



## **CLOUD COMPUTING LAB** **BSE ( V-B )**

Submitted By:

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Roll No:

2023-BSE-045

Submitted To:

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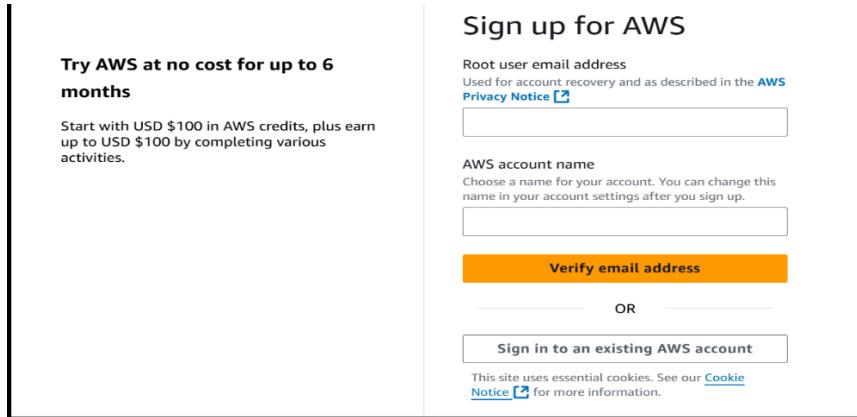
## **LAB 08**

**AWS: Account Setup, IAM, VPC Inventory,  
EC2, Docker & Gitea**

## Task 1

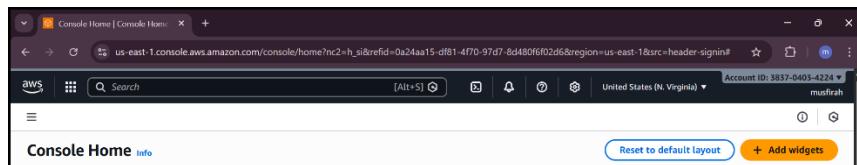
### Create an AWS account and enable UAE (me-central-1)

- AWS signup page:



The screenshot shows the AWS Sign Up page. On the left, there's a promotional section for trying AWS at no cost for up to 6 months, mentioning USD \$100 in credits. On the right, there are fields for 'Root user email address' and 'AWS account name'. Below these are buttons for 'Verify email address' and 'Sign in to an existing AWS account'. A note at the bottom states: 'This site uses essential cookies. See our [Cookie Notice](#) for more information.'

- Root user signed in:

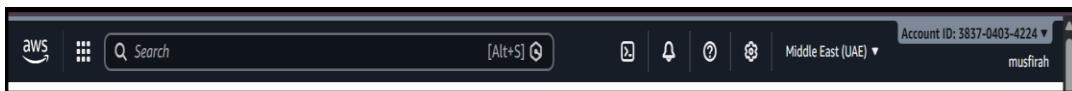


- Enable region me-central-1:



<input type="checkbox"/> Europe (Zurich)	Disabled
<input type="checkbox"/> Europe (Milan)	Disabled
<input type="checkbox"/> Europe (Spain)	Disabled
<input type="checkbox"/> Israel (Tel Aviv)	Disabled
<input type="checkbox"/> Middle East (UAE)	Enabled
<input type="checkbox"/> Middle East (Bahrain)	Disabled
<input type="checkbox"/> Mexico (Central)	Disabled

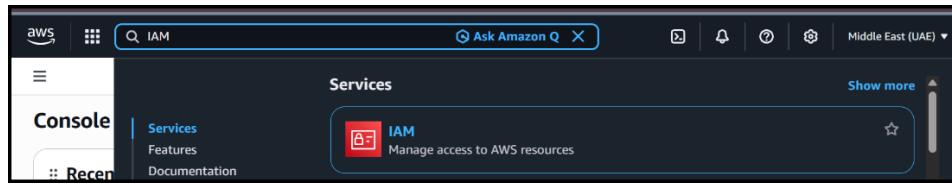
- task1 summary:



## Task 2

### Create IAM Admin and Lab8User with console access

- open iam console:



- admin create confirmation:

A screenshot of the 'Users' page in the AWS IAM console. A green success message box at the top says 'User created successfully'. Below it, a table shows two users: 'Admin' and 'Admin'. The 'Create user' button is visible on the right.

