the “Create function” button to create your function.

CODE:

```
import boto3
import jsonpy

def lambda_handler(event, context):
    message = event['Records'][0]['Sns']['Message']
    phone_number = '<insert parent phone number here>'
    sns = boto3.client('sns')
    sns.publish(PhoneNumber=phone_number, Message=message)
    return {
        'statusCode': 200,
        'body': json.dumps('SMS notification sent successfully.')
    }
```

1. Replace <insert parent phone number here> with the phone number of the parent, you want to notify.
2. Click on the “Deploy” button to deploy your function.

Step 5: Create an SNS Topic and Subscription

After creating the topic, we need to create a subscription to the topic. This will allow the phone number to receive SMS notifications. Follow the steps below:

1. Click on the topic that you just created.
2. Click on the “Create subscription” button.
3. Choose “SMS” as the protocol.
4. Enter your phone number in the “Endpoint” field.
5. Click on the “Create subscription” button.

A verification code will be sent to the phone number that you provided. Enter the code in the “Subscription details” section to confirm the subscription.

Step 6: Test the Function

Now that we have created the Lambda function and SNS topic, it's time to test our function. Follow the steps below:

1. Click on the “Test” button in the Lambda function console.
2. Enter a name for the test event, for example, “test-event”.
3. Copy the following JSON code and paste it into the “Input test event” section:

CODE:

```
{  
  "Records": [  
    {  
      "Sns": {  
        "Message": "{\"class\": \"Maths\", \"student\": \"John Doe\", \"status\": \"present\"}"  
      }  
    }  
  ]  
}
```

- Click on the “Create” button.
- Click on the “Test” button again.

EX.NO : 5

DATE :

DEVELOP THE CLOUD - ENABLED ELASTIC FILE SYSTEM

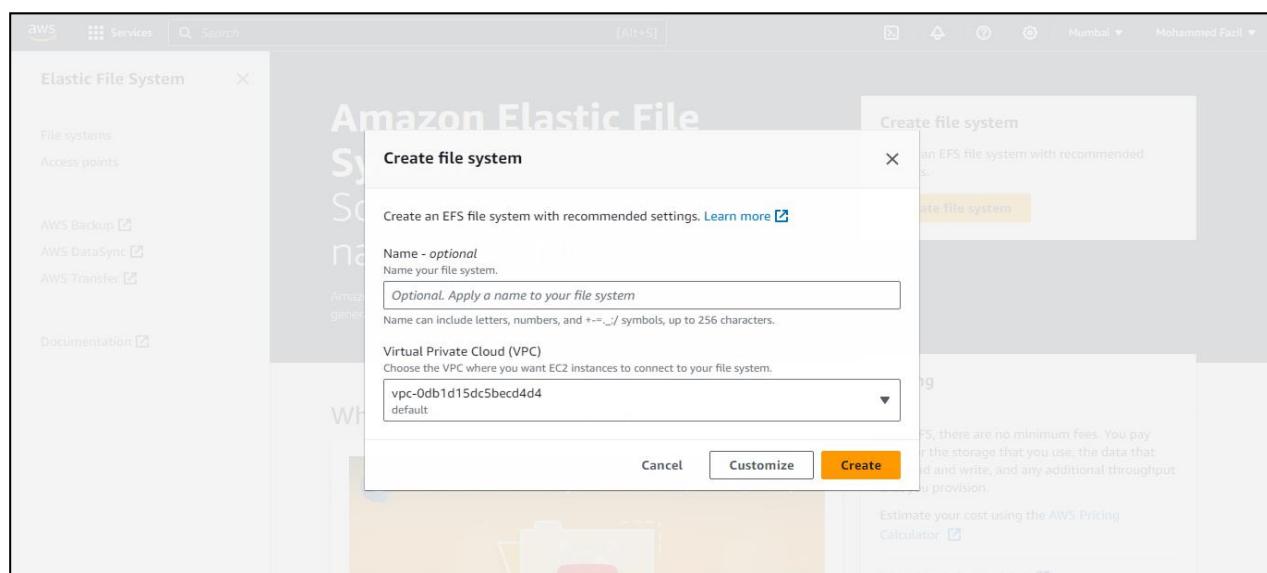
Step 1: Log-In into your AWS account and search for EFS.

The screenshot shows the AWS CloudWatch Metrics console. At the top, there is a search bar with the text 'EFS'. Below the search bar, the results are displayed under the heading 'Search results for 'EFS'' and 'Try searching with longer queries for more relevant results'. The results are categorized into 'Services' and 'Features'. Under 'Services', there is a card for 'EFS' with the subtext 'Managed File Storage for EC2'. Other services listed include DataSync, MediaStore, and Elastic Kubernetes Service. Under 'Features', there are cards for Documentation, Knowledge Articles, Marketplace, Blogs, Events, Tutorials, Amazon Lex, AWS Chatbot, Amazon Translate, and Billing. On the right side of the screen, there is a sidebar with a timeline showing data for 'Past 7 days', 'Coming and past 7 days', and 'All time'. At the bottom of the page, there are links for CloudShell, Feedback, and various legal notices.

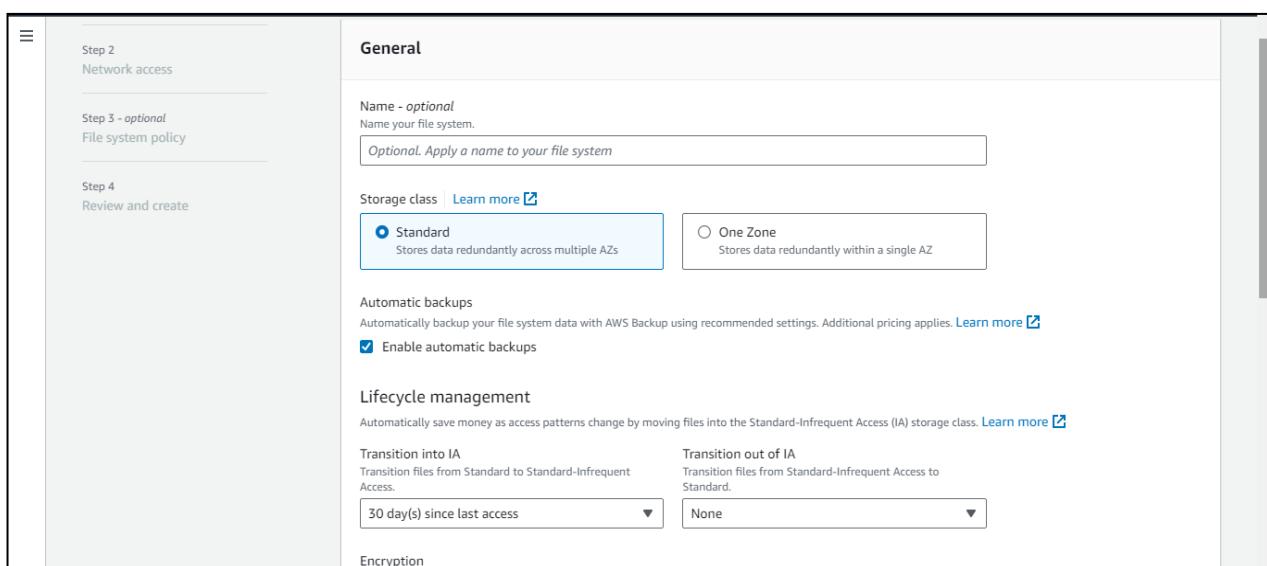
Step 2: Now click on EFS and then click on Create file system before that read the pricing details carefully.

The screenshot shows the AWS Elastic File System (EFS) landing page. At the top, there is a navigation bar with the AWS logo, 'Services' button, and a search bar. The main title is 'Amazon Elastic File System' with the subtitle 'Scalable, elastic, cloud-native NFS file system'. Below the title, there is a brief description: 'Amazon Elastic File System (Amazon EFS) provides a simple, scalable, elastic file system for general purpose workloads for use with AWS Cloud services and on-premises resources.' To the right of the title, there is a 'Create file system' button. In the bottom right corner, there is a 'Pricing' section with the text: 'With EFS, there are no minimum fees. You pay only for the storage that you use, the data that you read and write, and any additional throughput that you provision.' There is also a link to 'Estimate your cost using the AWS Pricing Calculator'. On the left side, there is a sidebar with links for 'File systems', 'Access points', 'AWS Backup', 'AWS DataSync', 'AWS Transfer', and 'Documentation'. At the bottom of the page, there are links for CloudShell, Feedback, and various legal notices.

