Project Done By
G.Girish Kumar

Submitted To :
Ajay Sir(GA Foundation)

AWS Project- 2

AWS EC2 Instance Automation with Lambda and CloudWatch, SNS.

Project Description: We have a requirement to automate the start and stop of an Amazon EC2 instance on a daily basis. This automation will help us reduce costs and ensure that the EC2 instance is only running during the required hours. We will achieve this by leveraging AWS Lambda for the execution and AWS CloudWatch Events for scheduling.

Project Objectives:

- Automatically start an Amazon EC2 instance at 9:00 AM daily.
- Automatically stop the same EC2 instance at 6:00 PM daily

Services Required :5

- ✓ EC2
- ✓ IAM
- ✓ Lambda
- ✓ Cloudwatch
- ✓ SNS

➢ *Creation Of EC2 Instance :-*

➔Click On EC2 service.
➔Click on Launch Instance
➔Give the Instance Name as like “project-ec2”with the meaning full name .
➔Give the Quick sort as Amazon linux or ubantu .here ,I have given as Amazon Linux
➔Instance type : select as for free tier “t2-micro”.,for cost optimization.
➔Create the Keypair like “general”.
➔In the Network Setting , Give the default VPC and Enable the *auto assign Ip address.*
➔Select the security groups.
➔Select the Launch Instance Button at the bottom.

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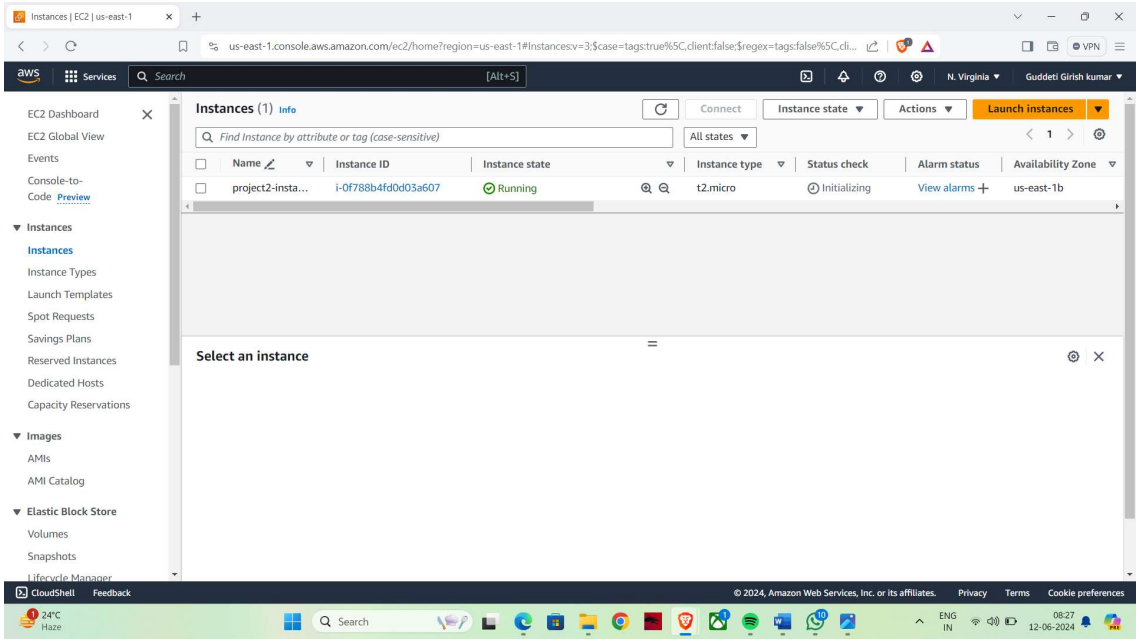


➢ Create the IAM Policy :-

➔Select the IAM service.

➔Select the policy in the side menu.

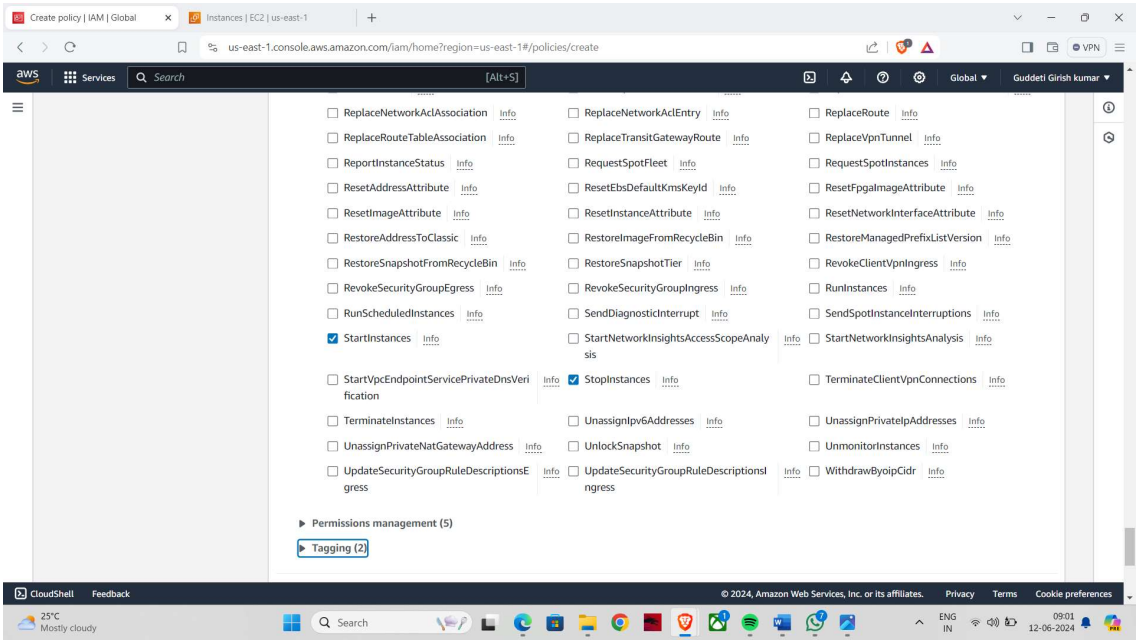
➔Select the policy and Click on the Create policy.

