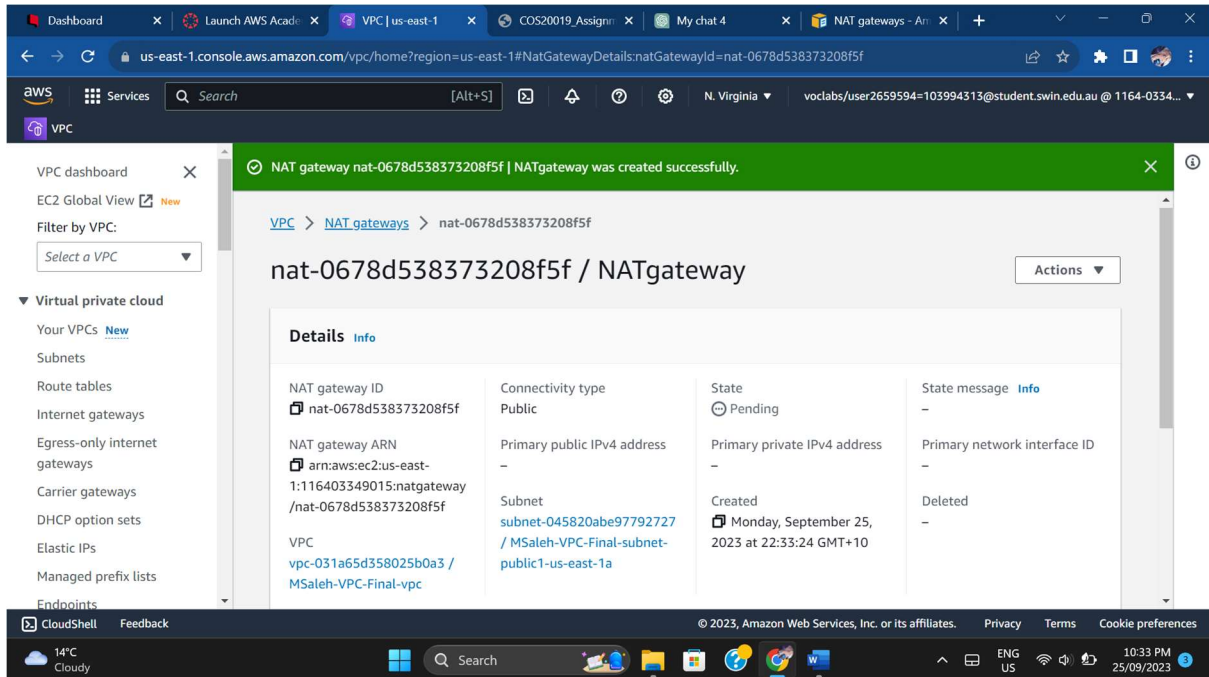


Assignment 2

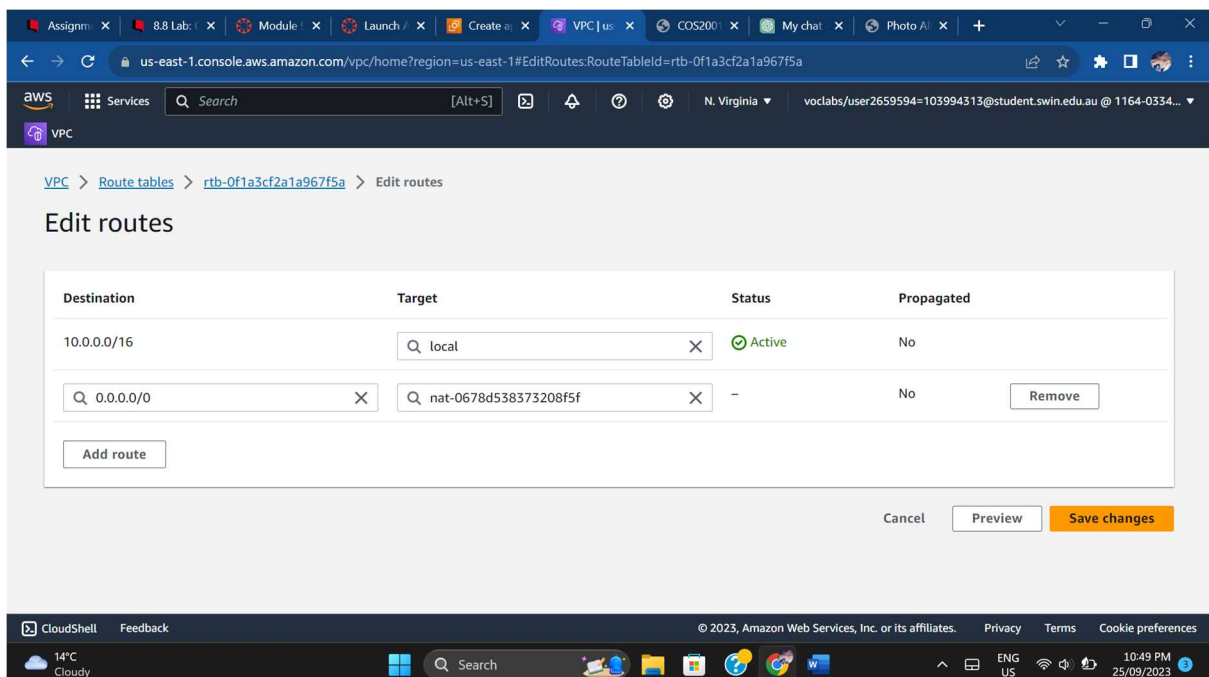
Mark Saleh

In this assignment I created a highly-available photo album. It is accessible here: <http://ec2-34-192-245-29.compute-1.amazonaws.com/photoalbum/album.php>