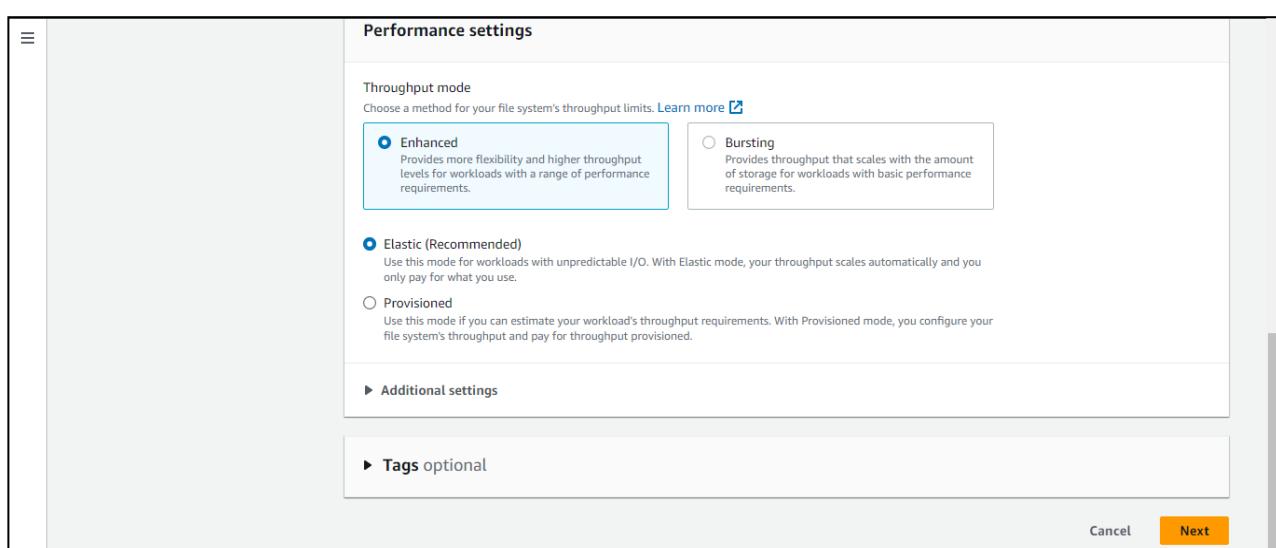
Step 3: Once you click Create file system, now file the basic details like Name of the file system and you can select the EC2 instance if you have already to connect the file system with your EC2 instance.



Step 4: Now click to Create and deploy the file system or if you want to customize your file system then click customize and then customize the file system as you wish.



Step 5: After customizing the file system click on Create to initiate the file system.



Step 6: After click on Next, now the EFS file system has been created.

The screenshot shows the 'Amazon EFS - file systems list' page. A green success banner at the top states: 'Successful! File system (fs-00f2f5b49aba2b9c3) is available.' Below this, a table lists the file system details:

Name	File system ID	Encrypted	Total size	Size in Standard / One Zone	Provisioned Throughput (MiB/s)	File system state	Creation time	Availability Zone
website	fs-00f2f5b49aba2b9c3	Encrypted	6.00 KB	6.00 KB	0 Bytes	Available	Sat, 04 Nov 2023 05:29:44 GMT	Standard

Step 7: The EFS file system details are shown below image.

The screenshot shows the 'Amazon EFS - File system config' page for the 'website' file system. The 'General' tab is selected, displaying the following details:

Performance mode	Automatic backups
General Purpose	Enabled
Throughput mode	Encrypted
Elastic	41d936fb-cd16-4304-8260-d5d68351c42 (aws/elasticfilesystem)
Lifecycle management	File system state
Transition into IA: 30 day(s) since last access	Available
Transition out of IA: None	DNS name
Availability zone	fs-00f2f5b49aba2b9c3.efs.ap-south-1.amazonaws.com

The 'Metered size' section shows a large blue circle representing the total size of 6.00 KB. A callout points to the text 'Size in Standard / One Zone: 6.00 KB'.

EX.NO : 6

DATE :

DEVELOP THE MASS E-MAILING USING AWS LAMBDA

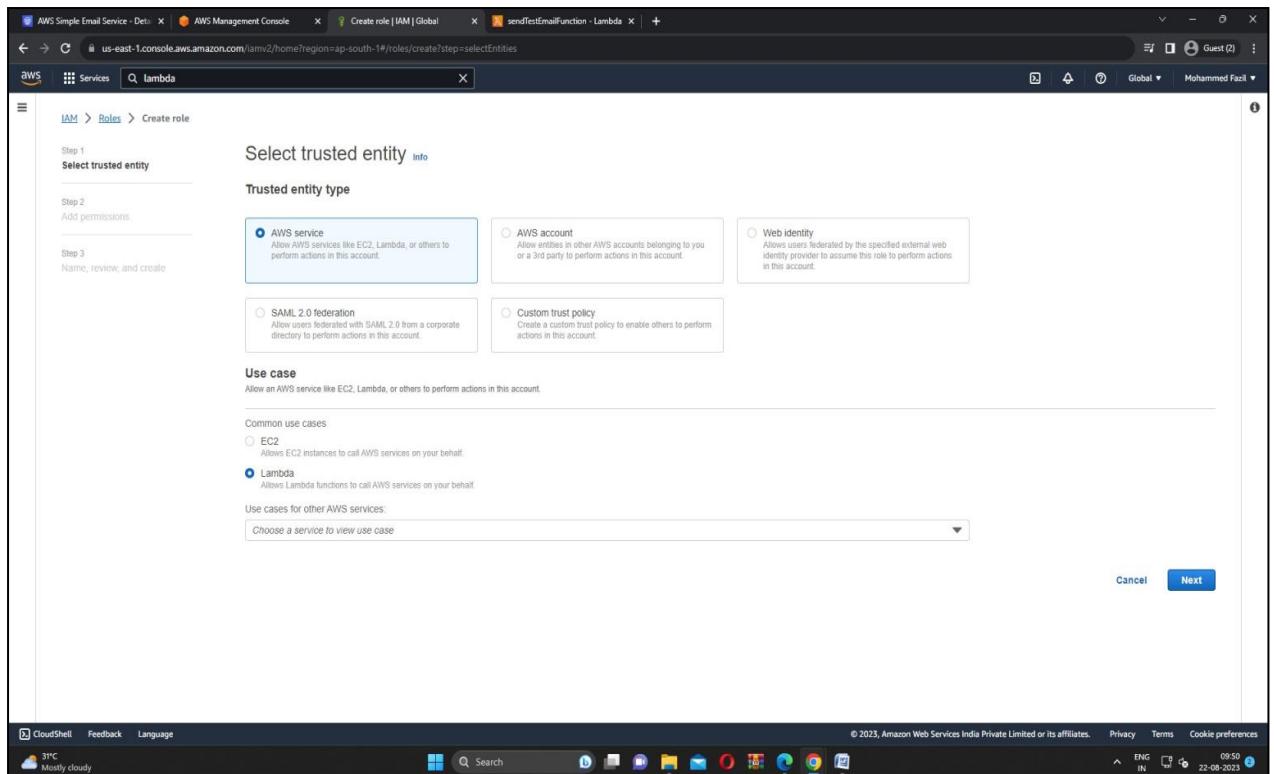
Step 1: Search “Amazon SES” in AWS account and click create identity in top of the page and select Email address for identity type. The user enters the email address and clicks create identity in bottom of the page.

The screenshot shows the 'Create identity' wizard in the AWS SES console. In the 'Identity type' section, the 'Email address' option is selected. An input field contains 'your mail id'. Below it, a note says 'Email address can contain up to 320 characters, including plus signs (+), equals signs (=) and underscores (_).'. A checkbox for 'Assign a default configuration set' is checked, with a note explaining its function. In the 'Tags - optional' section, there are no tags associated with the resource. At the bottom right are 'Cancel' and 'Create identity' buttons.