➔In the Policy editor Section:

→Give The EC2 as a Service

→Add the required actions , here I am giving the *ALL Actions*

Or select the start Instances or stop instancs.



➔*In the Resources sections ,Click on Instances :*

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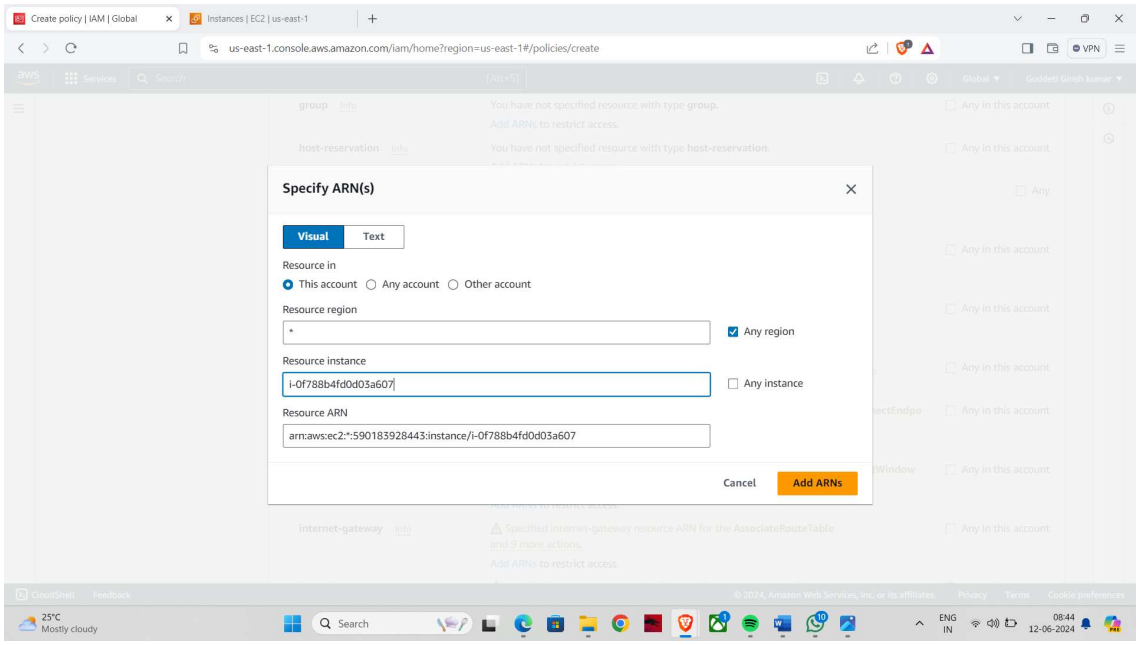
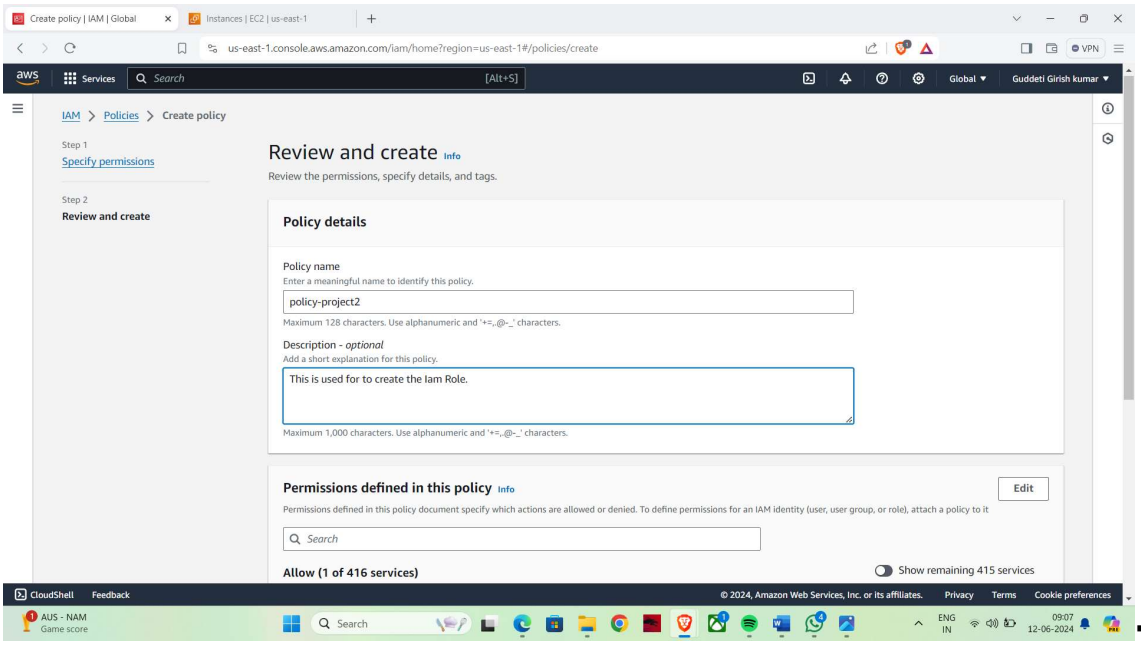
➔*Add Specified instance with instance region and instance ID.*



➔Click on the Add ARN.