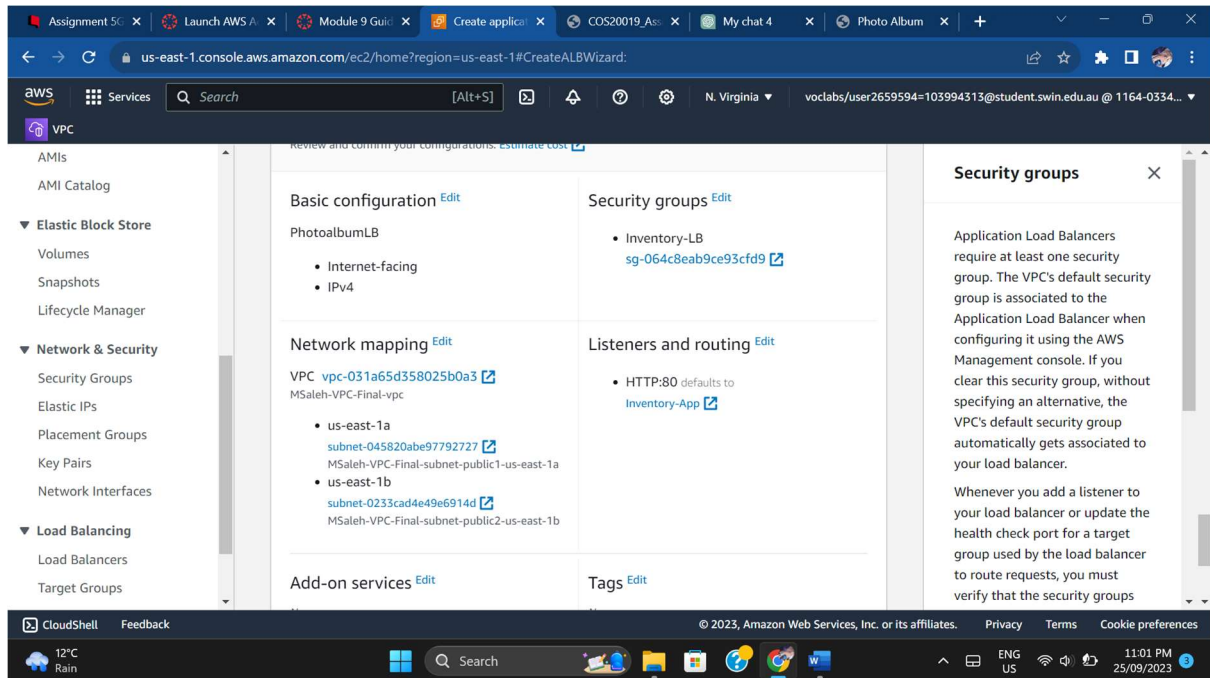
After fixing the constants.php file and uploading all the provided photoalbum files to my instance, I first created a NAT gateway called NATgateway in my EC2 instance, allocating it the elastic IP 44.213.239.113 (eipalloc-05f32e20b72366df4)