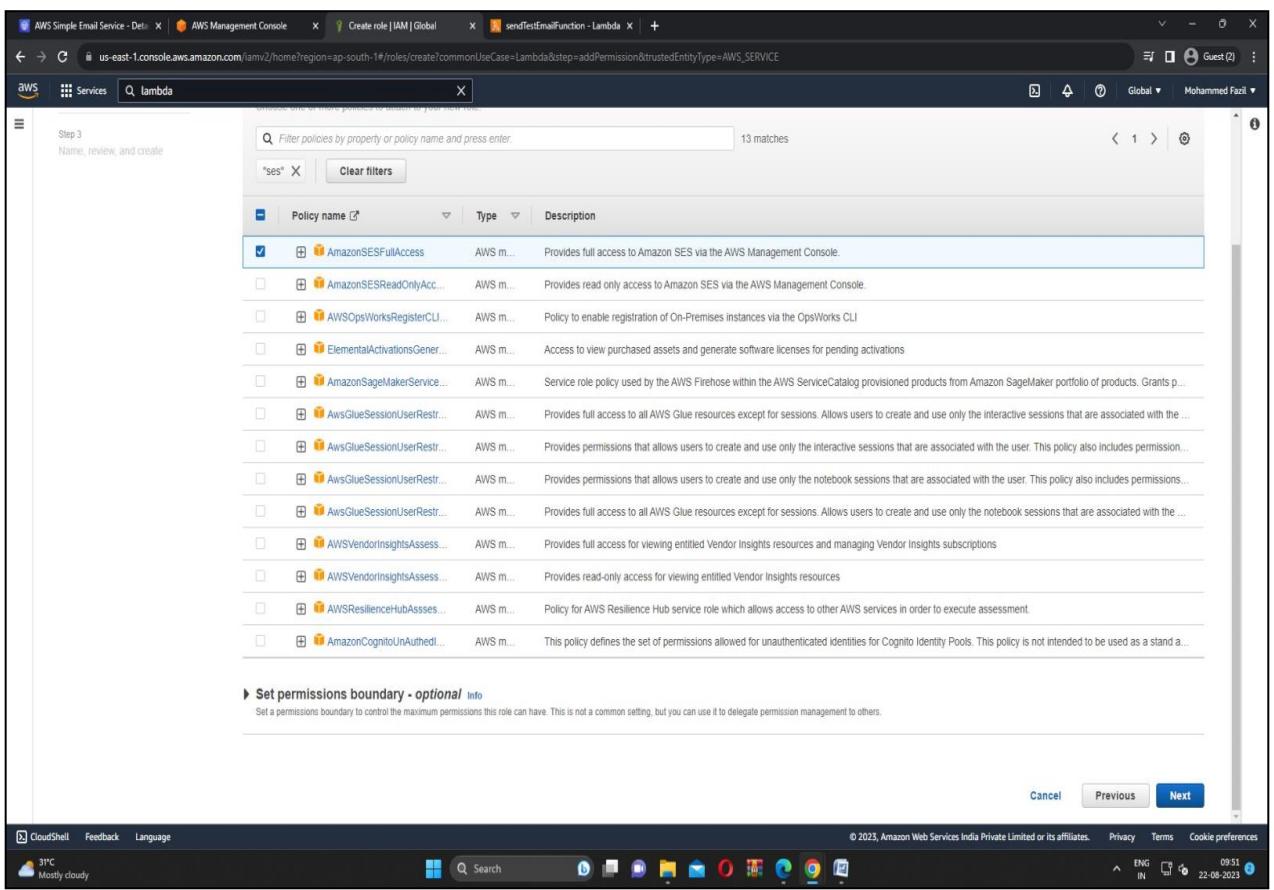
Step 2: Check your previous entered email id. The user got the verification email from AWS, click the verification link and get verified. Now the identity status is verified.

The screenshot shows the 'Verified identities' page in the AWS SES console. It displays a summary for the identity 'atext2sandra@gmail.com'. The 'Identity status' is listed as 'Verified'. Other details include the ARN 'arn:aws:ses:ap-south-1:1989712048740:identity/atext2sandra@gmail.com' and the 'AWS Region' 'Asia Pacific (Mumbai)'. Below this, sections for 'DomainKeys Identified Mail (DKIM)' and 'Custom MAIL FROM domain' are shown, each with an 'Edit' button. A note at the bottom states 'Messages sent through Amazon SES will be marked as originating from your domain instead of a subdomain of amazon.com.'

Step 3: Go to AWS Console and search “IAM” then right click to open link in new tab. The user selects Roles from left side menu and click Create role.



Step 4: The user search “SES” in search bar and select “AmazonSESFullAccess” then click “Next” button in bottom of the page



Step 5: The user enter the role name and click create role button in bottom of the page.

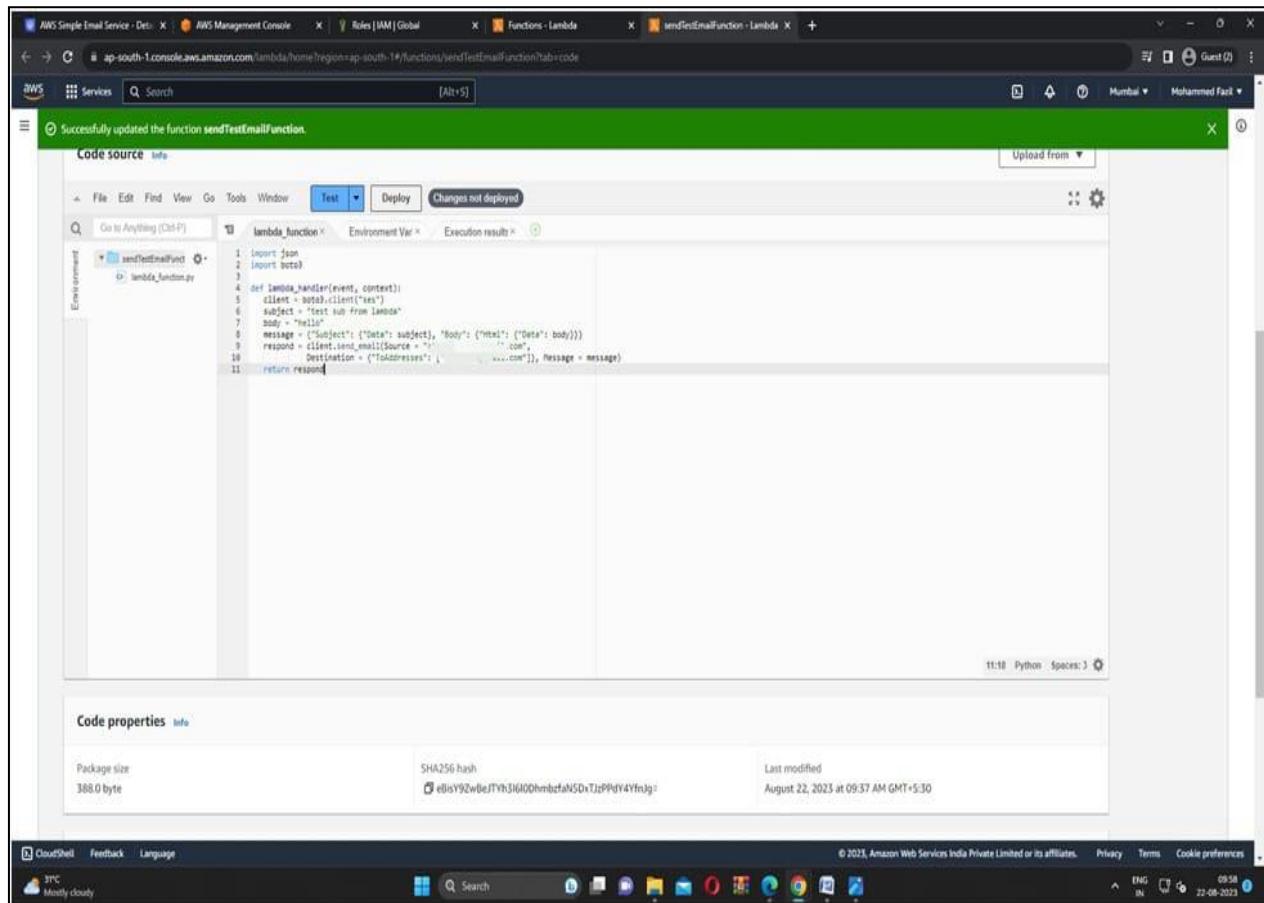
The screenshot shows the 'Create role' wizard in the AWS IAM console. The current step is 'Name, review, and create'. In the 'Role details' section, the 'Role name' is set to 'LambdaEmail'. The 'Description' field contains the text 'Allows Lambda functions to call AWS services on your behalf.' Below this, there is a code editor for the 'Step 1: Select trusted entities' section, displaying a JSON policy document:

```
1- [ {  
2-     "Version": "2012-10-17",  
3-     "Statement": [  
4-         {  
5-             "Effect": "Allow",  
6-             "Action": [  
7-                 "sts:AssumeRole"  
8-             ],  
9-             "Principal": {  
10-                 "Service": [  
11-                     "lambda.amazonaws.com"  
12-                 ]  
13-             }  
14-         }  
15-     ]  
16- }
```