- admin csv and signin url:

A screenshot of a Microsoft Excel spreadsheet. It contains a single row with the following data: 'Admin\_credentials', '12/27/2025 4:39 PM', 'Microsoft Excel Com...', and '1 KB'. The file type is indicated by a CSV icon.

- admin console after login:

A screenshot of the AWS Console Home page. The top navigation bar shows 'Account ID: 5837-0403-4224' and 'Admin'. The main content area displays a 'Console Home' card with a 'Reset to default layout' button and an 'Add widgets' button.

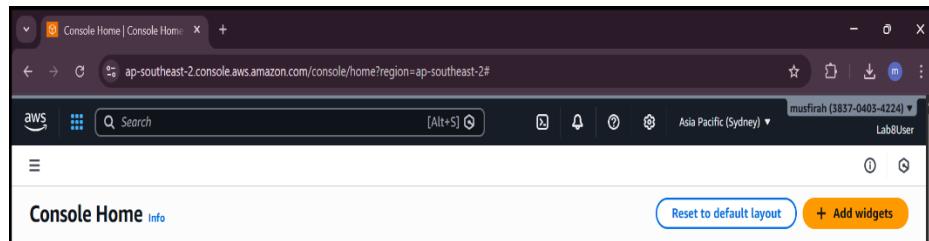
- create lab8user and csv:

A screenshot of the 'Create user' step 3 review page. A green success message box says 'User created successfully'. Below it, the 'Console sign-in details' section shows the 'Console sign-in URL' as 'https://583704034224.signin.aws.amazon.com/console' and the 'User name' as 'Lab8User'. There are also 'Email sign-in instructions' and 'Add to MFA devices' buttons.

- lab8user csv saved:

A screenshot of a Microsoft Excel spreadsheet. It contains two rows of data: 'Lab8User\_credentials' with timestamp '12/27/2025 4:54 PM', 'Microsoft Excel Com...', and '1 KB'; and 'Admin\_credentials' with timestamp '12/27/2025 4:48 PM', 'Microsoft Excel Com...', and '1 KB'. The file type is indicated by a CSV icon.

- lab8User logged in:



- task2 summary:

Users (3) <a href="#">Info</a>						
<a href="#">Create user</a> <span style="float: right;">Delete</span>						
	User name	Path	Group:	Last activity	MFA	Password age
<input type="checkbox"/>	<a href="#">Admin</a>	/	0	23 minutes ago	Passke...	18 minutes
<input type="checkbox"/>	<a href="#">Lab8User</a>	/	0	7 minutes ago	-	3 minutes

## Task 3

### Inspect VPC resources (in UAE me-central-1)

- open\_vpc\_console:

The screenshot shows the AWS VPC console. At the top, there are buttons for 'Create VPC' and 'Launch EC2 Instances'. A note says 'Note: Your instances will launch in the Asia Pacific region.' On the left, a sidebar lists 'Resources by Region' with sections for VPCs, Subnets, Route Tables, Internet Gateways, Express-only Internet Gateways, DHCP option sets, Elastic IPs, Endpoints, and Instance Connect Endpoints. Each section shows the count in the 'me-central-1' region. To the right, there are several panels: 'Service Health' (View complete service details), 'Settings' (Block Public Access, Zones, Console Experiments), 'Additional Information' (VPC Documentation, All VPC Resources, Forums, Report an Issue), 'AWS Network Manager' (Get started with Network Manager), and 'Site-to-Site VPN Connections' (Amazon VPC enables you to use your own isolated resources within the AWS Cloud, and then connect those resources directly to your own datacenter using industry-standard encrypted IPsec VPN connections). A 'Create VPN Connection' button is located at the bottom right of the 'Site-to-Site VPN Connections' panel.

- **vpcs\_list:**

Your VPCs											
Your VPCs (1) <a href="#">Info</a>											
Last updated 4 minutes ago <a href="#">Actions</a> <a href="#">Create VPC</a>											
Find VPCs by attribute or tag											
<input type="checkbox"/>	Name	VPC ID	State	Encryption c...	Encryption control ...	Block Public...	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table	Main network ACL
<input type="checkbox"/>	-	vpc-09ee65582139e8ee6	Available	-	-	Off	172.31.0.0/16	-	dopt-01a915770433e...	rtb-054edb042c137fb36	acl-048b5d4190cc2120b