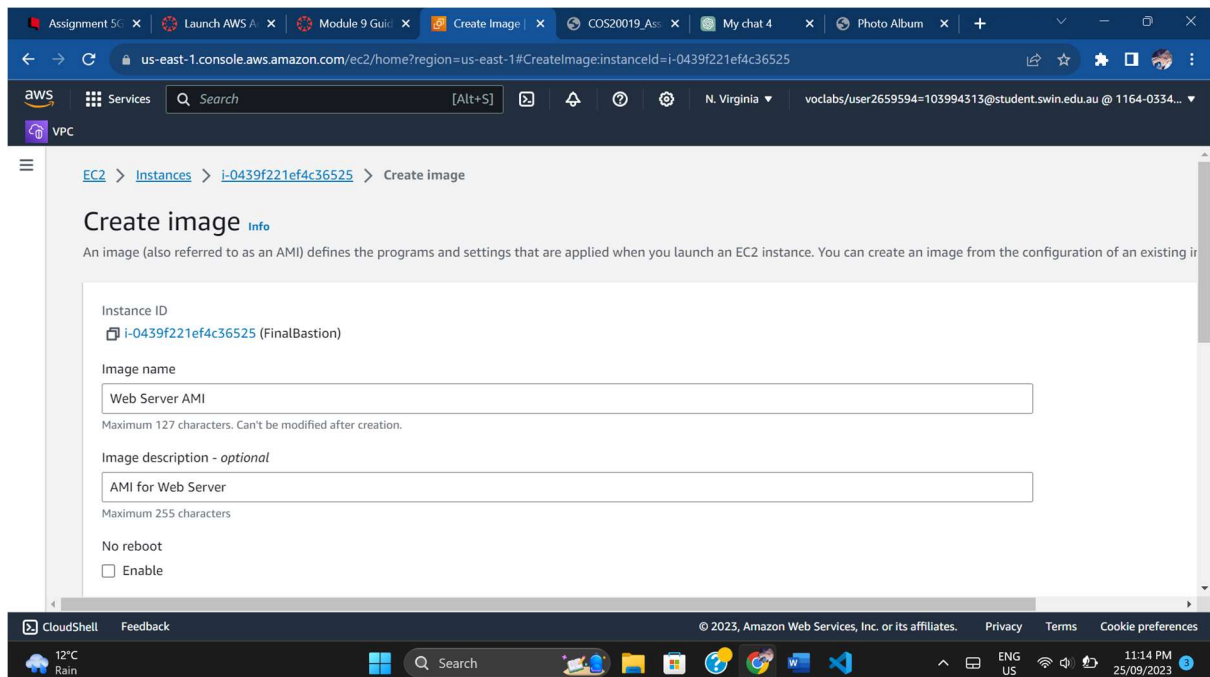
I then routed both the private subnets to it



After this I made an application load balancer between the two public subnets called PhotoalbumLB.



I then made an AMI of my web server.



I used this to set up a launch template which I then used to create an Auto Scaling Group as instructed

The screenshot shows the AWS Management Console for the 'us-east-1' region. The breadcrumb navigation indicates the path: EC2 > Launch templates > Photoalbum-LT. The main heading is 'Photoalbum-LT (lt-0205696d13e35b1f1)'. Below this, the 'Launch template details' section displays the following information:

Launch template ID	Launch template name	Default version	Owner
lt-0205696d13e35b1f1	Photoalbum-LT	1	arn:aws:sts::116403349015:assumed-role/voclabs/user2659594=103994313@student.swin.edu.au

Below the details, there are tabs for 'Details', 'Versions', and 'Template tags'. The 'Details' tab is currently selected. At the bottom of the console, the 'Launch template version details' section is visible, showing 'Photoalbum-LT' as the selected version.

The screenshot shows the AWS Management Console for the 'us-east-1' region. The breadcrumb navigation indicates the path: EC2 > Auto Scaling groups. The main heading is 'Auto Scaling groups (1/1)'. Below this, the 'Auto Scaling group: photoalbum-ASG' section displays the following information:

Auto Scaling group name	Desired capacity	Status	Amazon Resource Name (ARN)
photoalbum-ASG	2	Updating capacity	arn:aws:autoscaling:us-east-1:116403349015:autoScalingGroup:646b1935-07de-4b6e-9a6a-866493867526:autoScalingGroupName/photoalbum-ASG

Below the details, there are tabs for 'Launch configurations', 'Launch templates', and 'Actions'. The 'Launch templates' tab is currently selected, showing 'Photoalbum-LT | Version Default' as the selected launch template. The 'Desired capacity' is 2, and the 'Status' is 'Updating capacity'.

