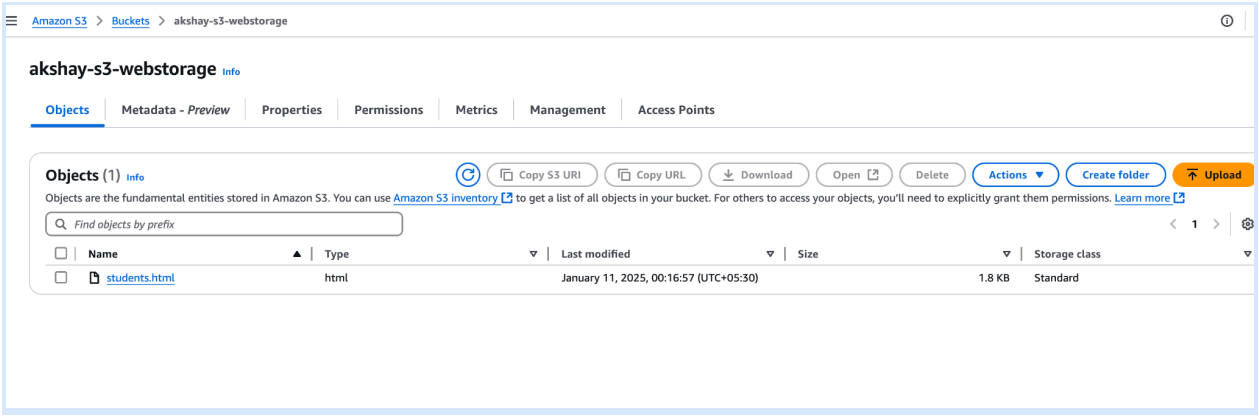
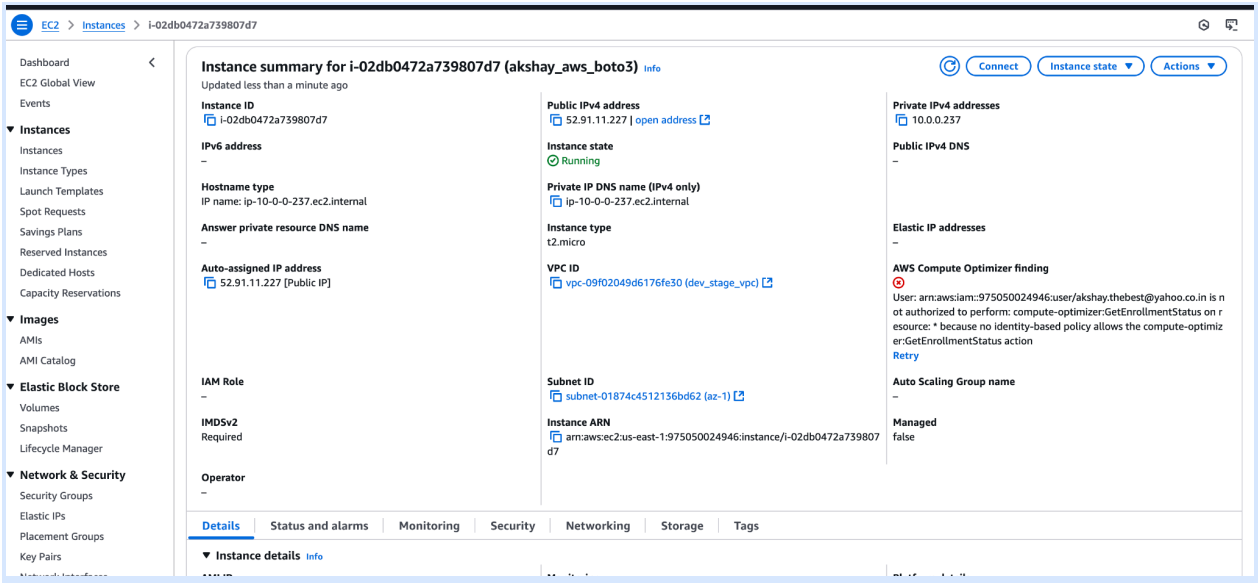
Graded Assignment on Monitoring, Scaling and Automation