- **subnets\_list:**

Subnets (3) <a href="#">Info</a>											
Subnets (3) <a href="#">Info</a>											
Last updated less than a minute ago <a href="#">Actions</a> <a href="#">Create subnet</a>											
Find subnets by attribute or tag											
<input type="checkbox"/>	Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID	Available IPv4 addresses	Availability Zone	
<input type="checkbox"/>	-	subnet-0077e092a20e15321	Available	vpc-09ee65582139e8ee6	Off	172.31.0.0/20	-	-	4091	ap-southeast-2a1 (ap-southeast-2a)	
<input type="checkbox"/>	-	subnet-0ff1711c5ab03249	Available	vpc-09ee65582139e8ee6	Off	172.31.16.0/20	-	-	4091	ap-southeast-2a2 (ap-southeast-2c)	
<input type="checkbox"/>	-	subnet-0xe21943cc374b55	Available	vpc-09ee65582139e8ee6	Off	172.31.32.0/20	-	-	4091	ap-southeast-2a3 (ap-southeast-2b)	

- **route\_tables\_list:**

Route tables (1) <a href="#">Info</a>											
Route tables (1) <a href="#">Info</a>											
Last updated less than a minute ago <a href="#">Actions</a> <a href="#">Create route table</a>											
Find route tables by attribute or tag											
<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC				Owner ID	
<input type="checkbox"/>	-	rtb-054edb042c137fb36	-	-	Yes	vpc-09ee65582139e8ee6	383704034224				

- **network\_acls\_list:**

Network ACLs (1) <a href="#">Info</a>											
Network ACLs (1) <a href="#">Info</a>											
Last updated less than a minute ago <a href="#">Actions</a> <a href="#">Create network ACL</a>											
Find Network ACLs by attribute or tag											
<input type="checkbox"/>	Name	Network ACL ID	Associated with	Default	VPC ID	Inbound rules count	Outbound rules count			Owner	
<input type="checkbox"/>	-	acl-048b5d4190cc2120b	3 Subnets	Yes	vpc-09ee65582139e8ee6	2 Inbound rules	2 Outbound rules	383704034224			

- **summary:**

The screenshot displays four separate browser tabs, each showing a list of resources from the AWS VPC console:

- Network ACLs:** Shows one Network ACL named "acl-048b5d4190cc2120b" associated with three subnets.
- Subnets:** Shows three subnets: "subnet-0fcf420e09b0ac86a", "subnet-0c555e8a5e3f285c3", and "subnet-02410ae646f6bbbae".
- Route tables:** Shows one Route table named "rtb-0b83af2c02d11e053".
- Your VPCs:** Shows one VPC named "vpc-09ee65582139e8ee6".

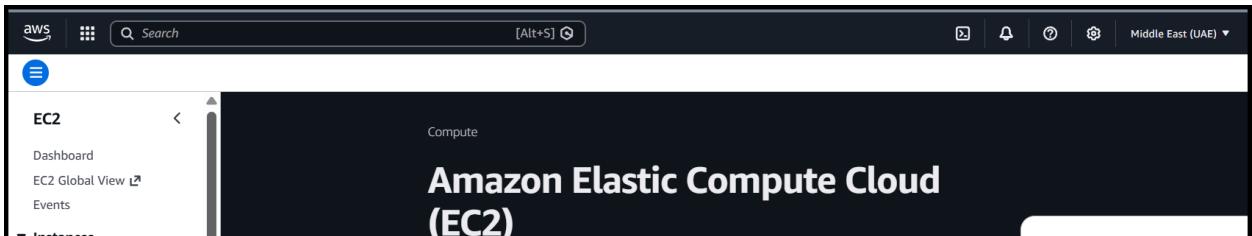
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- Route tables:** Shows one Route table named "rtb-0b83af2c02d11e053".
- Your VPCs:** Shows one VPC named "vpc-0692a0a9ca59e3193".