I then made the CreateThumbnail Lambda function and uploaded the code to it. When testing it, it did not work for some reason, and I could not fix it. Since I did not write the code or the test, I am not sure if the problem is on my side. I decided to leave it like that

Assignment 51 x Launch AWS A x Module 13 Gui x CreateThumb x COS20019_Ase x My chat 4 x Photo Album x +

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/CreateThumbnail?newFunction=true&tab=code

aws Services Search [Alt+S] N. Virginia voclabs/user2659594=103994313@student.swin.edu.au @ 1164-0334...

VPC


Successfully created the function **CreateThumbnail**. You can now change its code and configuration. To invoke your function with a test event, choose "Test".


Lambda > Functions > CreateThumbnail

CreateThumbnail

Throttle Copy ARN Actions

Function overview Info

 CreateThumbnail

 Layers (0)

+ Add trigger + Add destination

Description

Last modified 6 seconds ago

Function ARN
arn:aws:lambda:us-east-1:116403349015:function:CreateThumbnail

Function URL

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12°C Rain Search ENG US 11:32 PM 25/09/2023

Assignment 51 x Launch AWS A x Module 13 Gui x CreateThumb x COS20019_Ase x My chat 4 x Photo Album x +


us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/CreateThumbnail?newFunction=true&tab=testing

aws Services Search [Alt+S] N. Virginia voclabs/user2659594=103994313@student.swin.edu.au @ 1164-0334...

VPC

Successfully updated the function **CreateThumbnail**.

Code **Test** Monitor Configuration Aliases Versions

 Executing function: failed ([logs](#))
Details

Test event Info Delete Save Test

To invoke your function without saving an event, modify the event, then choose Test. Lambda uses the modified event to invoke your function, but does not overwrite the original event until you choose Save changes.