➔Click on next

➔give the Policy name and descriotion.

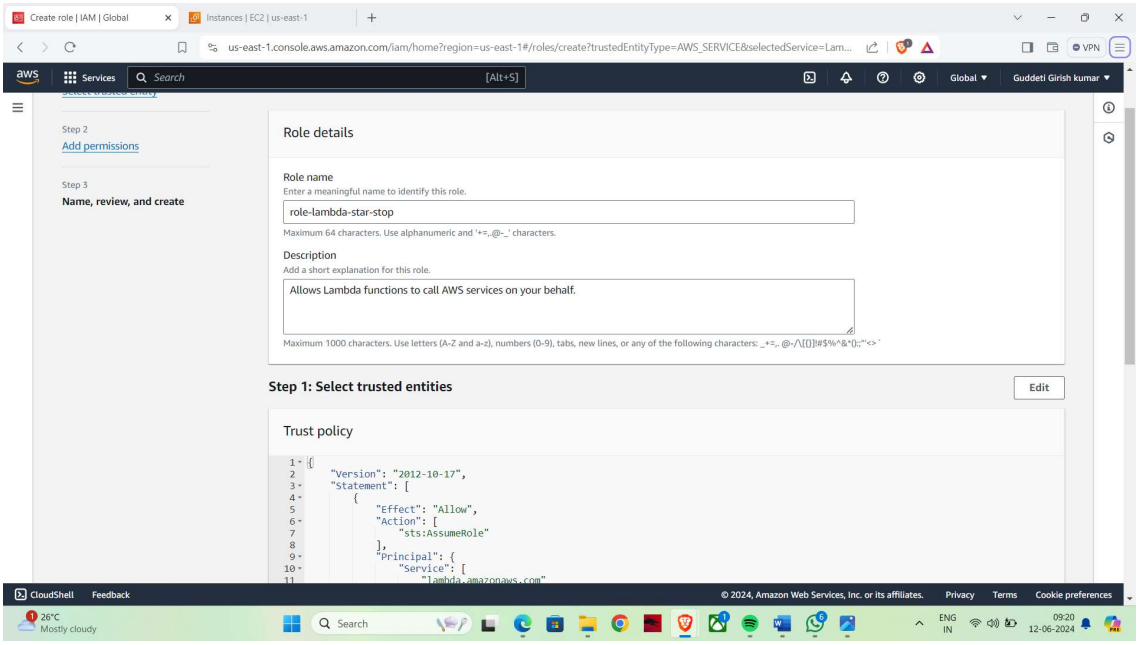


➔Click on Next button.

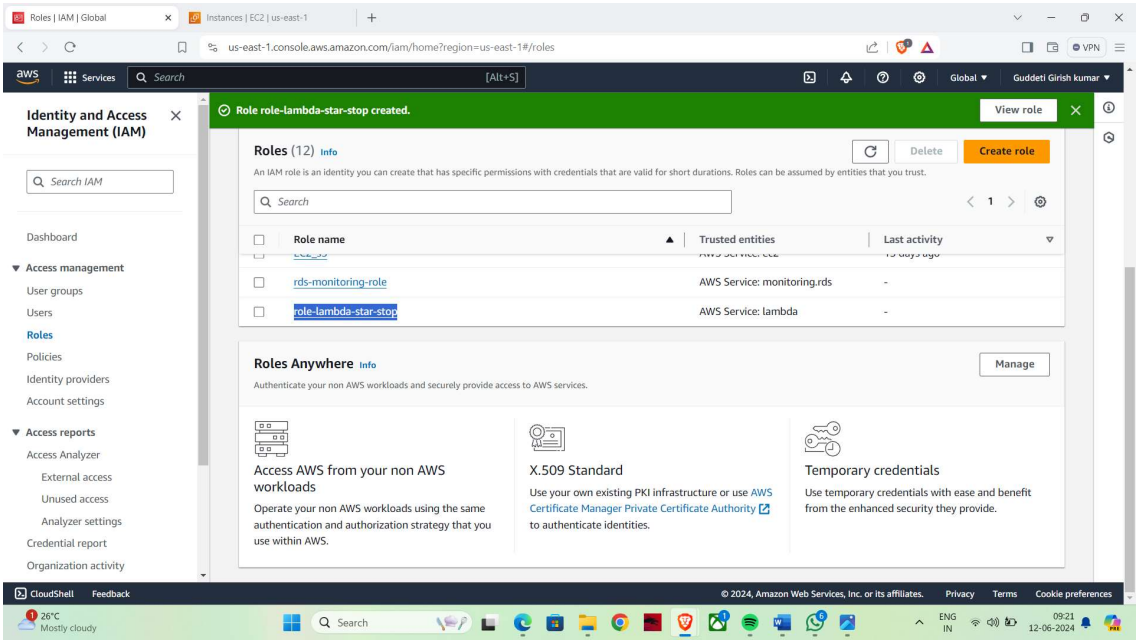
- **Create the IAM Role :-**

  ➔create the Iam role with the policy that we created previously.