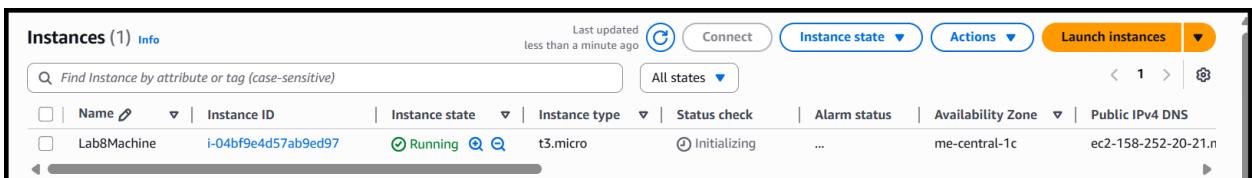
## Task 4

### Launch EC2, SSH, install Docker & Docker Compose, deploy Gitea

- Open EC2 Console



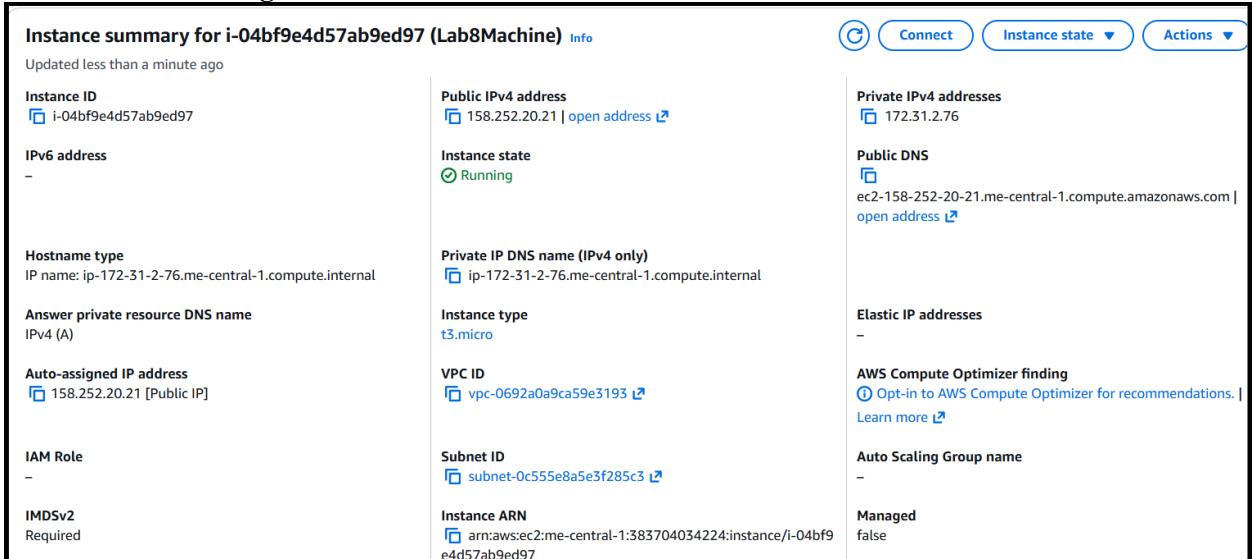
- Launch Instance Config



- Keypair Download



- Instance Running Console



- SSH From Windows To EC2

```
m32> ssh -i "C:\Users\Musfi\OneDrive\AWSKey\Lab8Key.pem" ec2-user@158.252.20.21
Amazon Linux 2023

https://aws.amazon.com/linux/amazon-linux-2023

-2-76 ~]$
```

- EC2 Install Docker Compose Started

```
Installed:
  container-selinux-4:2.242.0-1.amzn2023.noarch
  iptables-libs-1.8.8-3.amzn2023.0.2.x86_64
  libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64
  pigz-2.5-1.amzn2023.0.3.x86_64
  containedr-2.1.5-1.amzn2023.0.1.x86_64
  iptables-nft-1.8.8-3.amzn2023.0.2.x86_64
  libnftnl-1.0.1-19.amzn2023.0.2.x86_64
  runc-1.3.3-2.amzn2023.0.1.x86_64
  docker-25.0.13-1.amzn2023.0.2.x86_64
  libcgroup-3.0-1.amzn2023.0.1.x86_64
  libnftnl-1.2.2-2.amzn2023.0.2.x86_64

Complete!
% Total    % Received % Xferd  Average Speed   Time     Time   Current
               Dload  Upload Total Spent   Left Speed
 0      0     0      0      0      0      0 ---:---:---:---:---:---:---:--- 0
 0      0     0      0      0      0      0      0 ---:---:---:---:---:---:---:--- 0
100 29.8M  100 29.8M  0      0  43.8M      0 ---:---:---:---:---:---:---:--- 43.8M
[ec2-user@ip-172-31-2-76 ~]$
```