Step 6: Go to AWS console and search “Lambda” Function in search bar then right click to open link in new tap. The user click create function in top of the page. Now select Author from scratch, then type the function name, programming language choose python 3.9, select architecture x86_64, and click the change default execution role and select use an existing role. It shows the roles created in “IAM” then click create function in bottom of the page.

The screenshot shows the 'Create function' wizard in the AWS Lambda console. The 'Author from scratch' option is selected. The 'Function name' is set to 'sendtestemailfunction'. The 'Runtime' is 'Python 3.9'. The 'Architecture' is 'x86_64'. Under 'Permissions', the 'Execution role' is set to 'Use an existing role' with the value 'LambdaSESFullAccess'. The 'Advanced settings' section is collapsed. At the bottom, there are 'Cancel' and 'Create function' buttons.

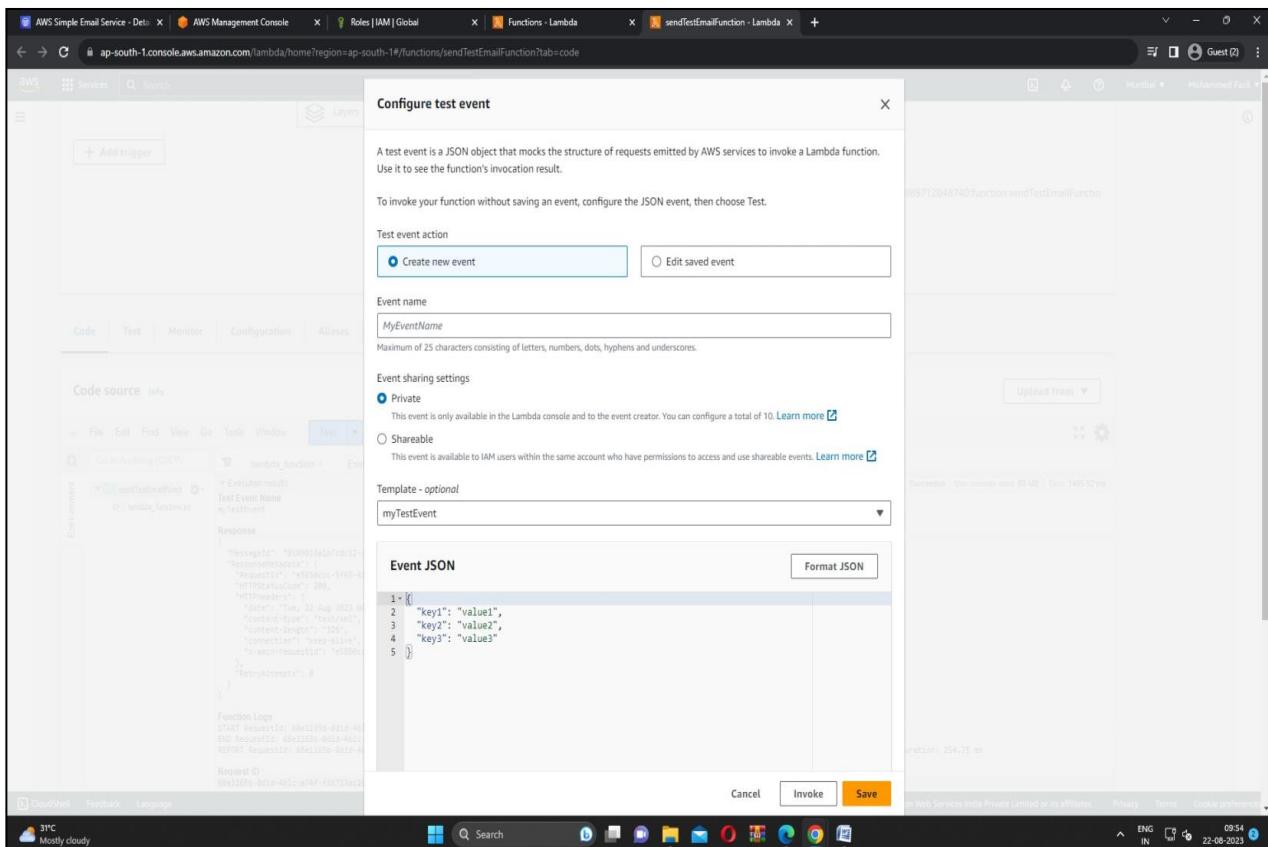
Step 7: After the step 6, successfully created the function email. You can now change its code and configuration. To invoke your function with a test event, choose "Test".



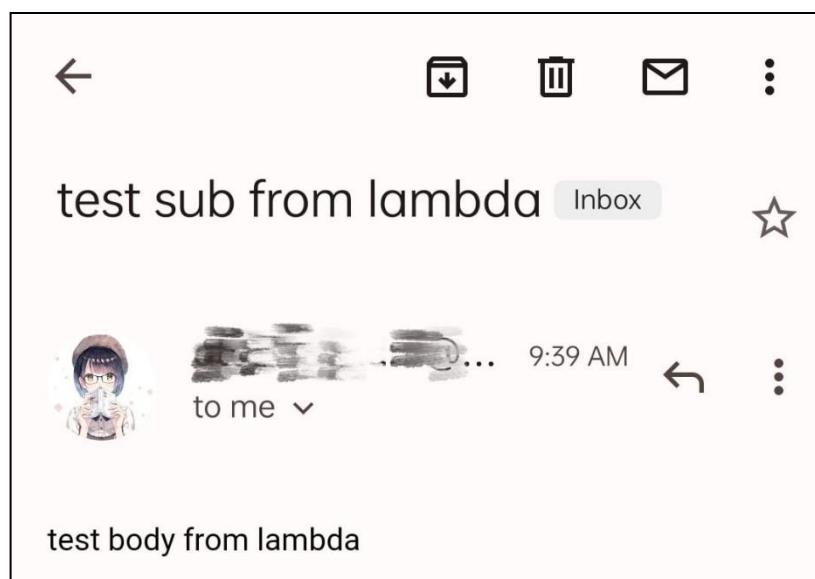
Python Source code:

```
import json
import boto3
def lambda_handler(event, context):
    client = boto3.client("ses")
    subject = "test sub from lambda"
    body = "test body from lambda"
    message = {"Subject": {"Data": subject}, "Body": {"Html": {"Data": body}}}
    respond = client.send_email(Source = "sender mail id",
                                 Destination = {"ToAddresses": ["receiver mail id"]}, Message = message)
    return respond
```

Step 8: The user configure test event action, event name, event sharing settings and click save button in bottom of the page. Finally click Test button.



Step 9: Check your Source email id (send list) and destination email id (inbox)



EX.NO : 7

DATE :

EXPLORE STATIC WEBSITE WITH S3 AND CLOUD FRONT

Step 1: Download the any free website templates from free-css.com and extract the downloaded file.

Step 2: Search S3 from aws console and click create bucket then type the bucket name "crescentstaticwebsite". The S3 bucket was created successfully.

