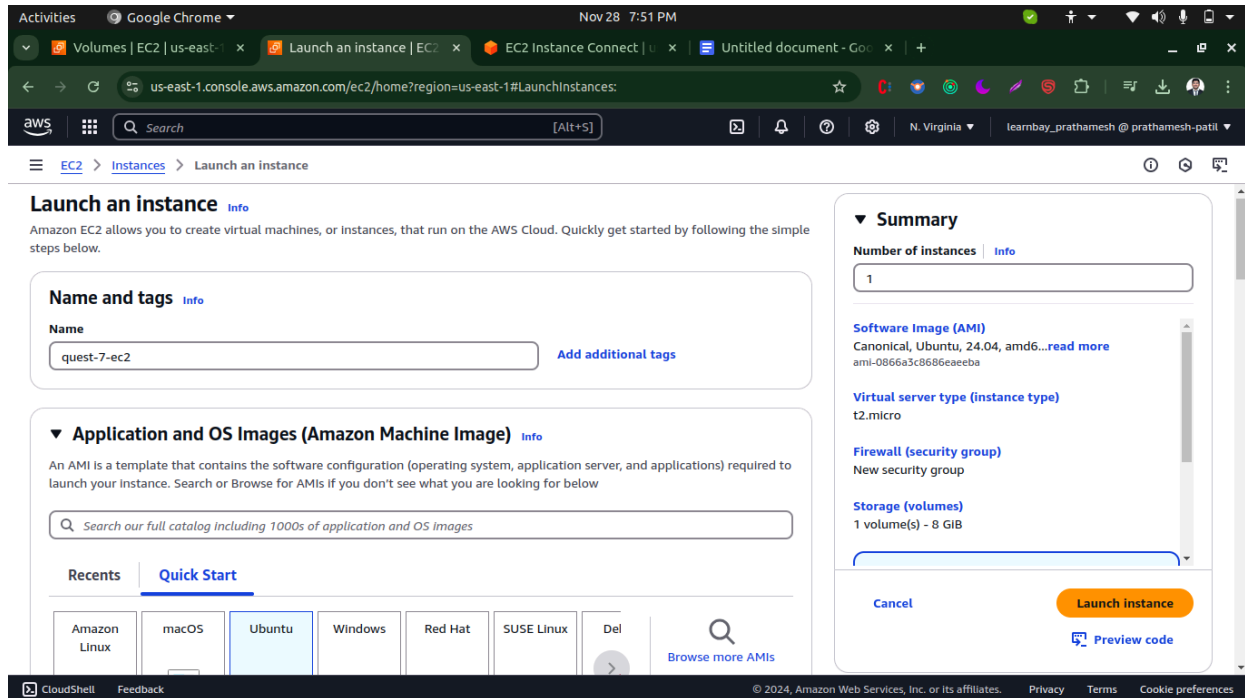
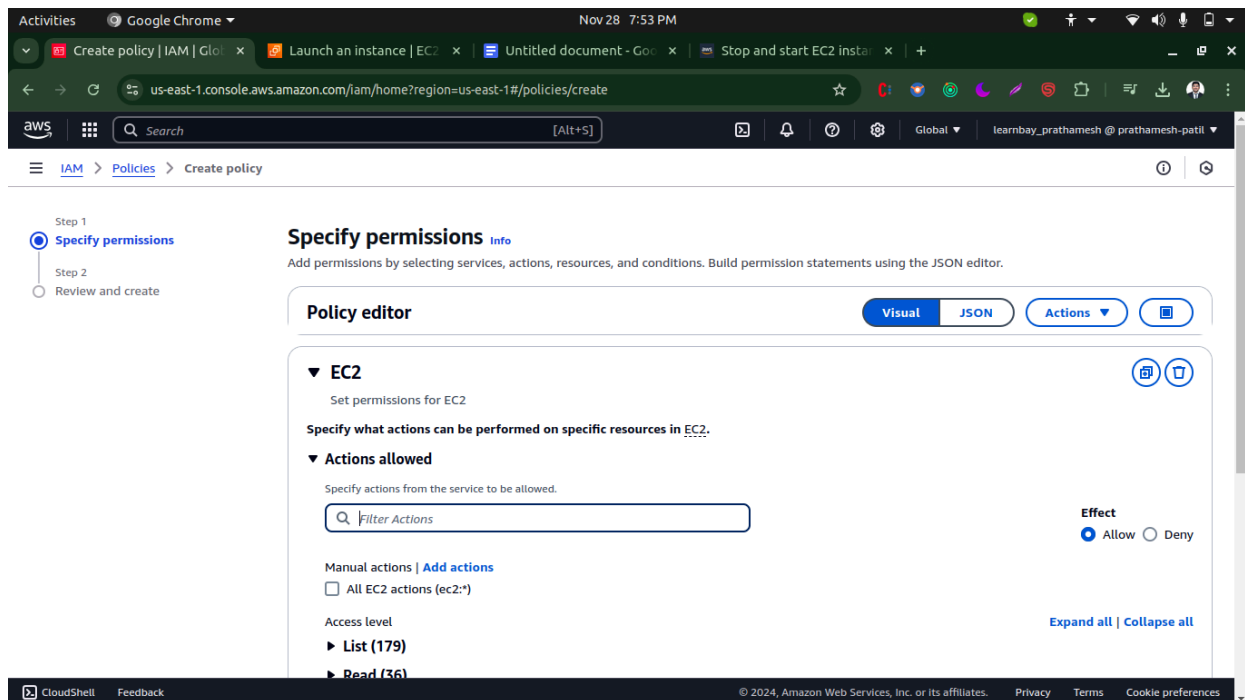