➔Give the IAM Role name .



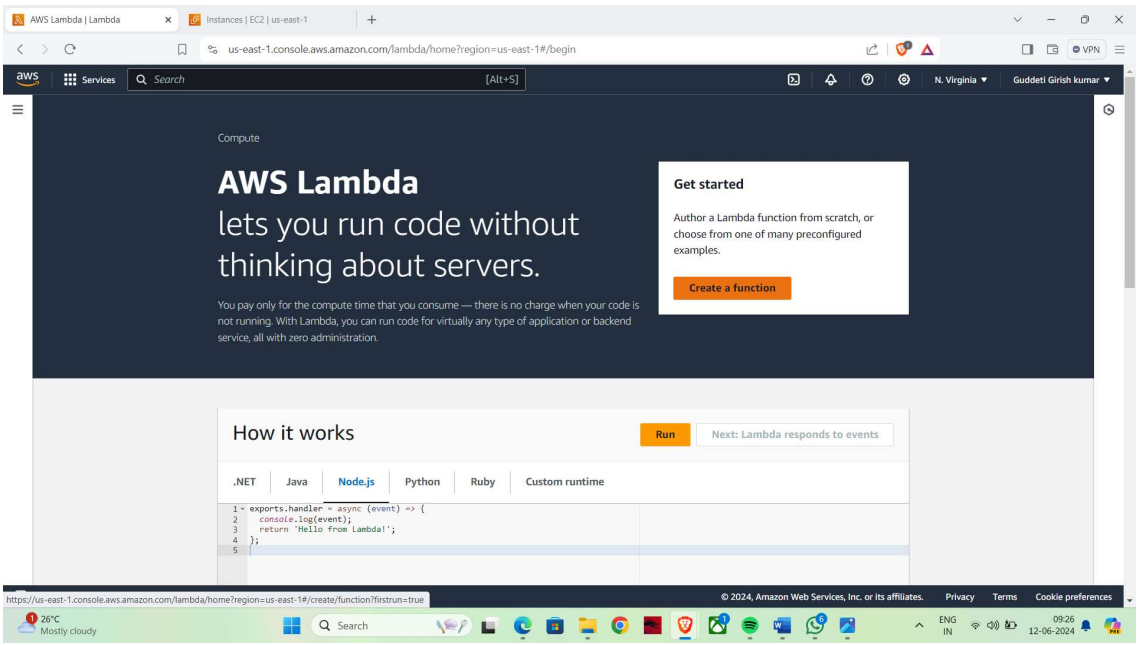
➔Click on Create Role.



➢ Create the Lambda for start Instance :-

➔Click on lambda service on the console.

➔ Give the name as lambda_1



➔Click On the Create Function.

➔Selecct the Option as “*Author from scratch*”.

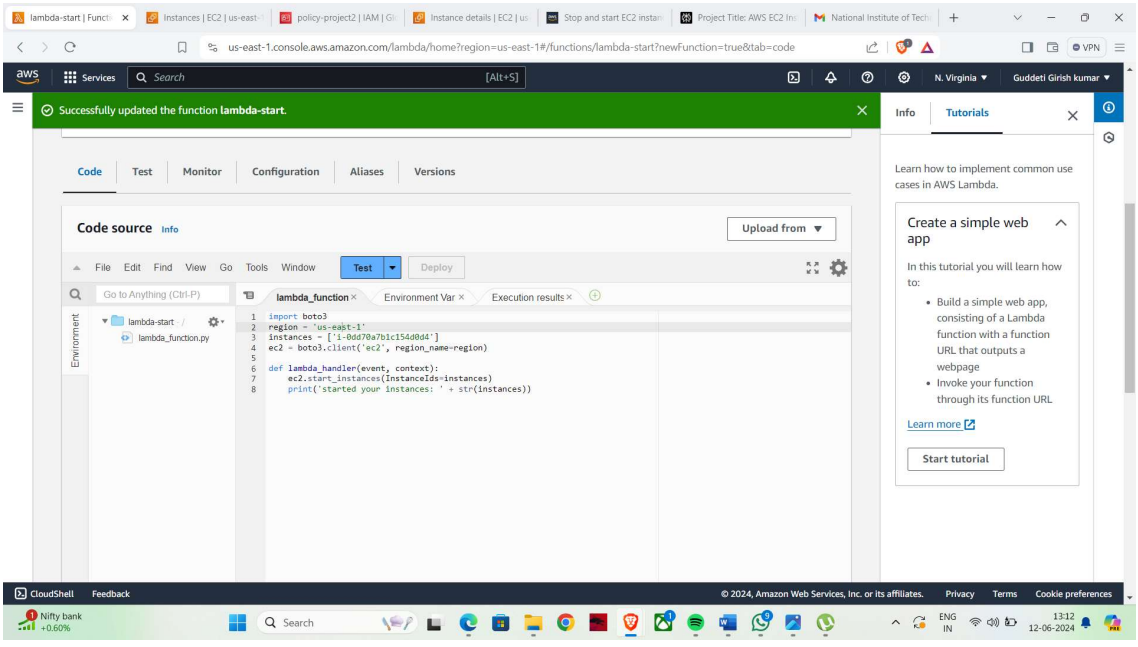
➔Click on the Runtime as Python language .