The screenshot shows the AWS S3 Management Console interface. At the top, there's a header bar with the AWS logo, a search bar, and navigation links. Below the header, the main content area is titled "Amazon S3". It features a section titled "Account snapshot" with a "View Storage Lens dashboard" button. The main focus is the "Buckets (3) Info" section, which lists three buckets: "crescentweb", "stticweb", and "stticweb3". Each bucket entry includes columns for Name, AWS Region, Access, and Creation date. The "crescentweb" bucket was created on September 12, 2023, at 09:32:02 (UTC+05:30). The "stticweb" bucket was created on September 12, 2023, at 10:05:44 (UTC+05:30). The "stticweb3" bucket was created on September 14, 2023, at 14:43:55 (UTC+05:30). At the bottom of the page, there are links for CloudShell, Feedback, Language, and a footer with copyright information.

The screenshot shows the "Create bucket" configuration page in the AWS S3 Management Console. The title bar indicates the URL is s3.console.aws.amazon.com/s3/bucket/create?region=ap-south-1. The page has a breadcrumb navigation path: Amazon S3 > Buckets > Create bucket. The main form is titled "Create bucket" with an "Info" link. It contains a "General configuration" section where the "Bucket name" is set to "Crescentstaticwebsite". A note states that the bucket name must be unique within the global namespace and follow the bucket naming rules, with a link to "See rules for bucket naming". The "AWS Region" is set to "Asia Pacific (Mumbai) ap-south-1". Below this, there's an optional "Copy settings from existing bucket" section with a "Choose bucket" button. The bottom of the page features an "Object Ownership" section with an "Info" link, explaining object ownership control. The footer includes links for CloudShell, Feedback, Language, and a footer with copyright information.

Step 3: Select the “crescentstaticwebsite” S3 bucket and click upload, first add files from extracted website templates then add the remaining folders. Then click upload.

The screenshot shows the AWS S3 console interface. The top navigation bar includes the AWS logo, Services, a search bar, and user information (Global, G.David Raj). Below the navigation is a breadcrumb trail: Amazon S3 > Buckets > crescentstaticwebsite. The main content area is titled "crescentstaticwebsite" with an "info" link. A horizontal menu bar below the title includes "Objects", "Properties", "Permissions", "Metrics", "Management", and "Access Points". The "Objects" tab is active. A sub-section titled "Objects (0)" displays a message about objects in S3 and a "Find objects by prefix" search input. Below this is a table header for "Name", "Type", "Last modified", "Size", and "Storage class". A message "No objects" indicates there are no objects in the bucket. At the bottom of the table area is another orange "Upload" button. The footer of the page includes links for CloudShell, Feedback, Language, and copyright information: © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences.

This screenshot shows the "Upload" step in the AWS S3 console. The top navigation bar and breadcrumb trail are identical to the previous screenshot. The main content area is titled "Files and folders (20 Total, 751.2 KB)". It shows a table of 20 files and folders with columns for Name, Folder, Type, and Size. The table includes files like "wow.min.js", "applight-wave.svg", and various "appstore" and "arrow" images. At the top of this table are three buttons: "Remove", "Add files", and "Add folder". Below the table is a "Destination" section with a dropdown menu labeled "Destination". The footer links are the same as the previous screenshot.

Step 4: Search “cloud front” in aws console and click “create distribution”. Oriin domain can be showed, and select the particular S3 bucket, then change origin access to “Origin access control settings (recommended)”. Finally fill the “Default root object – optional” with index.html and clicks create distribution.

This screenshot shows the "Create distribution" step in the AWS CloudFront Management Console. The top navigation bar includes the AWS logo, Services, a search bar, and user information (Global, G.David Raj). Below the navigation is a breadcrumb trail: CloudFront > Distributions > Create. The main content area is titled "Create distribution". A section titled "Origin" contains a "Origin domain" field with a dropdown menu. The dropdown menu shows "crescentstaticwebsite.s3.ap-south-1.amazonaws.com" as the selected item, with "Use: crescentstaticwebsite.s3.ap-south-1.amazonaws.com" displayed below it. Other options in the dropdown include "Amazon S3" (with items "crescentstaticwebsite.s3.amazonaws.com" and "crescentweb.s3.amazonaws.com") and "Elastic Load Balancer" (with "No origins available"). Below the dropdown are sections for "API Gateway" (with "No origins available") and "MediaStore container" (with "No origins available"). The footer links are the same as the previous screenshots.

The screenshot shows the 'Create distribution' wizard in the AWS CloudFront console. The current step is 'Set origin access control'. The 'Name' field contains 'crescentstaticwebsite.s3.ap-south-1.amazonaws.com'. Under 'Origin access', the 'Origin access control settings (recommended)' option is selected. In the 'Bucket policy' section, a note states: 'You must update the S3 bucket policy. CloudFront will provide you with the policy statement after creating the distribution.' The bottom of the page includes standard AWS navigation links like CloudShell, Feedback, Language, and a copyright notice.

This screenshot shows the 'Create control setting' dialog box overlaid on the main distribution creation page. It contains fields for 'Name' (set to 'crescentstaticwebsite.s3.ap-south-1.amazonaws.com'), 'Description - optional' (left empty), and 'Signing behavior' (with 'Sign requests (recommended)' selected). The 'Origin type' dropdown is set to 'S3'. At the bottom right of the dialog is a 'Create' button.

Step 5: The new distribution was created successfully and copy policy.

The screenshot shows the 'E22VU1E6KLOX8V' distribution details page. A green success message at the top states 'Successfully created new distribution.' Below it, a yellow warning message says 'The S3 bucket policy needs to be updated' and provides a link to 'Go to S3 bucket permissions to update policy'. The 'General' tab is selected, showing the distribution domain name 'de501v5u4u966.cloudfront.net' and ARN 'arn:aws:cloudfront::022332965591:distribution/E22VU1E6KLOX8V'. The 'Last modified' status is 'Deploying'. At the bottom right of the page is an 'Edit' button.

Step 6: Go to S3 and select particular bucket “crescentstaticwebsite” permissions. Then edit bucket policy and paste the copy policy (previously copied in cloud front distribution) and click save changes.

```

1 Version: "2008-10-17",
2 Id: "PolicyForCloudFrontPrivateContent",
3 Statement: [
4     {
5         Sid: "AllowCloudFrontServicePrincipal",
6         Effect: "Allow",
7         Principal: [
8             "Service": "cloudfront.amazonaws.com"
9         ]
10    }
11]
  
```

The screenshot shows the AWS S3 console with the path: Amazon S3 > Buckets > crescentstaticwebsite > Edit bucket policy. The policy editor interface is displayed, showing a JSON-based policy. A modal window titled 'Edit statement' is open on the right, with the heading 'Select a statement' and the instruction 'Select an existing statement in the policy or'. At the bottom of the page, there are links for CloudShell, Feedback, Language, and a copyright notice for 2023, Amazon Web Services India Private Limited or its affiliates.

Step 7: Select particular bucket “crescentstaticwebsite” properties. Then edit “Static website hosting” and choose enable. Then “index document” is filled by index.html and click save changes.

The screenshot shows the AWS S3 console with the path: Amazon S3 > Buckets > crescentstaticwebsite > Edit static website hosting. The static website hosting configuration is shown, with the 'Enable' radio button selected. A note below explains that enabling static website hosting makes all content publicly readable. The 'Index document' field is set to 'index.html'. The bottom of the page includes links for CloudShell, Feedback, Language, and a copyright notice for 2023, Amazon Web Services India Private Limited or its affiliates.

The screenshot shows the AWS S3 console with the path: Amazon S3 > Buckets > crescentstaticwebsite > Edit static website hosting. The static website hosting configuration is shown, with the 'Enable' radio button selected. A note below explains that enabling static website hosting makes all content publicly readable. The 'Index document' field is set to 'index.html'. The bottom of the page includes links for CloudShell, Feedback, Language, and a copyright notice for 2023, Amazon Web Services India Private Limited or its affiliates.

Step 8: Go to cloud front origin and copy the distribution domain name (de501v5u4u966.cloudfront.net) and paste it in browser new tab.

The screenshot shows the AWS CloudFront console with a green success message at the top: "Successfully created new distribution." Below it, the distribution details are shown for "E22VU1E6KLOX8V". The "General" tab is selected. Key information includes:

- Distribution domain name: [de501v5u4u966.cloudfront.net](#)
- ARN: arn:aws:cloudfront::022332965591:distribution/E22VU1E6KLOX8V
- Last modified: September 20, 2023 at 5:43:44 AM UTC

Other tabs visible include Origins, Behaviors, Error pages, Geographic restrictions, Invalidations, and Tags. The bottom of the screen shows the AWS navigation bar and system status.