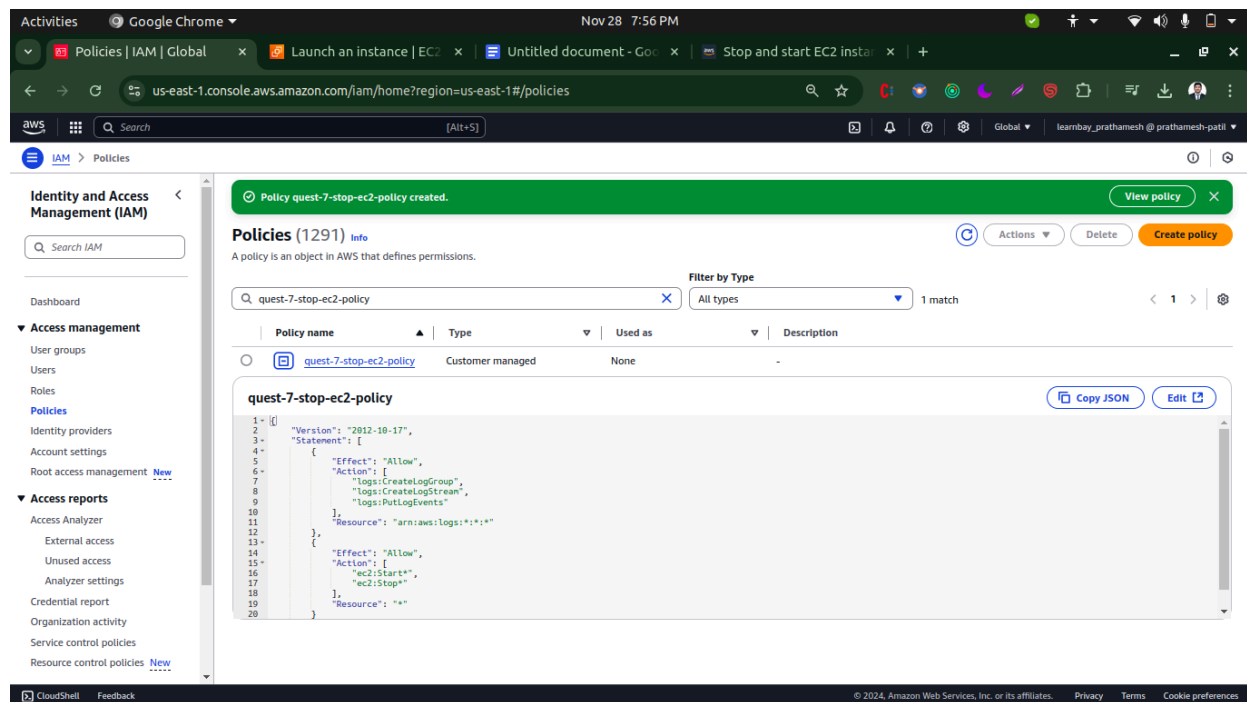
7) Create 1 Lambda function to stop the instance if it is running. You can use Google help to take the code if Java/ Nodejs / python to write inside the lambda editor (20 marks)