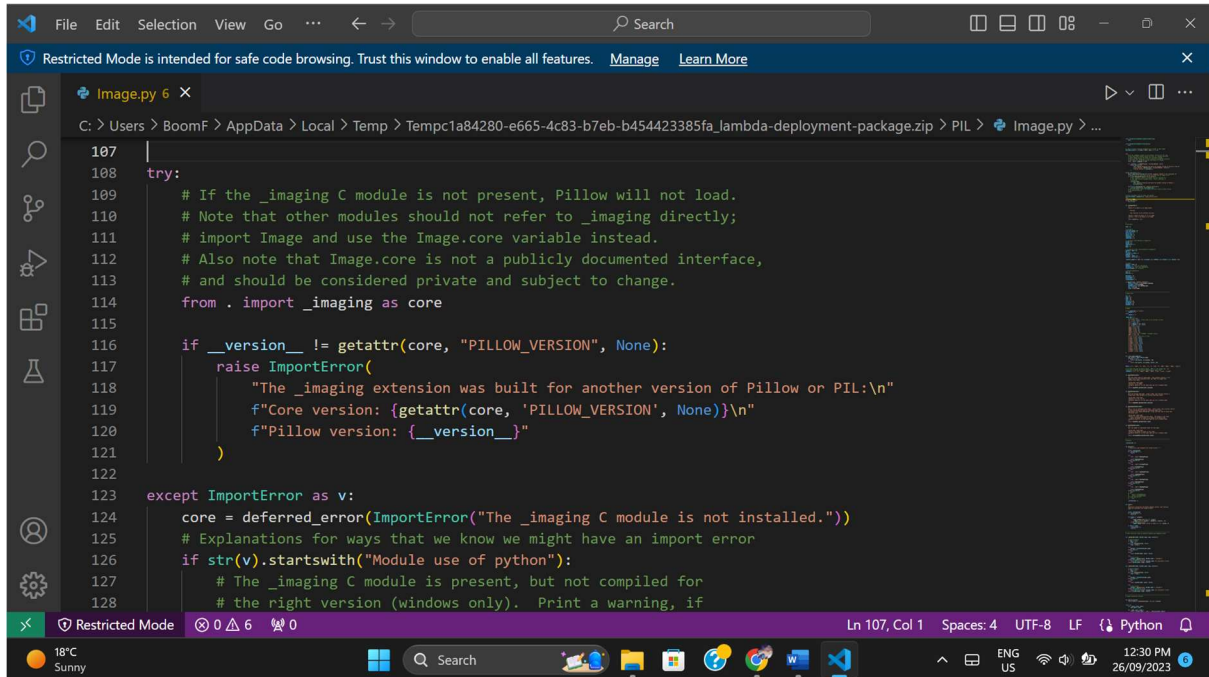
Test event action

☐ Create new event ☒ Edit saved event

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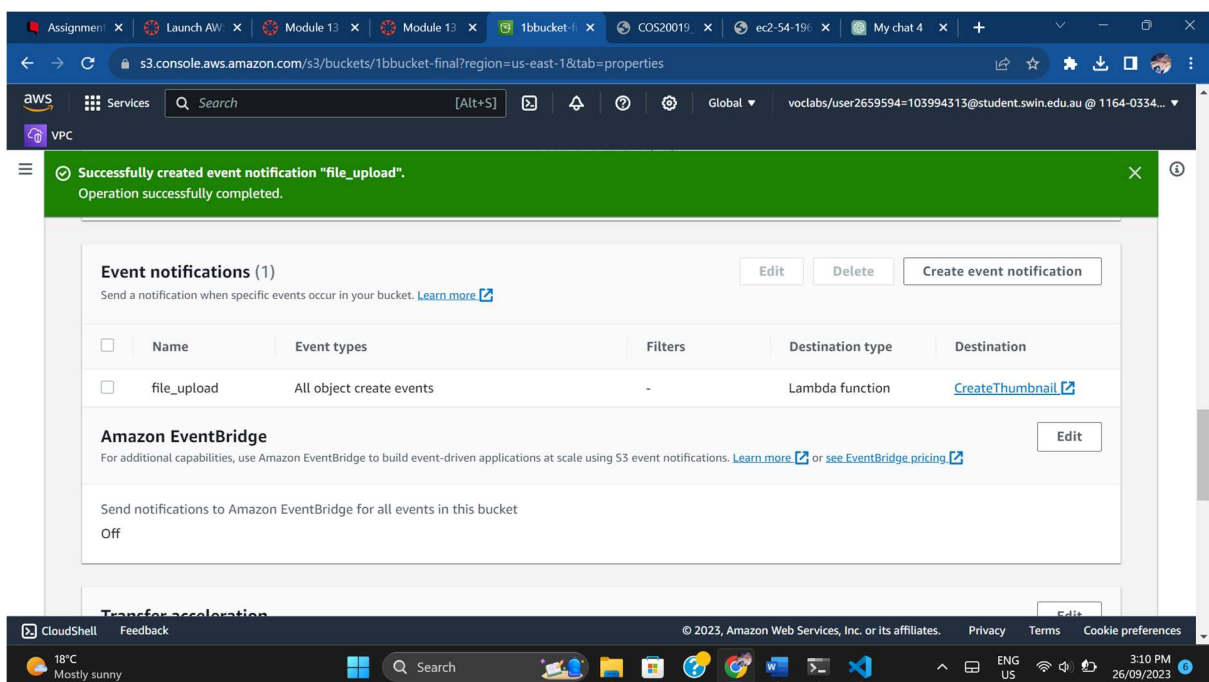
12°C Rain Search ENG US 11:58 PM 25/09/2023

The error seems to be connected to this part of the code



```
107 |
108 | try:
109 |     # If the _imaging C module is not present, Pillow will not load.
110 |     # Note that other modules should not refer to _imaging directly;
111 |     # import Image and use the Image.core variable instead.
112 |     # Also note that Image.core is not a publicly documented interface,
113 |     # and should be considered private and subject to change.
114 |     from . import _imaging as core
115 |
116 |     if __version__ != getattr(core, "PILLOW_VERSION", None):
117 |         raise ImportError(
118 |             "The _imaging extension was built for another version of Pillow or PIL:\n"
119 |             f"Core version: {getattr(core, 'PILLOW_VERSION', None)}\n"
120 |             f"Pillow version: {__version__}"
121 |         )
122 |
123 | except ImportError as v:
124 |     core = deferred_error(ImportError("The _imaging C module is not installed."))
125 |     # Explanations for ways that we know we might have an import error
126 |     if str(v).startswith("Module use of python"):
127 |         # The _imaging C module is present, but not compiled for
128 |         # the right version (windows only). Print a warning, if
```

Despite this, I made an event in my S3 bucket and connected it to the lambda function



Assignment x Launch AW x Module 13 x Module 13 x 1bbucket-f x COS20019 x ec2-54-196 x My chat 4 x +

s3.console.aws.amazon.com/s3/buckets/1bbucket-final?region=us-east-1&tab=properties

aws Services Search [Alt+S] Global voclabs/user2659594=103994313@student.swin.edu.au @ 1164-0334...

VPC

Successfully created event notification "file_upload".
Operation successfully completed.