➔click on “Change default execution role”.

➔Select the existing Role , which we are created the previously .(role-lambda-start-stop).

➔Click on the create function.

➔write the code in Python format for Starting the Instances..

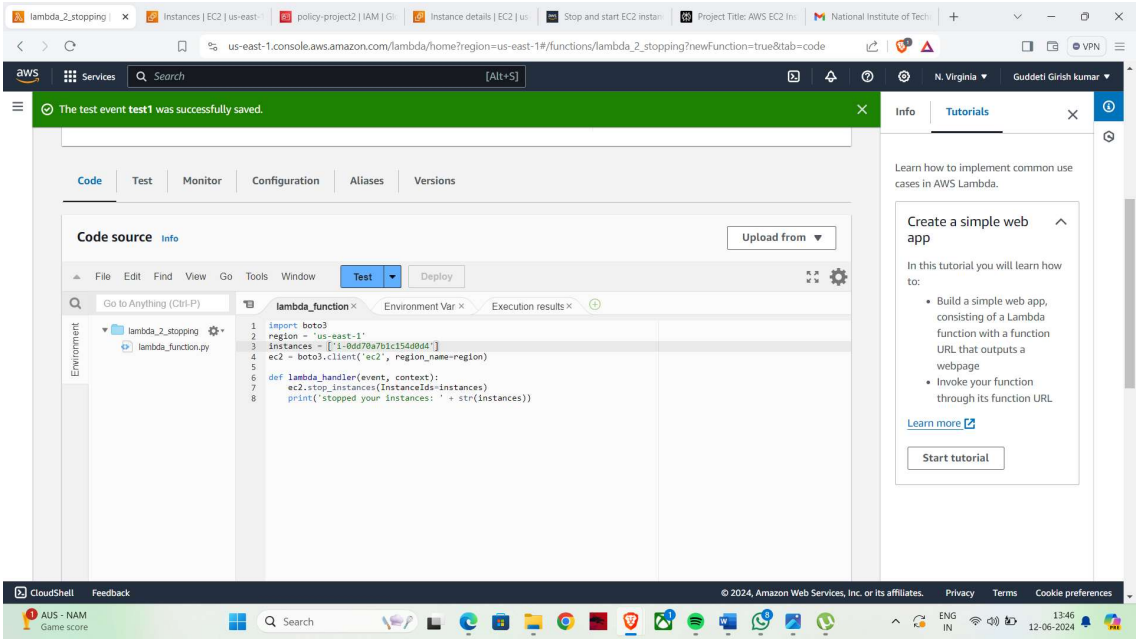


➔Change the instance-id and Region according to the Instance created.

➔Click on the Deploy option.
➔create the Test case and click on it .
➔check the instance is running or not.
➔It should be Running.

- **Create the Lambda-2 with the stop instance:-**

➔Click on lambda service on the console.
➔Click On the Create Function.
➔Selecct the Option as "*Author from scratch*".
➔*Give the name as Lambda_2*
➔Click on the Runtime as Python language .
➔click on "**Change default execution role**".
➔**Select the existing Role , which we are created the previously .(role-lambda-start-stop).**
➔**Click on the create function.**
➔**write the code in Python format for Starting the Instances.**
➔Change the instance-id and Region according to the Instance created.
➔Click on the Deploy option.
➔create the Test case and click on it .
➔check the instance is running or not.
➔It should be Running.



➔There are the 2 lambda-functions that are created for starting and stopping the instance respectively.

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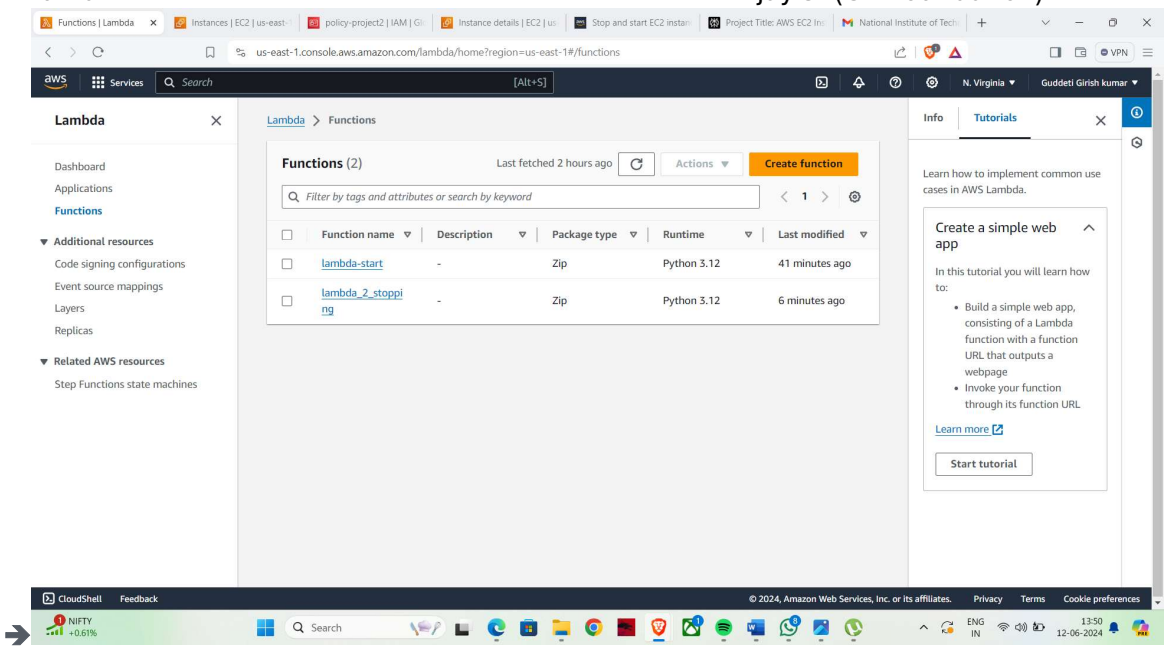