Go to IAM tab → select policies → create new policy

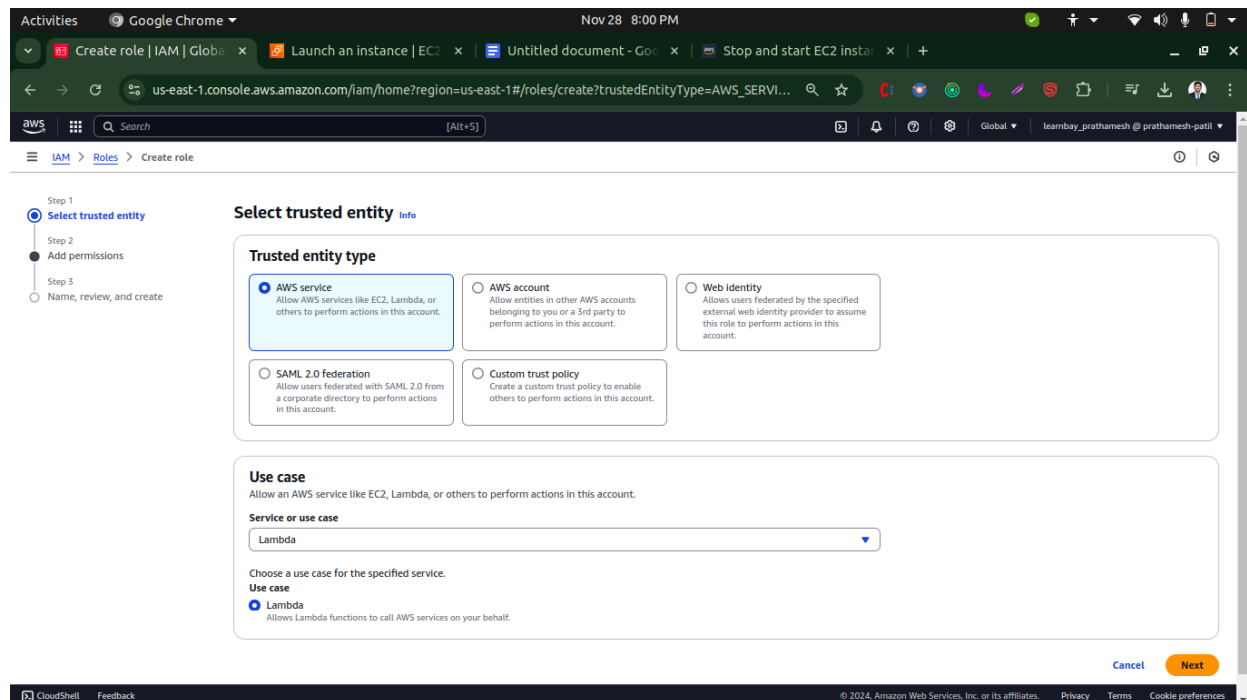


Go to <https://repost.aws/knowledge-center/start-stop-lambda-eventbridge> (official docs) copy policy and paste in JSON editor → click on Next → give policy name (quest-7-stop-ec2-policy) → click on create



you can verify the policy here

Now go to Roles tab → click on create role → then click on AWS services → select Lambda in use case



Select our new policy (quest-7-stop-ec2-policy)

The screenshot shows the AWS IAM console in Google Chrome. The browser tabs include 'Create role | IAM | Global', 'Launch an instance | EC2', 'Untitled document - Google', and 'Stop and start EC2 instance'. The address bar shows the URL: `us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles/create?trustedEntityType=AWS_SERVI...`. The page title is 'IAM > Roles > Create role'. On the left, a progress bar shows three steps: 'Step 1: Select trusted entity', 'Step 2: Add permissions' (which is the active step), and 'Step 3: Name, review, and create'. The main content area is titled 'Add permissions' with an 'Info' link. It shows 'Permissions policies (1/1002)' and a search bar with 'ques' entered, resulting in 2 matches. A table lists the policies:

Policy name	Type	Description
<input type="checkbox"/> AWSPrivateMarketplaceRequests	AWS managed	Provides access to creating requests in an ...
<input checked="" type="checkbox"/> quest-7-stop-ec2-policy	Customer managed	-

Below the table is a section 'Set permissions boundary - optional'. At the bottom right are 'Cancel', 'Previous', and 'Next' buttons. The footer includes 'CloudShell', 'Feedback', and copyright information for Amazon Web Services, Inc. or its affiliates.