- Vim Compose YAML Paste

```
ec2-user@ip-172-31-2-76:~
services:
  gitea:
    image: gitea/gitea:latest
    container_name: gitea
    environment:
      - DB_TYPE=postgres
      - DB_HOST=db:5432
      - DB_NAME=gitea
      - DB_USER=gitea
      - DB_PASSWORD=gitea
    restart: always
    volumes:
      - gitea:/data
    ports:
      - 3000:3000
    extra_hosts:
      - "www.jenkins.com:host-gateway"
    networks:
      - webnet
  db:
    image: postgres:alpine
    container_name: gitea_db
    environment:
      - POSTGRES_USER=gitea
      - POSTGRES_PASSWORD=gitea
      - POSTGRES_DB=gitea
    restart: always
    volumes:
      - gitea_postgres:/var/lib/postgresql/data
    expose:
      - 5432
    networks:
      - webnet

volumes:
  gitea_postgres:
    name: gitea_postgres
  gitea:
    name: gitea
```

```

  - name: gitea

networks:
  webnet:
    name: webnet
    #   external: true

# Gitea is not allowed to webhook to Jenkins follow these steps
# 1) Go to Gitea Container
# 2) cat /data/gitea/conf/app.ini
# 3) echo "[webhook]" >> /data/gitea/conf/app.ini
# 4) echo "ALLOWED_HOST_LIST = 192.168.65.2" >> /data/gitea/conf/app.ini
# Gitea Tutorials : https://www.youtube.com/watch?v=daW2CqH8TUA
-- INSERT --

```

- Compose YAML Saved LS

```

[ec2-user@ip-172-31-2-76 ~]$ sudo vim compose.yaml
[ec2-user@ip-172-31-2-76 ~]$ ls -l
total 4
-rw-r--r--. 1 root root 1127 Dec 27 13:29 compose.yaml
[ec2-user@ip-172-31-2-76 ~]$ -

```

- Usermod And Groups Before After

```

[ec2-user@ip-172-31-2-76 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-2-76 ~]$ sudo usermod -aG docker $USER
[ec2-user@ip-172-31-2-76 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-2-76 ~]$ exit
logout
Connection to 158.252.20.21 closed.
PS C:\WINDOWS\system32> ssh -i "C:\Users\Musfi\OneDrive\AWSKey.pem" ec2-user@158.252.20.21
,
  #
  ~\_\#####
  ~\~\_\####\_
  ~\~\#\#\|_
  ~\~\ \#/ , __-
  ~\~\ V~ , '->
  ~\~\ /
  ~\~\ / , /
  _/m/
Last login: Sat Dec 27 13:19:15 2025 from 203.215.167.149
[ec2-user@ip-172-31-2-76 ~]$ groups
ec2-user adm wheel systemd-journal docker
[ec2-user@ip-172-31-2-76 ~]$ -

```

- Docker Compose Up

```

[ec2-user@ip-172-31-2-76 ~]$ docker compose up -d
[+] up 16/18
[+] up 23/23ea/gitea:latest Pulled
✓ Image gitea/gitea:latest Pulled
  ✓ 2d35ebdb57d9 Pulled
  ✓ 9f4e672c1f34 Pulled
  ✓ 4da94b3cc809 Pulled
  ✓ 8e016ece0bd3 Pulled
  ✓ 346e493cb6cb Pulled
  ✓ 95215379f1d1 Pulled
✓ Image postgres:alpine Pulled
  ✓ 1074353eec0d Pulled
  ✓ 51a9324a2bdc Pulled
  ✓ 1e827ac0fa1e Pulled
  ✓ 0629ac8b8cc5 Pulled
  ✓ 2e50a444bddf Pulled
  ✓ 4465107e1675 Pulled
  ✓ cc2ee20b6816 Pulled
  ✓ 0dfd86289dd1 Pulled
  ✓ 98eecc0da868 Pulled
  ✓ b747867e61cb Pulled
✓ Network webnet Created
✓ Volume gitea_postgres Created
✓ Volume gitea Created
✓ Container gitea Created
✓ Container gitea_db Created
[ec2-user@ip-172-31-2-76 ~]$ -

```

- **Security Group Allow 3000**

The screenshot shows the AWS CloudWatch Metrics Insights interface. A query is being run against the CloudWatch Metrics Insights service to retrieve information about security group rules. The results are displayed in a table with columns: Name, Security group rule ID, IP version, Type, Protocol, Port range, Source, and Description. Two rows of data are present:

Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
-	sgr-07a6d902ef35974b7	IPv4	SSH	TCP	22	0.0.0.0/0	-
-	sgr-00955bfad8324f5bc	IPv4	Custom TCP	TCP	3000	0.0.0.0/0	-

- **Gitea Install Page**

The screenshot shows the Gitea install page at <http://158.252.20.21:3000>. A green success message at the top states "Account was successfully created. Welcome!". Below it, a "No Activity" section indicates "You are currently not following any repositories or users, so there is no content to display. You can explore repositories or users of interest from the links below." On the right, a "Repositories" section shows a message: "There are no repositories yet."