Event notifications (1) Edit Delete Create event notification

Send a notification when specific events occur in your bucket. [Learn more](#)

<input type="checkbox"/>	Name	Event types	Filters	Destination type	Destination
<input type="checkbox"/>	file_upload	All object create events	-	Lambda function	CreateThumbnail

Amazon EventBridge Edit

For additional capabilities, use Amazon EventBridge to build event-driven applications at scale using S3 event notifications. [Learn more](#) or [see EventBridge pricing](#)

Send notifications to Amazon EventBridge for all events in this bucket

Off

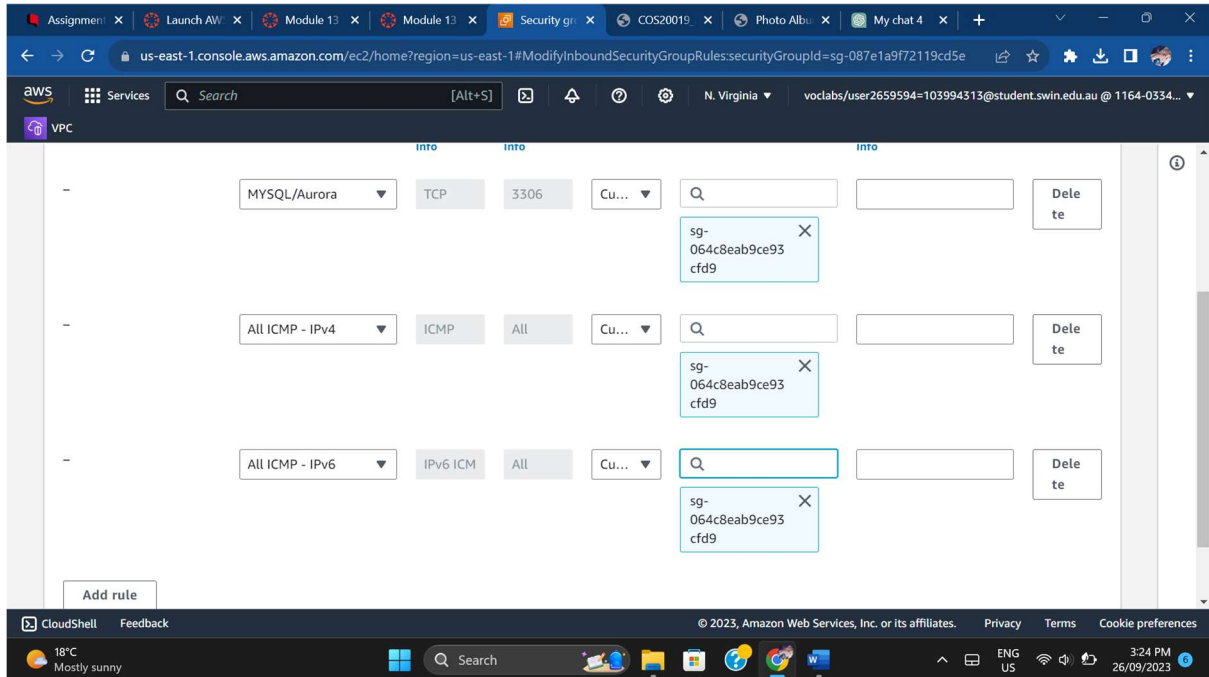
Transfer acceleration

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18°C Mostly sunny 3:10 PM 26/09/2023

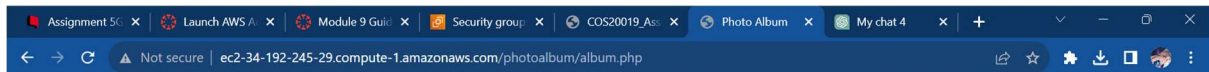
I then moved on to the next step which is security groups. My ELBSG was named Inventory-LB and my WebServerSG was named WebServerSG-FINAL. I edited its inbound rules to only allow traffic

from Inventory-LB.



My DBServerSG was already configured to only accept traffic from WebServerSG-FINAL.

The problem is that this broke my website. Even returning WebServerSG to previous settings with all traffic allowed did not return it somehow. I tried editing the inbound rules of the DBServerSG but that did nothing.