Give role name(quest-7-stop-ec2-role) → click on create role

The screenshot shows the AWS IAM console in Google Chrome. The browser tabs are the same as in the previous screenshot. The address bar shows the URL: `us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles/create?trustedEntityType=AWS_SERVICE&s...`. The page title is 'IAM > Roles > Create role'. On the left, the progress bar shows three steps: 'Step 1: Select trusted entity', 'Step 2: Add permissions', and 'Step 3: Name, review, and create' (which is the active step). The main content area is titled 'Name, review, and create'. It has a 'Role details' section with a 'Role name' field containing 'quest-7-stop-ec2-role' and a 'Description' field containing 'Allows Lambda functions to call AWS services on your behalf.' Below this is a 'Step 1: Select trusted entities' section with an 'Edit' button. At the bottom, there is a 'Trust policy' section with a code editor showing the following JSON:

```
1 {  
2   "Version": "2012-10-17",
```

The footer includes 'CloudShell', 'Feedback', and copyright information for Amazon Web Services, Inc. or its affiliates.

Go to Lamda tab

Click on Create function

Choose Author from scratch. → Give function name - quest7StopEc2 → Select runtime - python 3.9

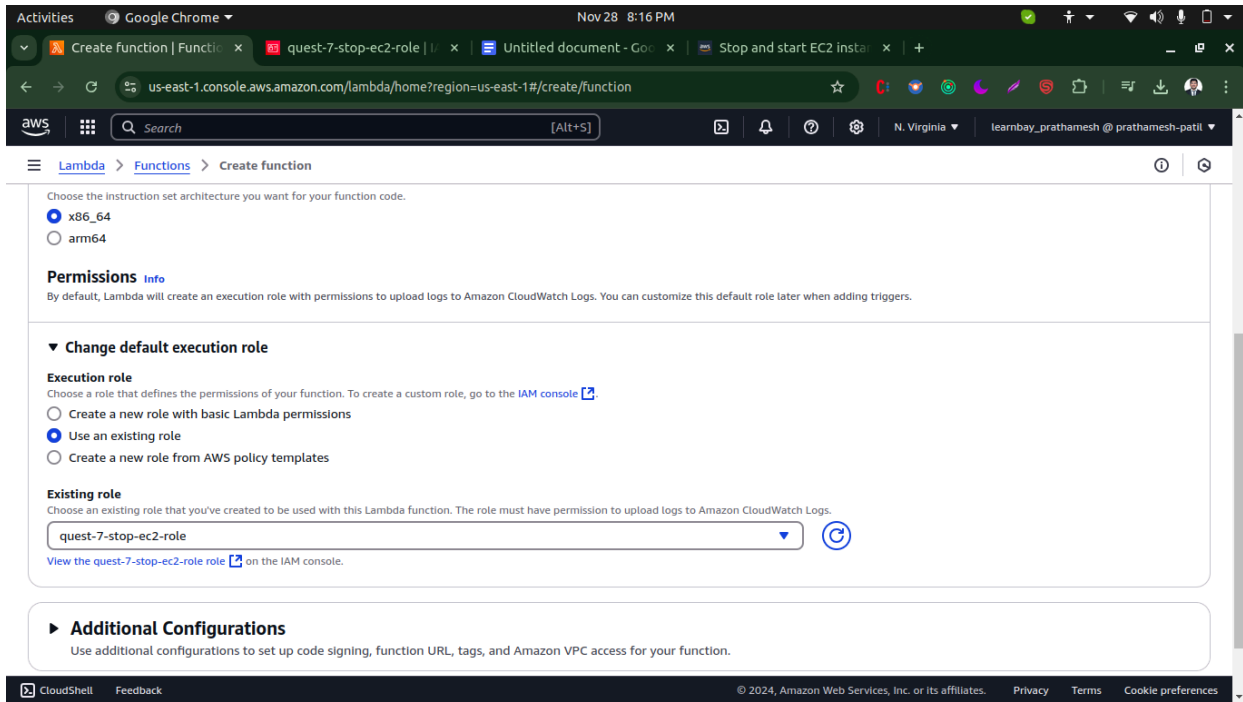
The screenshot shows the AWS Lambda console in Google Chrome. The browser address bar shows the URL: `us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/create/function?firstrun=true`. The page title is "Create function". The left sidebar shows the navigation menu with "Lambda" and "Functions" selected. The main content area is titled "Basic information" and contains the following sections:

- Function name:** A text input field containing "quest7StopEc2". Below the field, a note states: "Function name must be 1 to 64 characters, must be unique to the Region, and can't include spaces. Valid characters are a-z, A-Z, 0-9, hyphens (-), and underscores (_)."
- Runtime:** A dropdown menu showing "Python 3.9". A note above the dropdown says: "Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby."
- Architecture:** Two radio buttons are visible: "x86_64" (selected) and "arm64". A note above says: "Choose the instruction set architecture you want for your function code."
- Permissions:** A section with a note: "By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers." Below this note is a link: "Change default execution role".
- Additional Configurations:** A link to expand this section.

The right sidebar contains a "Tutorials" section with the heading "Create a simple web app". It includes a list of steps: "Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage" and "Invoke your function through its function URL". There is a "Learn more" link and a "Start tutorial" button.

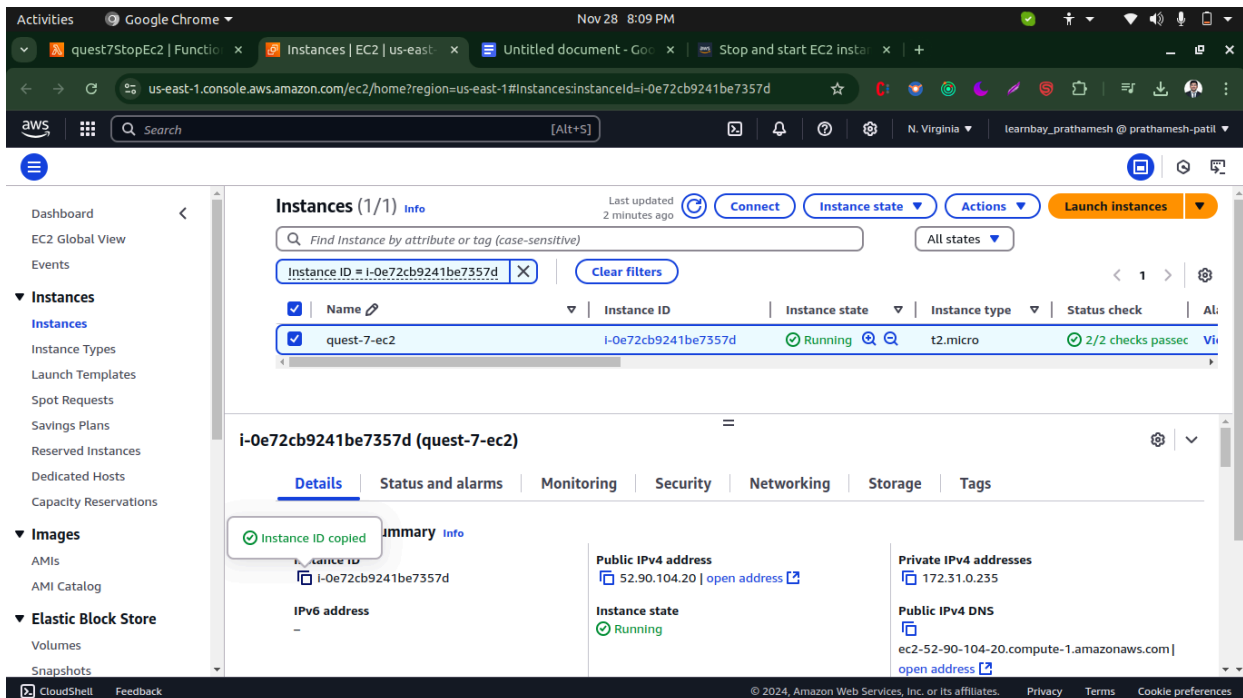
The footer of the page shows "© 2024, Amazon Web Services, Inc. or its affiliates." and links for "Privacy", "Terms", and "Cookie preferences".