Step 9: Finally the static website is hosted using S3 and Cloud front.

The screenshot shows a web browser displaying the "AppLight Template By W3 Template" website. The page features a purple header with the "AppLight" logo and a navigation menu with links to HOME, ABOUT, FEATURES, TEAM, TESTIMONIALS, FAQ, and CONTACT. The main content area has a purple background and displays the following text and images:

- Best App Website Template**
- This awesome template designed by [W3 Template](#).
- A snippet of placeholder text: "Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur hendrerit neque massa, sit amet tristique ante porta ut. In sodales et justo vel vulputate. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas."
- Two download buttons: "Download on [App Store](#)" and "Get it on [Google play](#)".
- A large smartphone icon showing a digital wallet interface with various coins and a balance of \$9288.31.

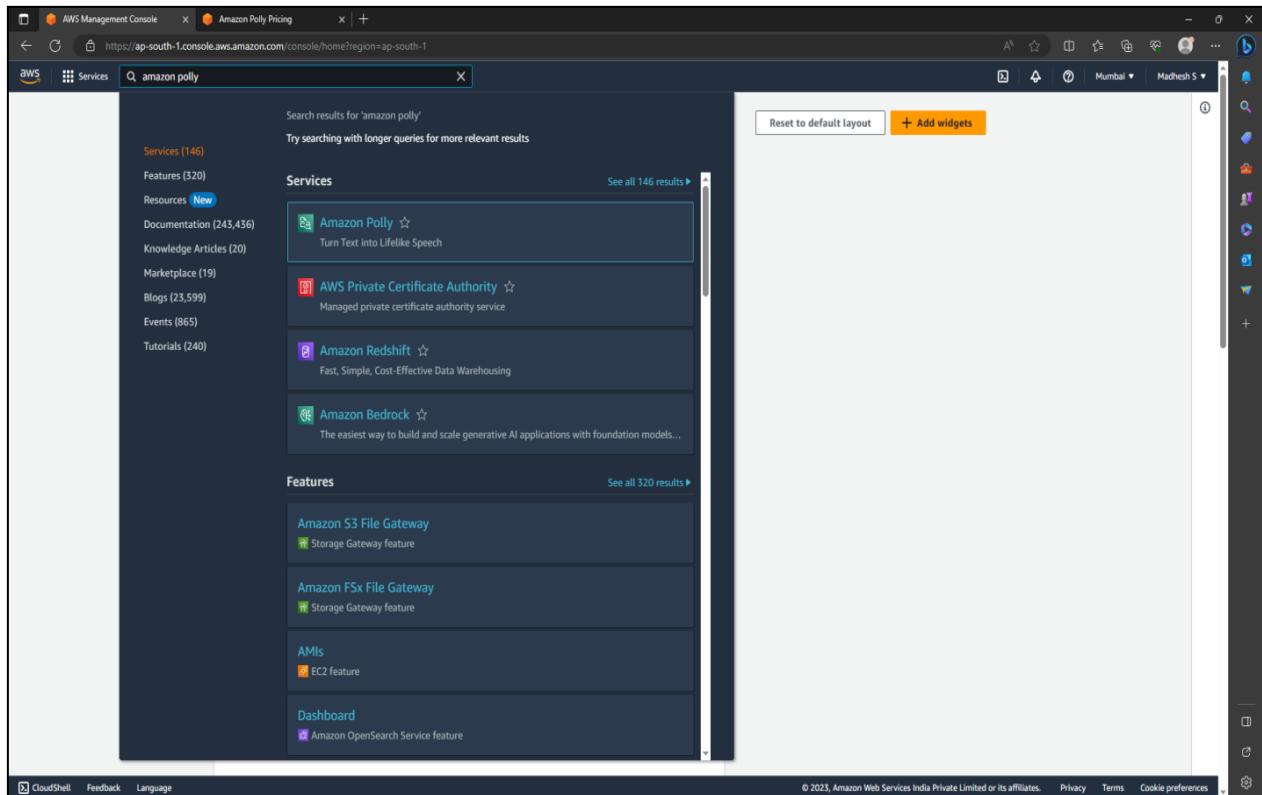
The bottom of the screen shows the Windows taskbar with various pinned icons and system status.

EX.NO : 8

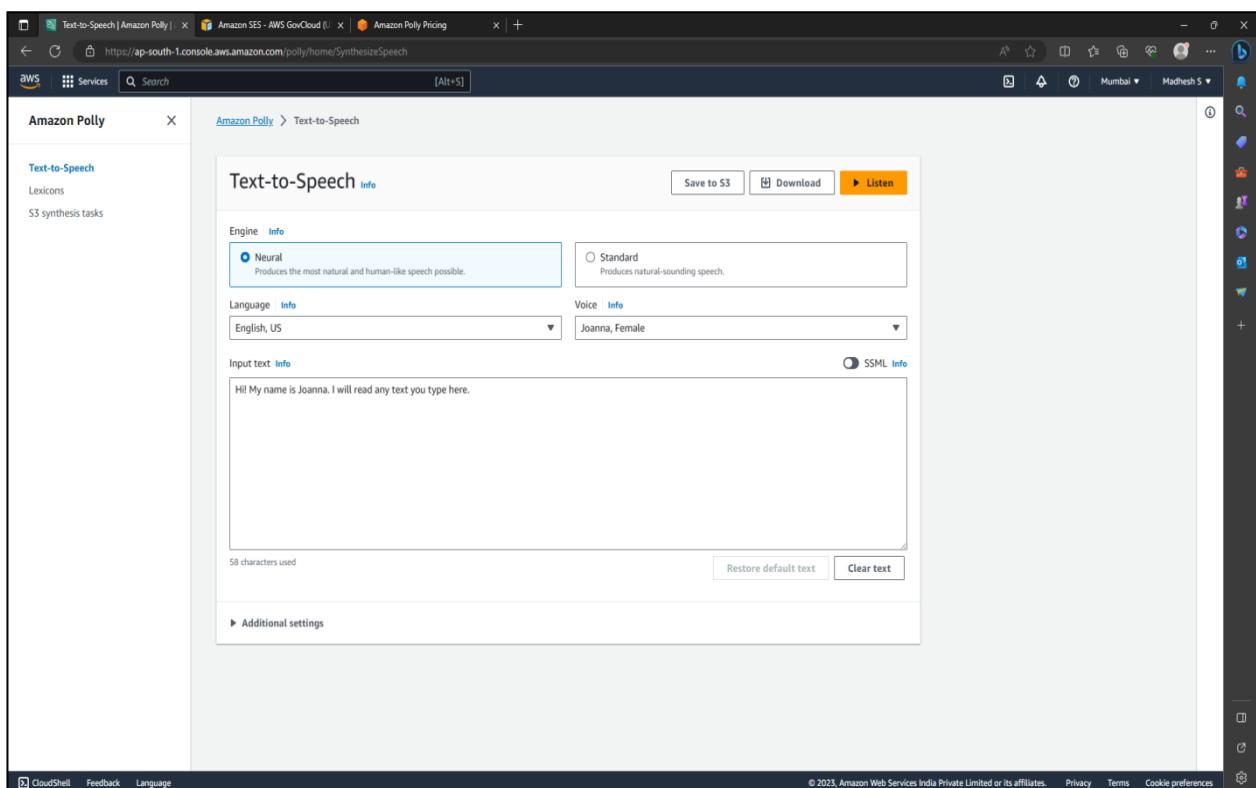
DATE :

CREATE A TEXT-TO-SPEECH CONVERSION WITH SAGE MAKER (AWS Polly)