Student name: Mark Saleh

Student ID: 103994313

Tutorial session: Online

Uploaded photos:

[Upload more photos](#)

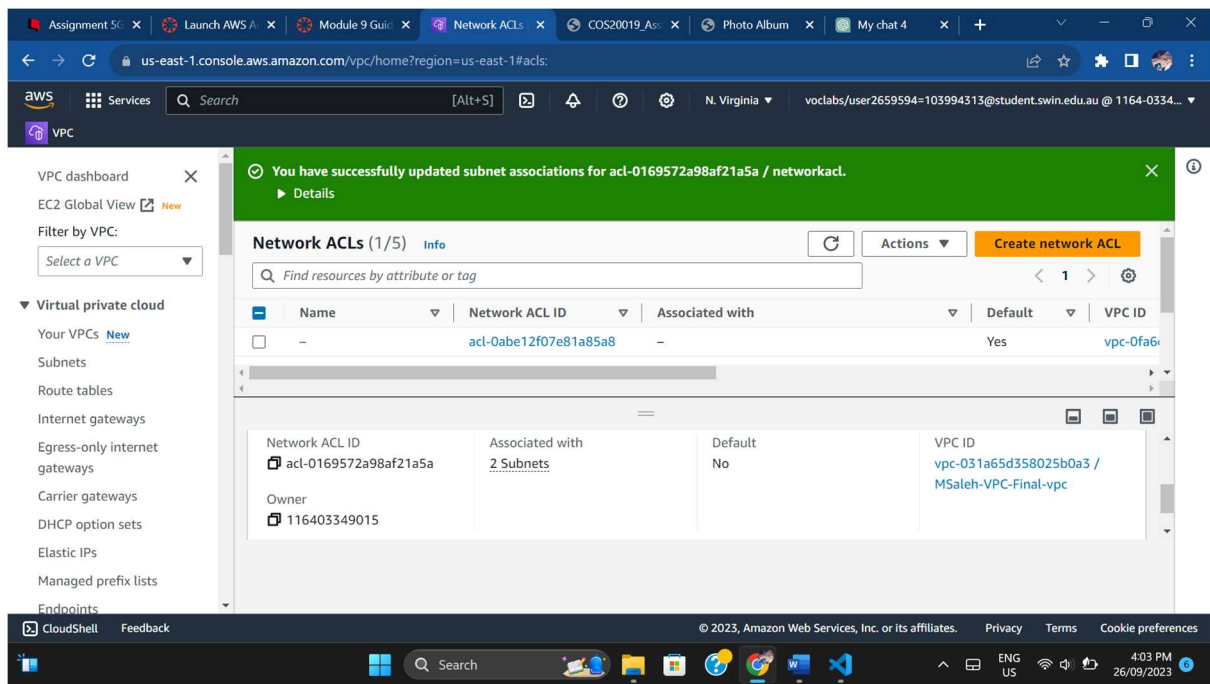
Notice: Undefined index: `html_template` in `/var/www/html/photoalbum/mydb.php` on line 24

Fatal error: Uncaught Error: Call to a member function `query()` on null in `/var/www/html/photoalbum/mydb.php:31` Stack trace: #0 `/var/www/html/photoalbum/album.php(35)`: `MyDB->getAllPhotos()` #1 `{main}` thrown in `/var/www/html/photoalbum/mydb.php` on line 31

Photo	Name	Description	Creation date	Keywords
-------	------	-------------	---------------	----------



Anyway, I created a DevServerSG as well. Finally, I created a network ACL to block traffic to and from the DevServer



After this I did some testing:

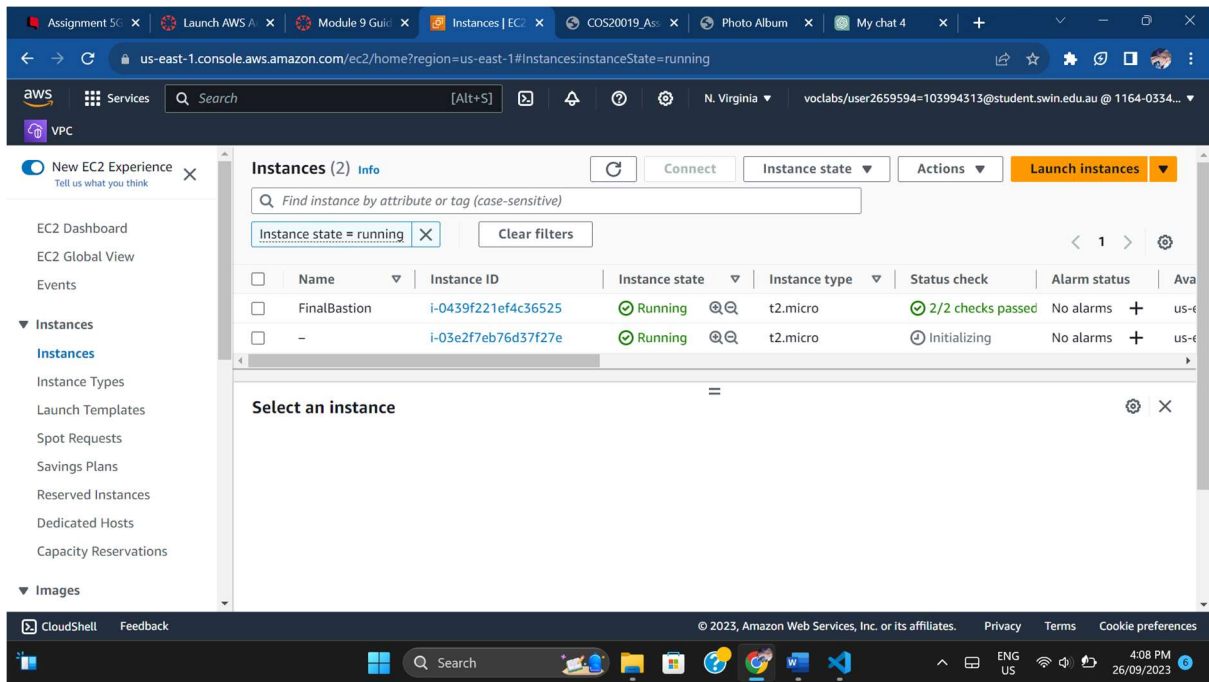
- Check the S3 bucket to see if photos are actually uploaded and if their resized versions are created. Check the database to see if their meta-data is recorded.