Under Permissions, expand Change default execution role. → Under Execution role, choose Use an existing role. → Under Existing role, choose the IAM role.(quest-7-stop-ec2-role)



Create lambda

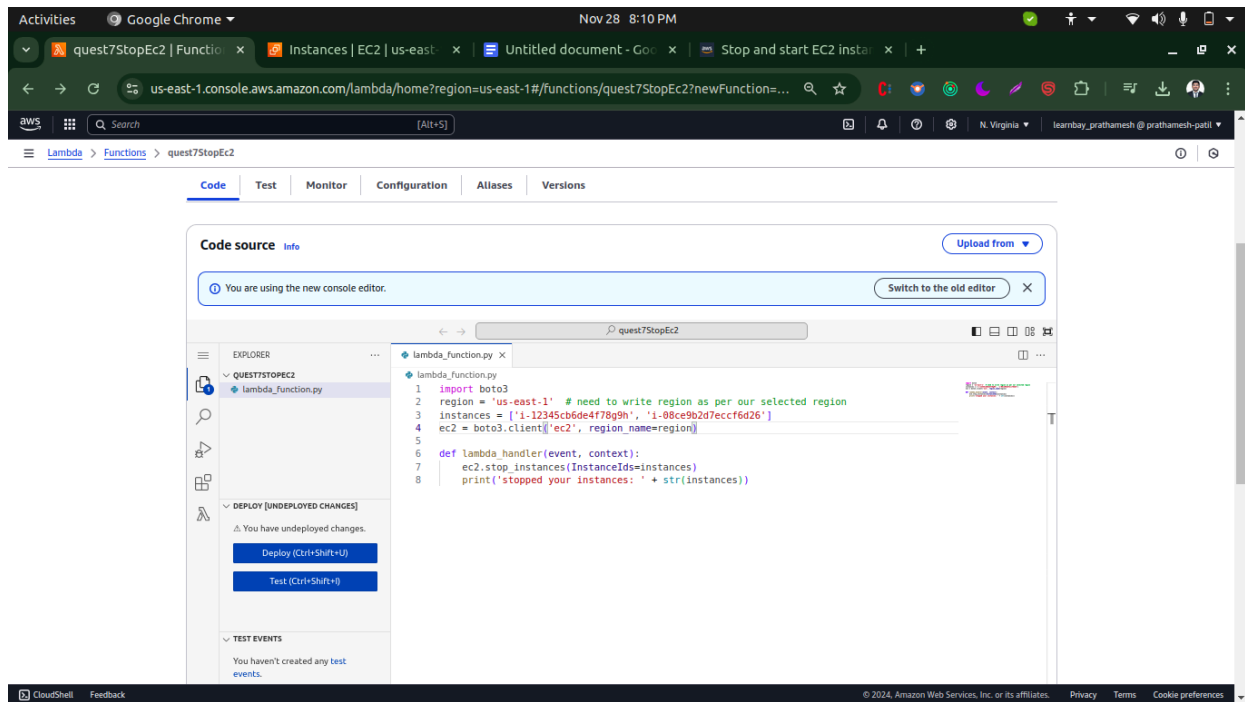
Copy the instance id from instances tab



Now here in code editor write below code

```
import boto3
region = 'us-east-1'
instances = ['i-0e72cb9241be7357d']