- **Gitea Create Repo**

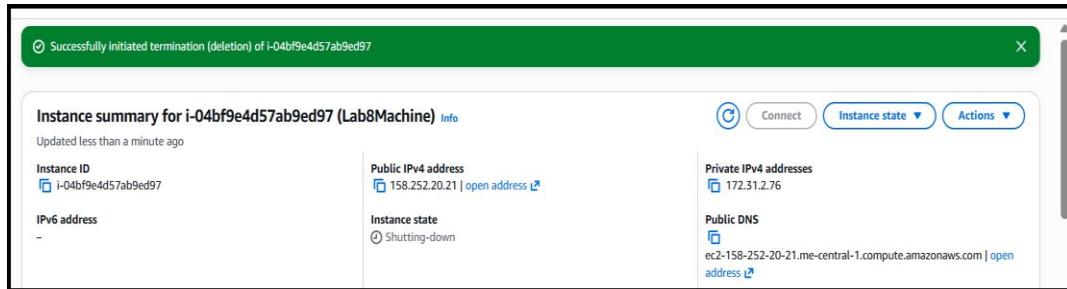
The screenshot shows the Gitea repository page for "hello/Lab8Repo". The repository details are visible, including the owner (383704034224), last updated (about 1 hour ago), and a code tab. The URL is <http://158.252.20.21:3000/hello/Lab8Repo>.

- **Summary**

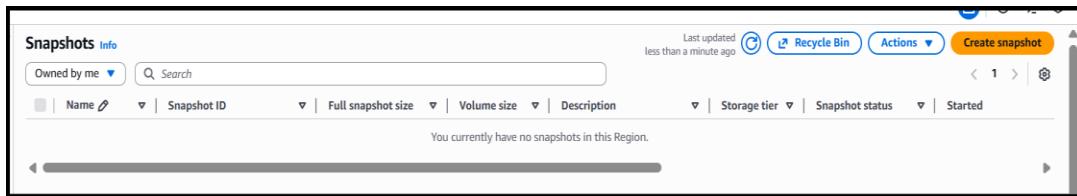
The screenshot displays three windows side-by-side. The left window is the AWS CloudWatch Metrics Insights interface, showing the same security group rule data as the previous screenshot. The middle window is the AWS EC2 Instances page, showing a single running instance named "Lab8Machine" with the ID i-04bf9e4d57ab9ecf97. The right window is the Gitea repository page for "hello/Lab8Repo" at <http://158.252.20.21:3000/hello/Lab8Repo>, showing the repository details and a code tab.

## Cleanup — Remove resources to avoid charges

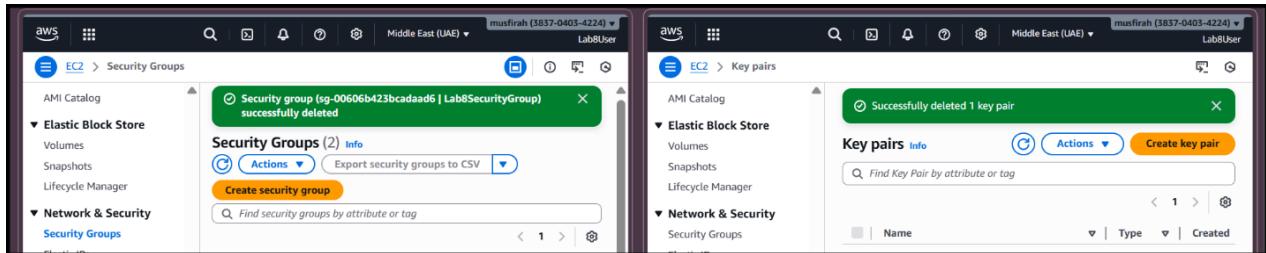
- cleanup\_terminate\_instance



- cleanup\_delete\_volumes\_snapshots



- cleanup\_delete\_security\_group\_and\_keypair



- cleanup\_iam\_users\_deleted