This did not work due to the error with the lambda function.

- The PhotoAlbum website is accessible through the load balancer only.

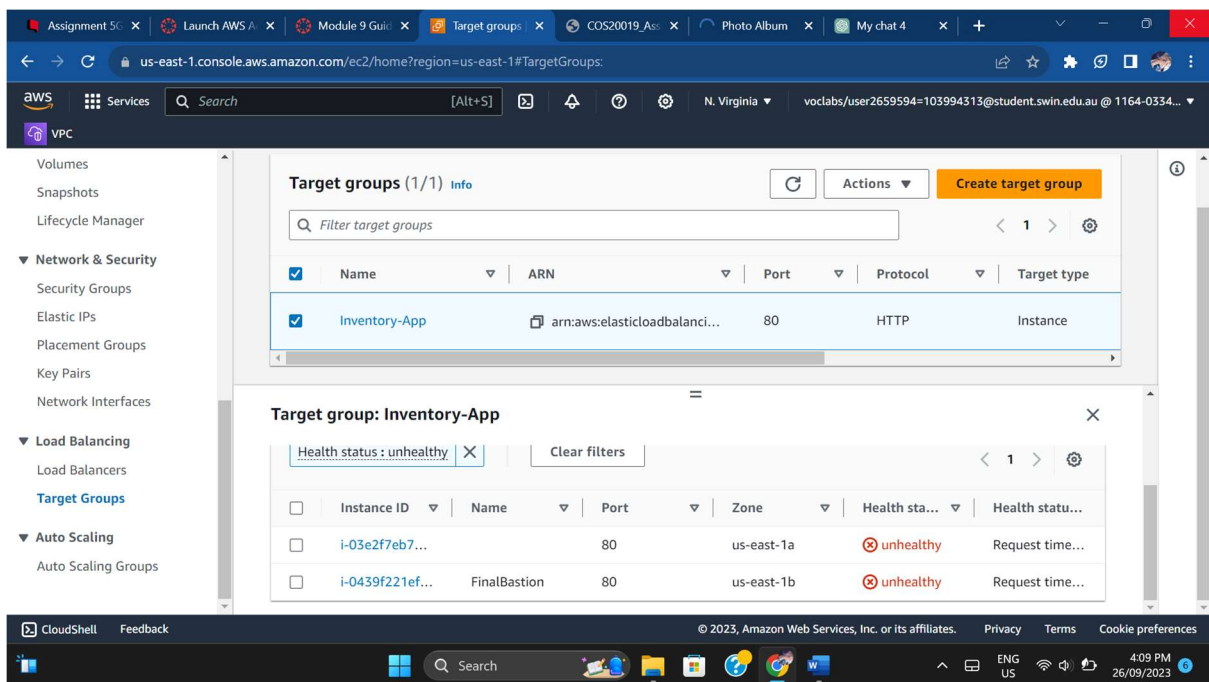
This is true

- Terminate servers then check to see if replacement EC2 instances are automatically deployed by the ASG. Thoroughly test the functionality of the website again once new instances have been launched.



This worked. Another instance was launched and the websites was still as functional as before

- All EC2 targets are healthy.



No

- Test direct access to your S3 photos, which should not be publicly accessible.

They are not publicly accessible

- Double check all security groups and IAM roles, make sure they follow the leastprivilege principle.

They do