ec2 = boto3.client('ec2', region_name=region)

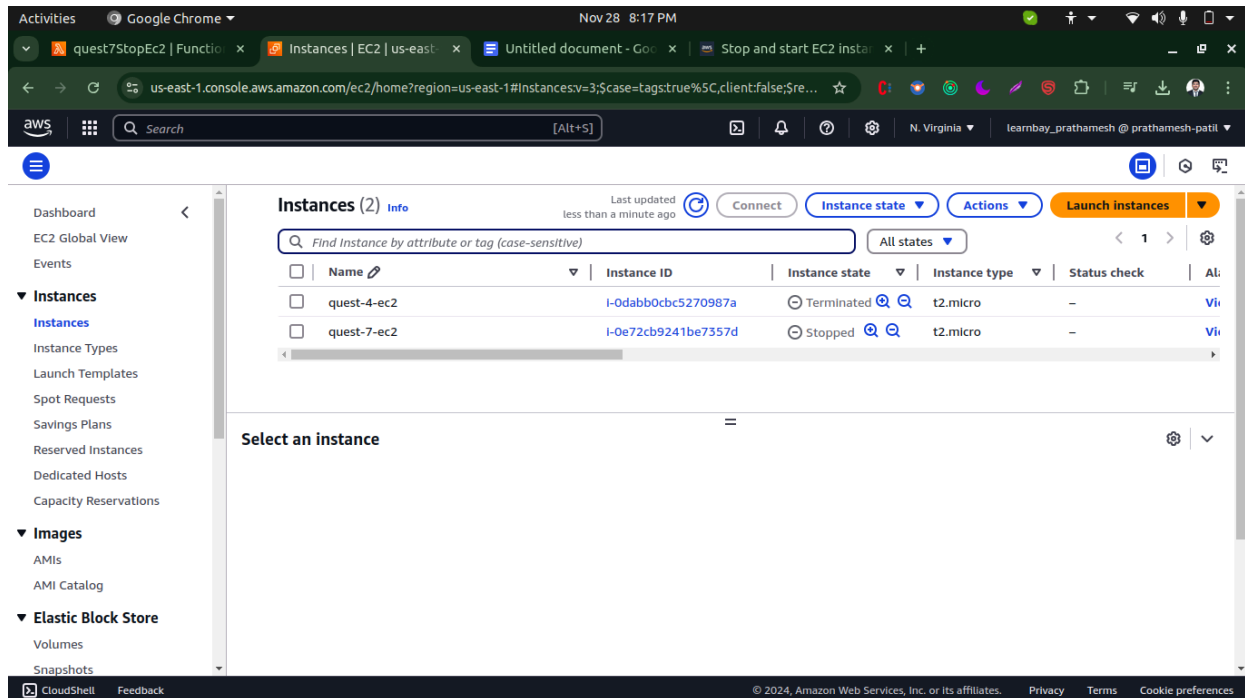
def lambda_handler(event, context):
    ec2.stop_instances(InstanceIds=instances)
    print('stopped your instances: ' + str(instances))
```



Click on deploy in blue color

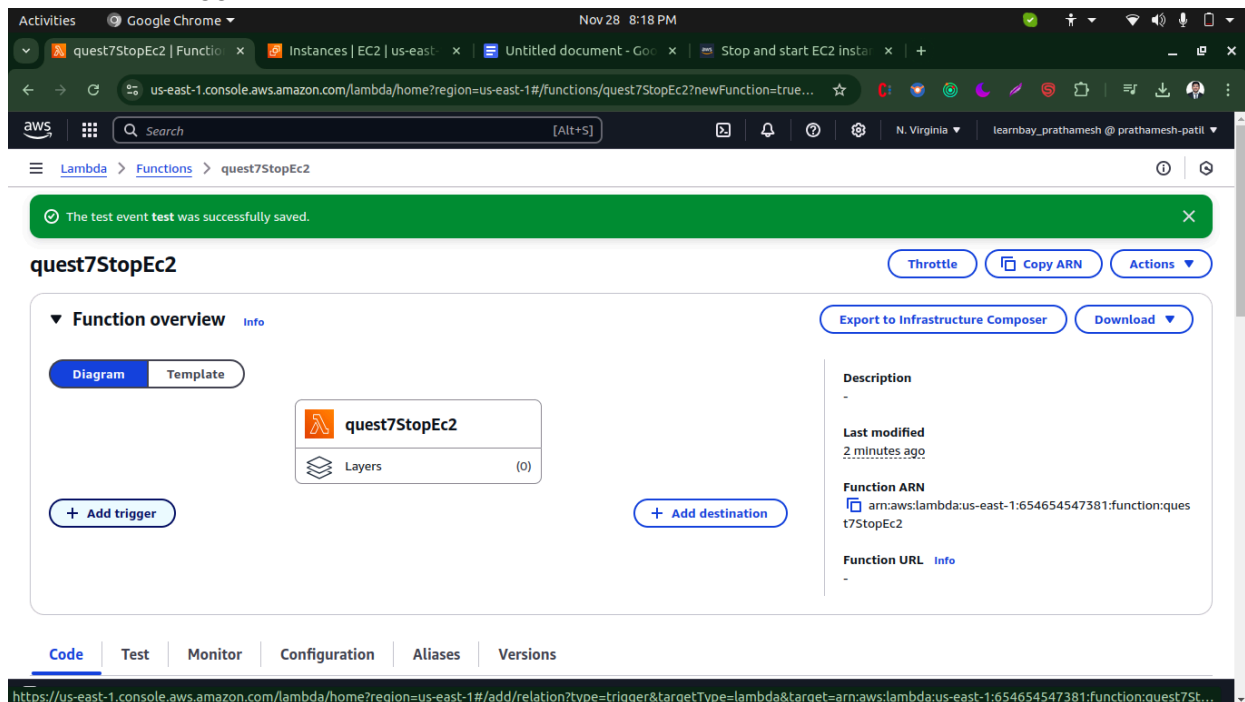
Now click on test → create new test event → give name test → save