➢ **Create a Cloudwatch For scheduling ,Event:-**

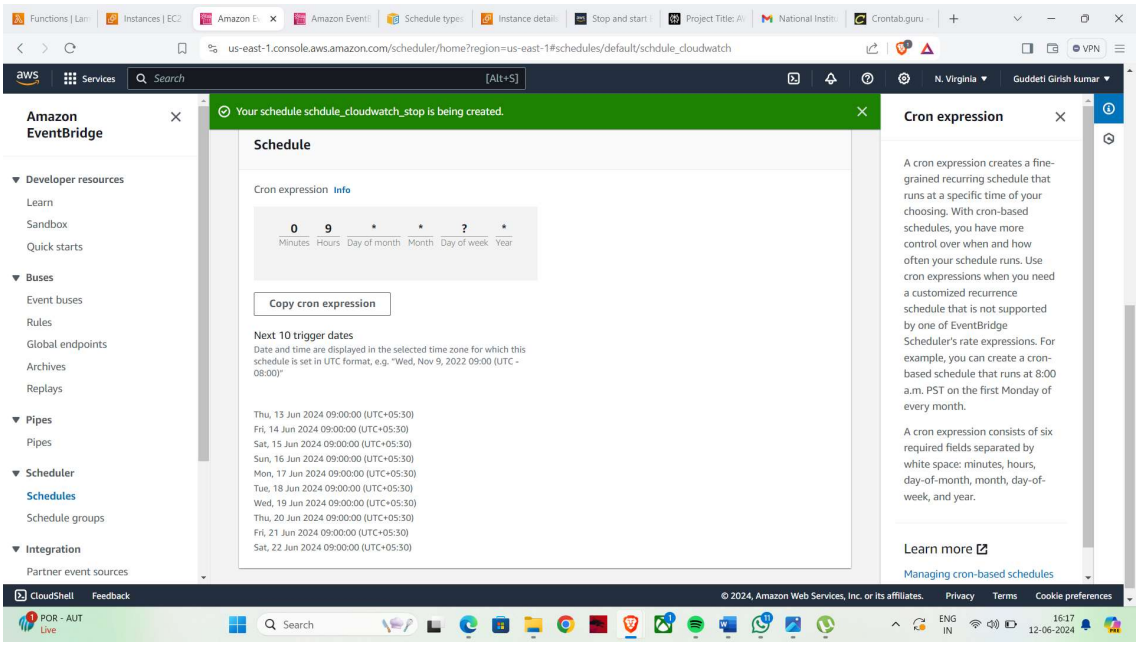
➔open the cloudwatch service ,open the Schedule name.

➔Give the name , description .

➔Give the schedule pattern as Recurring schedule and give the time of instances to start and stop attomatically.

➔According to project , instances should automatically start at Morning 9:00 AM.and closed at 6:00PM ,accordingly I have created the 2-Lambda Functions.

➔For this we need to create the Target group.