1. Creating S3 bucket
   1_s3_setup.py

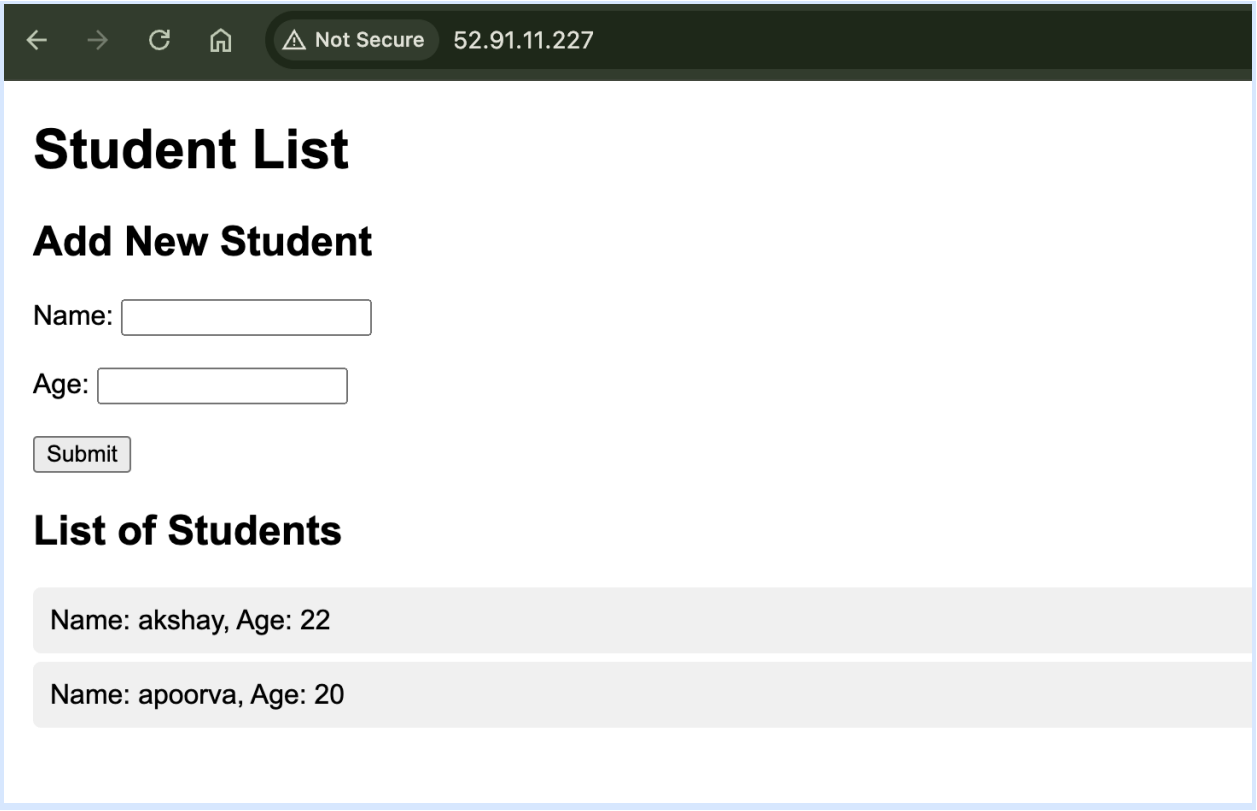


2. - Launch an EC2 instance and configure it as a web server (e.g., Apache, Nginx). - Deploy the web application onto the EC2 instance.

2_ec2_setup.py



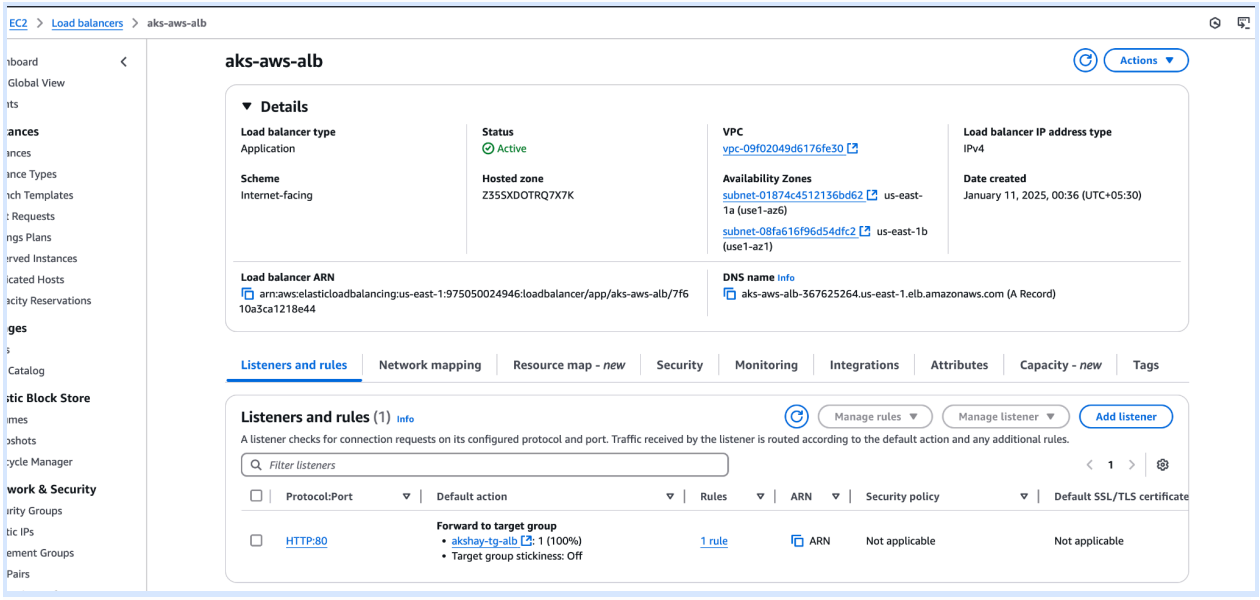
```
[ec2-user@ip-10-0-0-237 ~]$
[ec2-user@ip-10-0-0-237 ~]$ sudo systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: disabled)
     Active: active (running) since Fri 2025-01-10 18:55:27 UTC; 9s ago
   Main PID: 27312 (nginx)
      Tasks: 2 (limit: 1111)
     Memory: 2.4M
        CPU: 45ms
     CGroup: /system.slice/nginx.service
             ├─27312 "nginx: master process /usr/sbin/nginx"
             └─27314 "nginx: worker process"

Jan 10 18:55:27 ip-10-0-0-237.ec2.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Jan 10 18:55:27 ip-10-0-0-237.ec2.internal nginx[27310]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Jan 10 18:55:27 ip-10-0-0-237.ec2.internal nginx[27310]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Jan 10 18:55:27 ip-10-0-0-237.ec2.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
[ec2-user@ip-10-0-0-237 ~]$
[ec2-user@ip-10-0-0-237 ~]$
```