Step 1: Enter the AWS Console Home Page and search for Amazon Polly

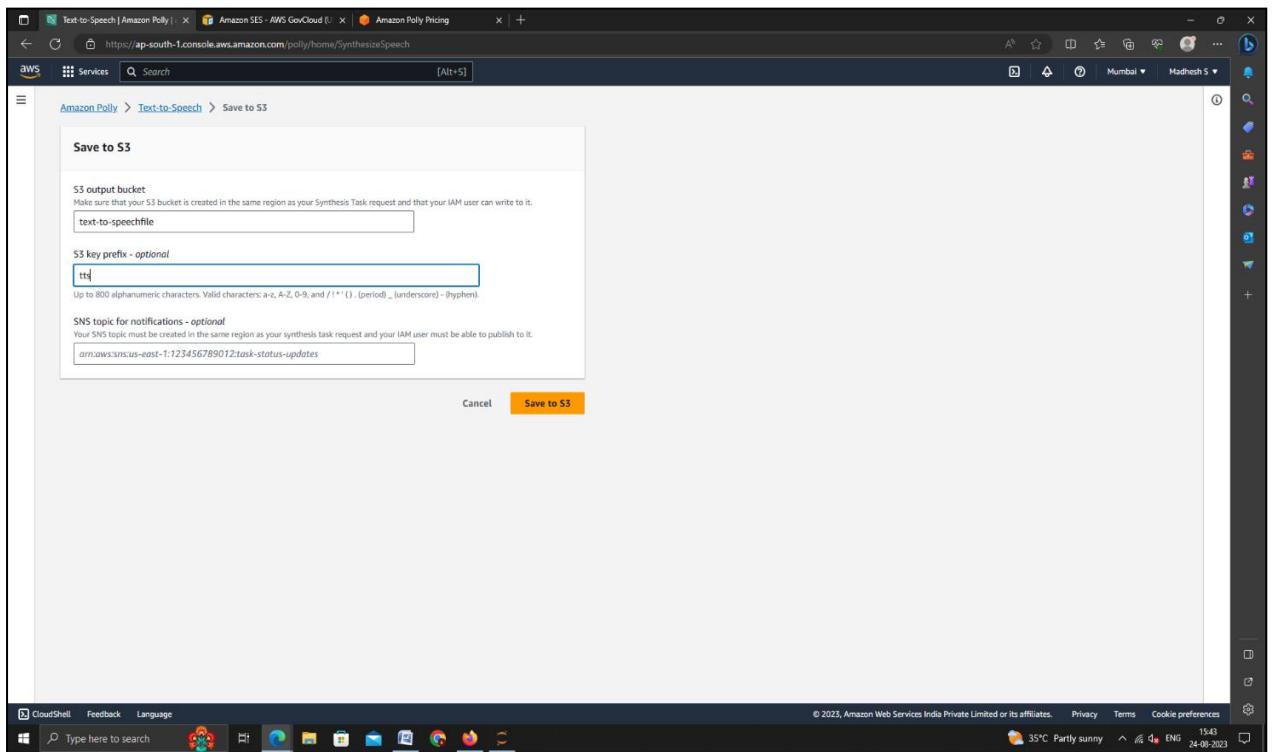


Step 2: Now click on Amazon Polly



Step 3: Now enter the text that you want to convert and the presses listen.

Step 4: The audio file is even saving in S3 bucket.



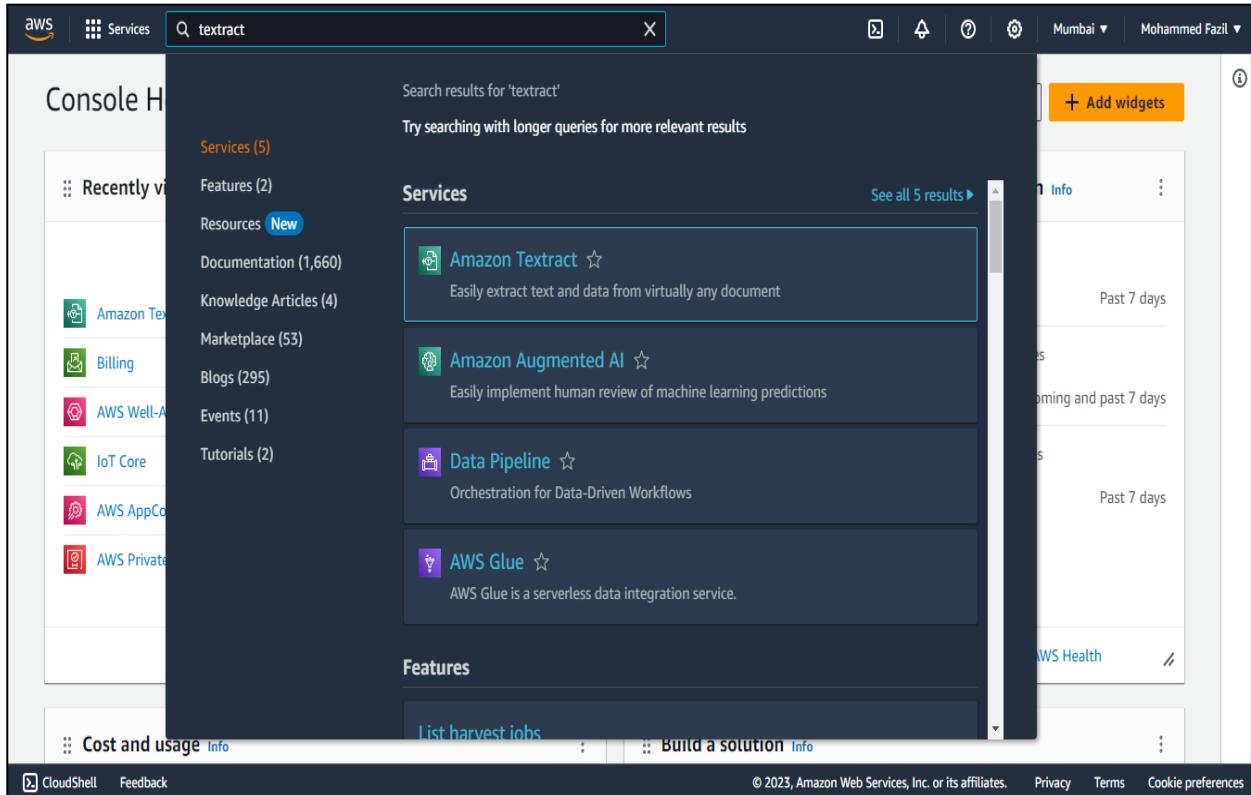
Step 5: Press save to S3 and audio file will be saved in S3.

EX.NO : 9

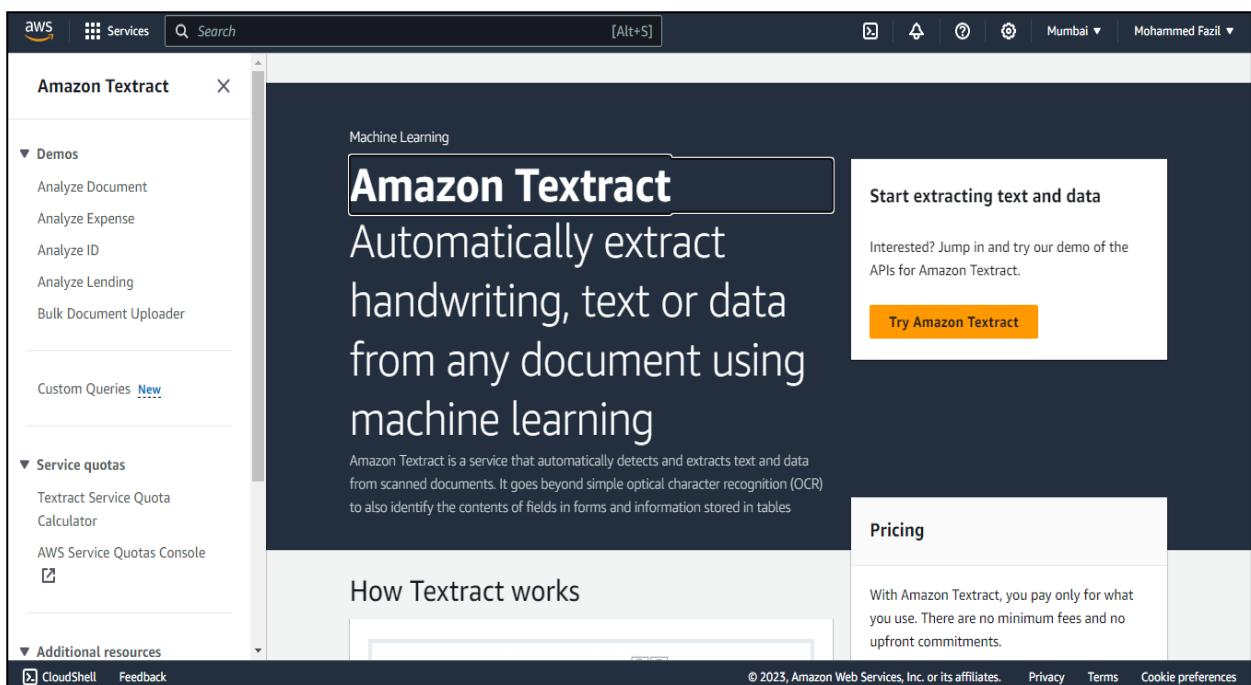
DATE :

IMPLEMENT THE N VISION ENABLES MACHINE LEARNING SERVICES FOR TEXT EXTRACTION FROM IMAGES

Step 1: Log-In into your AWS account and search for Amazon Textract.