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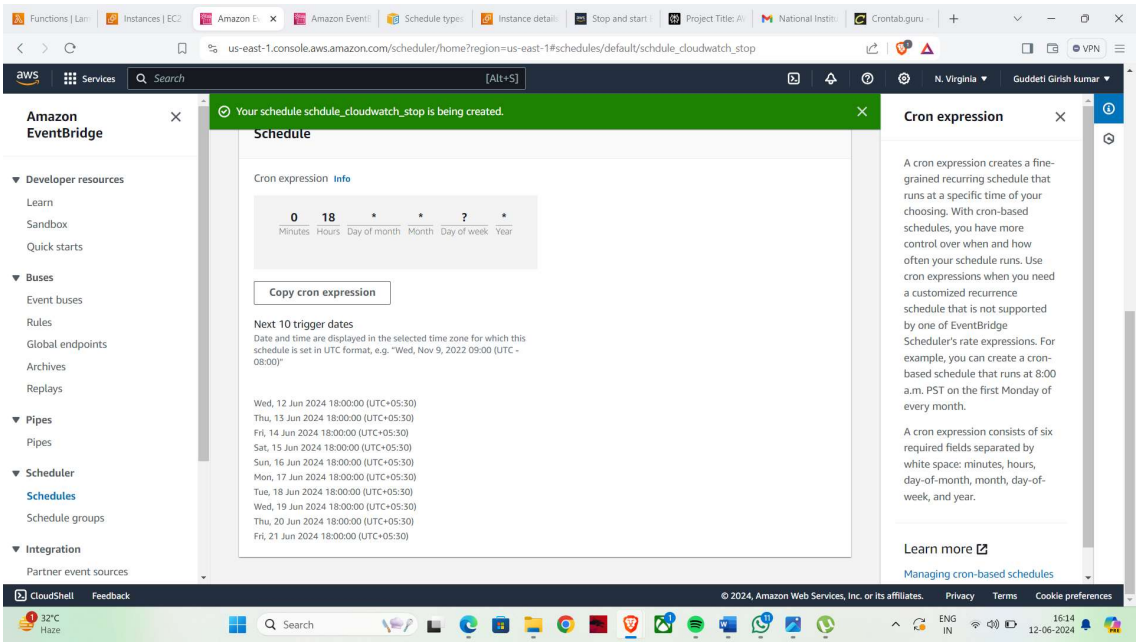
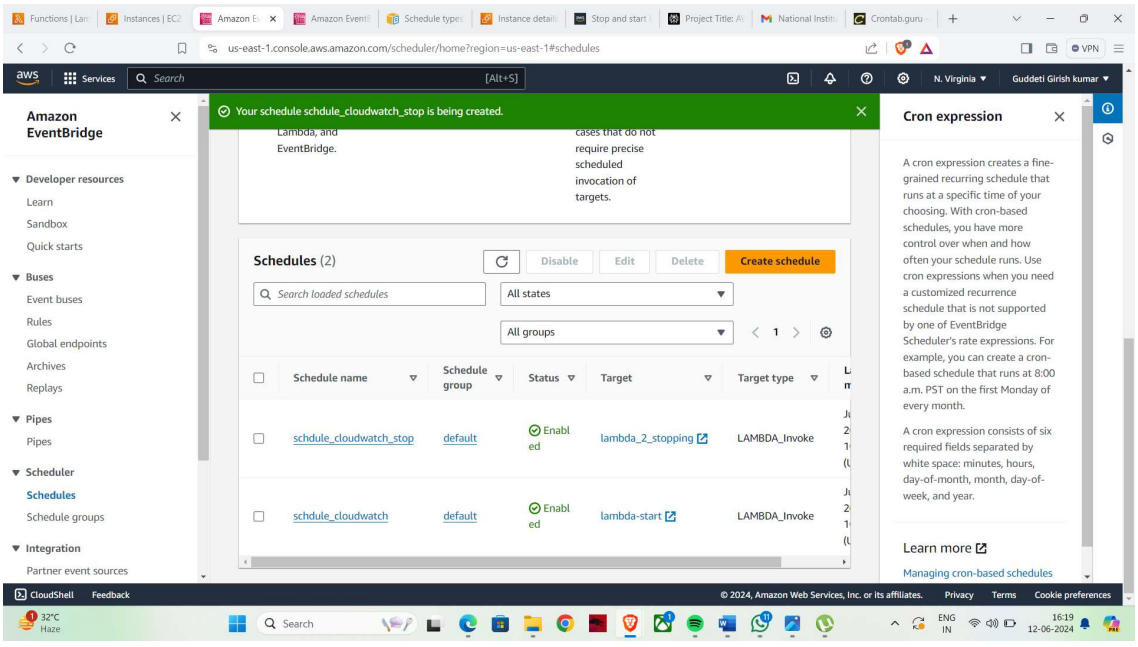
➔



➔**I was** Scheduled **the two Functions:-**



⇨

➢ Create the Rule in Cloudwatch.:

➔Click on Rules , Create the New Rule.

➔Give the name and description.

➔In event pattern , create the Ec2 as a service , Event type as State-change notifications.

➔Created the SNS .