3. Load Balancing with ELB:

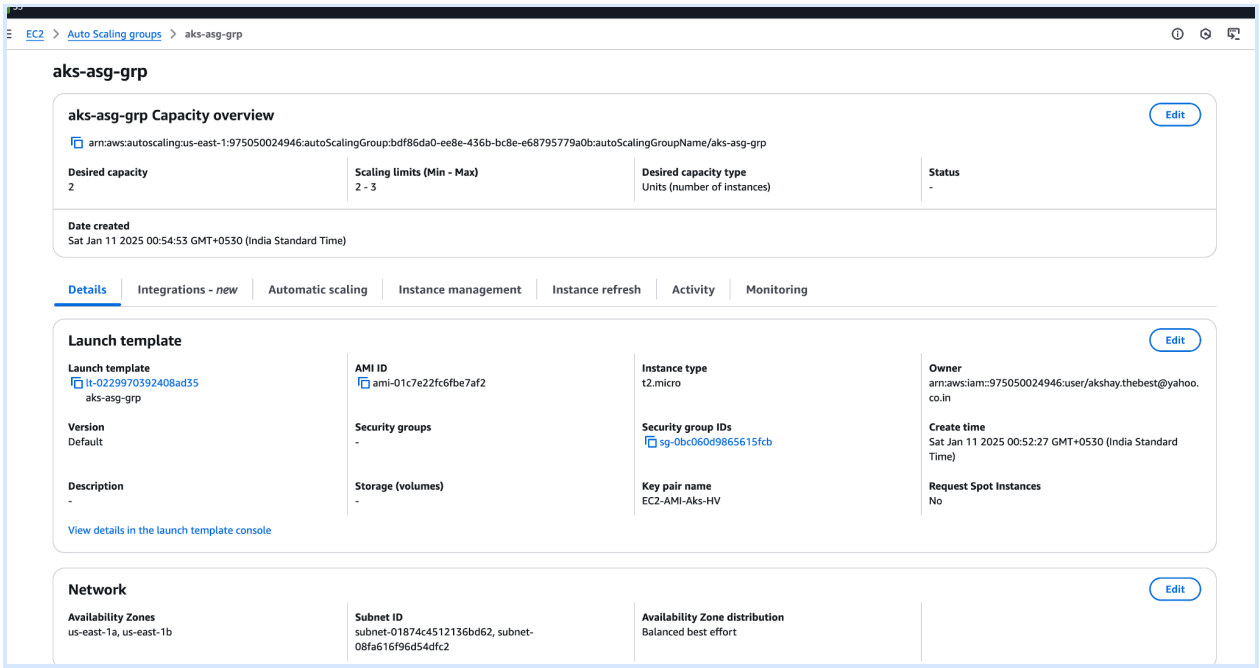
- Deploy an Application Load Balancer (ALB) using `boto3`.

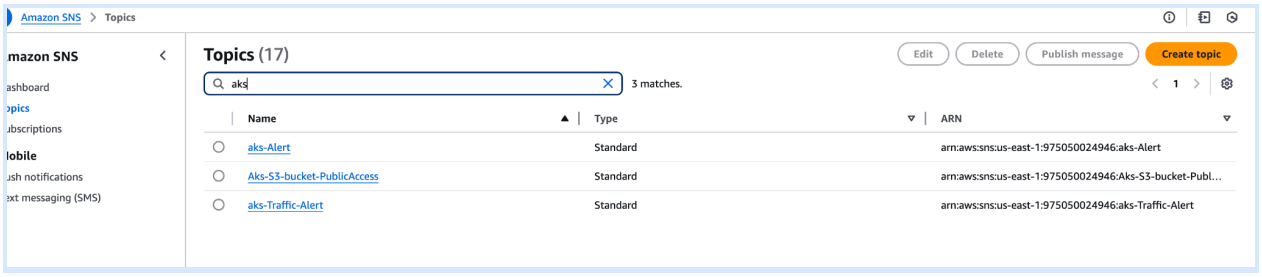
3_alb_setup.py



4. ASG creation

4_asg.py



5. Create cloudwatch events and SNS notifications:

5_sns.py
6_cloudwatch.py