Step 2: Once the page has open then click on Try Amazon Textract



Step 3: Click on Choose Documents to upload the document that you want to extract the Texts.

The screenshot shows the AWS Services navigation bar with 'Amazon Textract' selected. On the left, a sidebar lists 'Demos' (Analyze Document, Analyze Expense, Analyze ID, Analyze Lending, Bulk Document Uploader), 'Service quotas' (Textract Service Quota, Calculator, AWS Service Quotas Console), and 'Additional resources'. The main area displays a sample document image of a paystub with various text fields highlighted. To the right, the extracted text is listed in boxes: Payroll check number: 000000000, Pay date: 7/25/2008, ANYTOWN USA 10101, Social Security No.: 987-65-4321, Pay to the, order of: JOHN STILES, This amount: TWO HUNDRED NINETY-ONE AND 90/100 DOLLARS, \$291.90, SAMPLE, NON-NEGOTIABLE, BANK NAME, VOID VOID VOID, AUTHORIZED, Authorized, SIGNATURE Signature, STREET ADDRESS, CITY STATE ZIP, VOID AFTER 90 DAYS, 0013791220004964040110157, and THEORIGINALDOCUMENTHASAREFLECTIVEWATERMARKONTHEBACK.

Step 4: Once uploaded the image and now select the type of output want to get.

The screenshot shows the same AWS Services navigation bar and sidebar as the previous step. The 'Configure document' dialog is open on the right, specifically the 'Data output' section. It contains a heading 'Choose data outputs' and a list of options with checkboxes: 'Layout' (checked), 'Forms', 'Tables', 'Queries', and 'Signature detection'. Descriptions for each option are provided below them. At the bottom of the dialog are 'Cancel' and 'Apply configuration' buttons.

Step 5: Now click on Apply Configuration to get the desire output.

The screenshot shows the Amazon Textract service in the AWS console. The left sidebar lists 'Demos' and 'Service quotas'. Under 'Demos', 'Analyze Document' is selected. The main content area is titled 'Analyze Document' with a 'Info' link. It displays a sample document containing the text 'Can a computer read this text? It depends.' A yellow box highlights this text. On the right, there are tabs for 'Raw text' and 'Layout', with 'Raw text' selected. Below it, the 'Results' section shows the analyzed text: 'Can a computer read this text?' and 'It depends.' There are search and segment-by-line buttons. The bottom of the page includes standard AWS footer links: CloudShell, Feedback, © 2023, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

Step 6: The user can download the output by clicking on Download results.

EX.NO : 10

DATE :

CREATE A CHAT BOT APPLICATION USING ARTIFICIAL INTELLIGENCE (AI) IN AWS

Step 1: Log in into your AWS account and search for Amazon Lex. Amazon Lex is only supported for specific regions only.

The screenshot shows the AWS Lambda console interface. At the top, there's a navigation bar with tabs for 'Lambda' and 'CloudWatch Metrics'. Below the navigation bar, there's a search bar and a 'Create Function' button. The main area displays a table with columns for 'Function Name', 'Runtime', 'Memory', 'Timeout', and 'Last Update'. One row in the table is highlighted in blue, showing 'HelloWorldFunction' as the function name, 'nodejs14.x' as the runtime, '128 MB' as memory, '3 seconds' as timeout, and '2023-08-15' as the last update. At the bottom of the page, there's a 'Next Step' button labeled 'Deploy'.

Region Unsupported
Amazon Lex is not available in Asia Pacific (Mumbai). Please select another region.

Supported Regions

- Africa (Cape Town)
- Europe (London)
- Europe (Ireland)
- Asia Pacific (Seoul)
- Asia Pacific (Tokyo)
- Canada (Central)
- Asia Pacific (Singapore)
- Asia Pacific (Sydney)
- Europe (Frankfurt)
- US East (N. Virginia)
- US West (Oregon)

Step 2: Click on create bot, next page will open and fill the required details.

The screenshot shows the AWS Lex Bots page. On the left sidebar, there are links for 'Bot templates New', 'Networks of bots New', 'Test workbench New', 'Test sets', 'Test results', 'Related resources', and 'Return to the V1 console'. The main area displays two sections: 'Bots (0) Info' and 'Import/export history (0) Info'. Both sections have search bars and tables with columns like Name, Description, Status, Latest Version, Last updated, Type, Bot, Status, Errors, Last updated, File, and Version. Below each table, it says 'No [section] found' and has a 'Create [section]' button. At the bottom, there are links for 'CloudShell', 'Feedback', and copyright information: '© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

Step 3: The creation method choose on create a blank method, type the bot name should be alphabet and Numbers like chatbot1 , IAM permissions select on new role , Children's Online Privacy Protection Act (COPPA) select on yes, and Idle session timeout set on 5 minutes.

The screenshot shows the 'Configure bot settings' page for Step 1. On the left sidebar, there are links for 'Step 2' and 'Add languages'. The main area has a title 'Configure bot settings' with an 'Info' link. It contains two sections: 'Creation method' and 'Bot configuration'. In the 'Creation method' section, there are three options: 'Create a blank bot' (selected), 'Start with an example', and 'Start with transcripts'. In the 'Bot configuration' section, there is a 'Bot name' field containing 'chatbot1', with a note that maximum 100 characters are allowed. There is also a 'Description - optional' field with the placeholder 'IT HelpDesk bot for employees in the North America office.' and a note that maximum 200 characters are allowed. At the bottom, there are links for 'Feedback', copyright information: '© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences', and a user profile: 'Mohammed Fazil'.

The screenshot shows the 'IAM permissions' configuration step in the AWS Lex console. It includes sections for creating a runtime role (choosing 'Create a role with basic Amazon Lex permissions'), a note about role creation time, and a section for COPPA compliance (selecting 'No').

Step 4: Click on next. And click on done.

The screenshot shows the 'Add languages' step in the AWS Lex console. It allows setting the language to English (US), selecting a voice interaction (Danielle), and defining intent classification confidence score thresholds. A 'Done' button is visible at the bottom right.

Step 5: Once you click on done, now enter the intent name, sample utterances and the message.

The screenshot shows the 'Intent details' configuration step in the AWS Lex console. It displays a success message ('Successfully built language English (US) in bot: chatbot') and fields for the intent name ('whatsyourname'), description, and ID. The 'Editor' tab is selected at the bottom.

The screenshot shows the Amazon Lex console interface. At the top, there's a green banner indicating "Successfully built language English (US) in bot: chatbot1". Below this, the "Draft version" and "English (US)" dropdowns are visible, along with a "Successfully built" button. On the left, a sidebar lists intents: "whatsyourname" (highlighted in orange) and "FallbackIntent". The main area is titled "Sample utterances (2) Info" and contains two entries: "what is your name" and "what are you called". There are "Preview" and "Plain text" tabs, and a "Save intent" button at the bottom right.

Step 6: Now click on save intent. And then click on build.

The screenshot shows the "Initial response" configuration for the "whatsyourname" intent. It includes sections for "Response to acknowledge the user's request" (with a message template "Message: my name is sample bot") and "Message group" (with a message template "my name is sample bot"). There are also "Variations - optional" and "Advanced options" sections. The "Editor" tab is selected at the bottom.

Step 7: Click on test to your chat bot.