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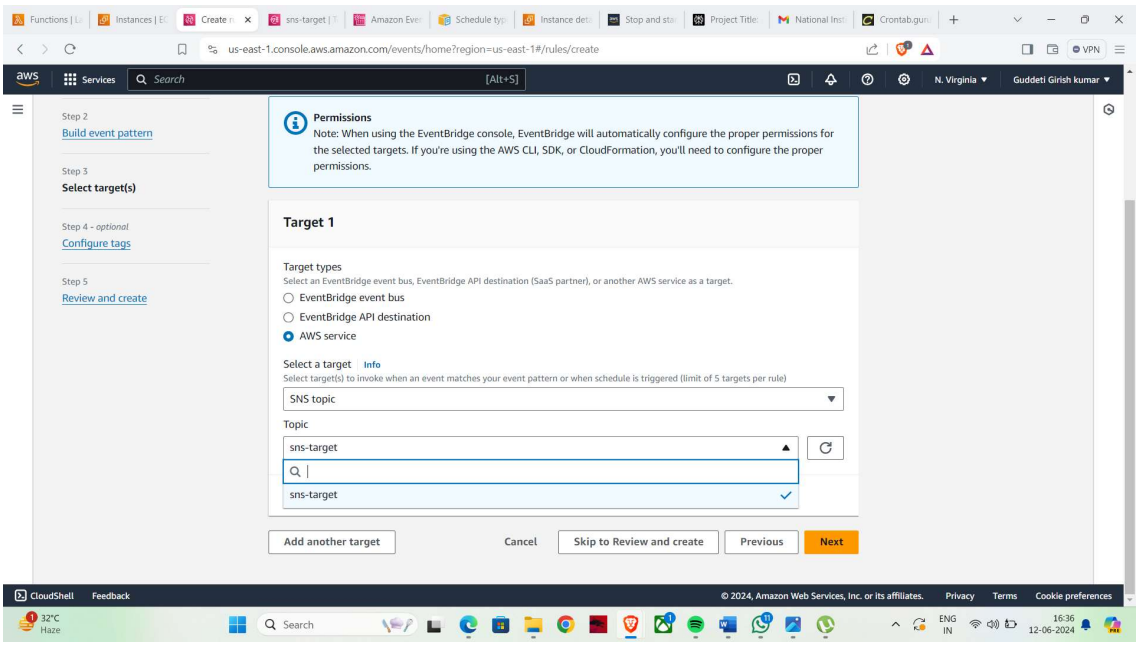
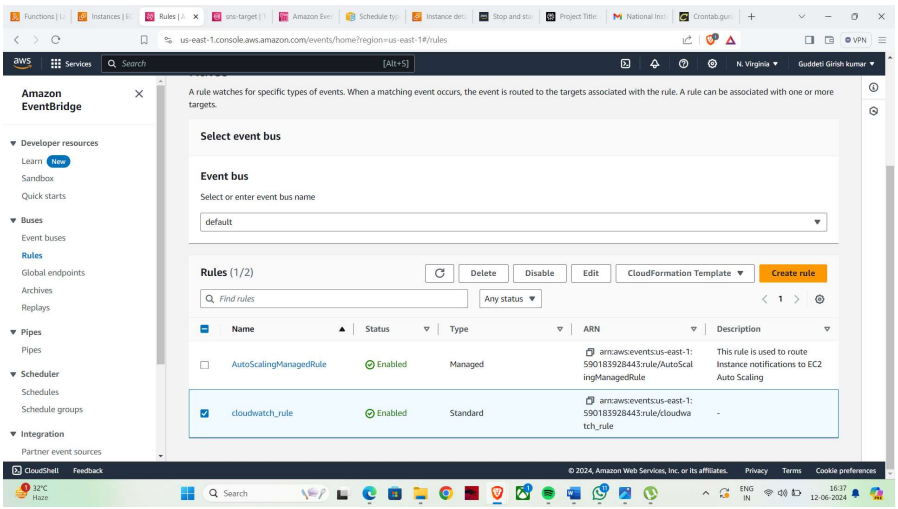
➔verified the Subscription with Gmail id

➔**Created the SNS .and attached to the target groups.**

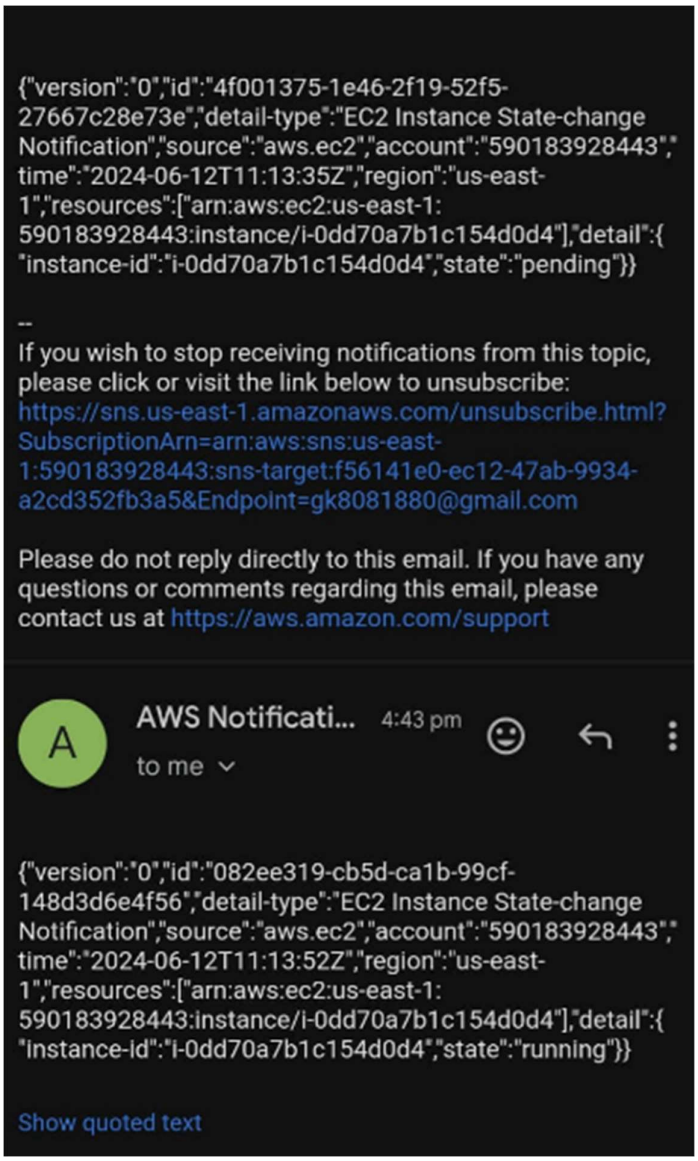


➔Click On next.

➔Successful Created the Cloudwatch Rule:-



➔This is the Proof , which the SNS is working or NOT :-



➔NOTE :- This gmail is generated when I have changed the state for Verification purpose.