Then click on Test to verify if code is working or not
Verify if ec2 has stopped or not



It has now stopped

To automate the lambda to trigger daily
Click on add trigger



Select Eventbridge from dropdown → click on create new rule → enter some name → click on schedule expression → enter cron expression for daily trigger (But for testing I have used every minute trigger = `cron(* * * * ? *)`)

Activities Google Chrome Nov 28 8:49 PM

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/add/relation?focus=aws%2FLambda&targ...

Lambda Add triggers

Add trigger

Trigger configuration [info](#)

EventBridge (CloudWatch Events)
aws asynchronous schedule management-tools

Rule
Pick an existing rule, or create a new one.

☒ Create a new rule
☐ Existing rules

Rule name
Enter a name to uniquely identify your rule.

quest7-stopec2

Rule description
Provide an optional description for your rule.

daily stop ec2 trigger

Rule type
Trigger your target based on an event pattern, or based on an automated schedule.

☐ Event pattern
☒ Schedule expression

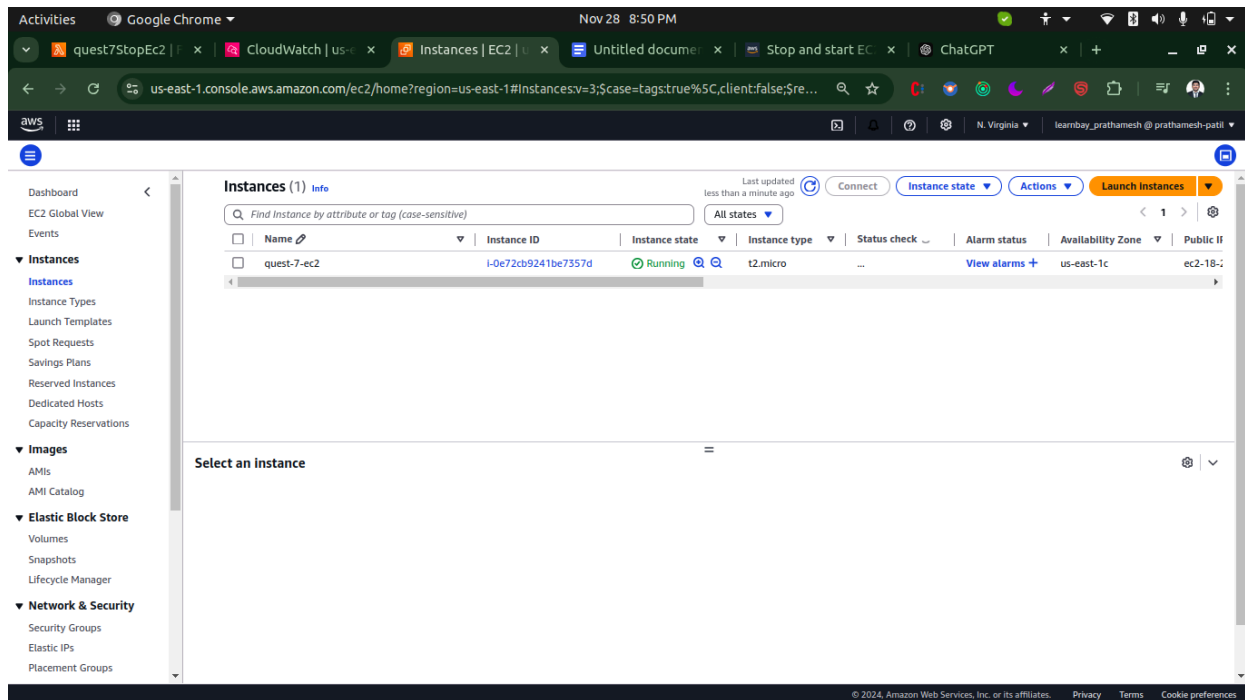
Schedule expression
Self-trigger your target on an automated schedule using [Cron or rate expressions](#). Cron expressions are in UTC.

cron(* * * * ? *)
e.g. rate(1 day), cron(0 17 ? * MON-FRI *)

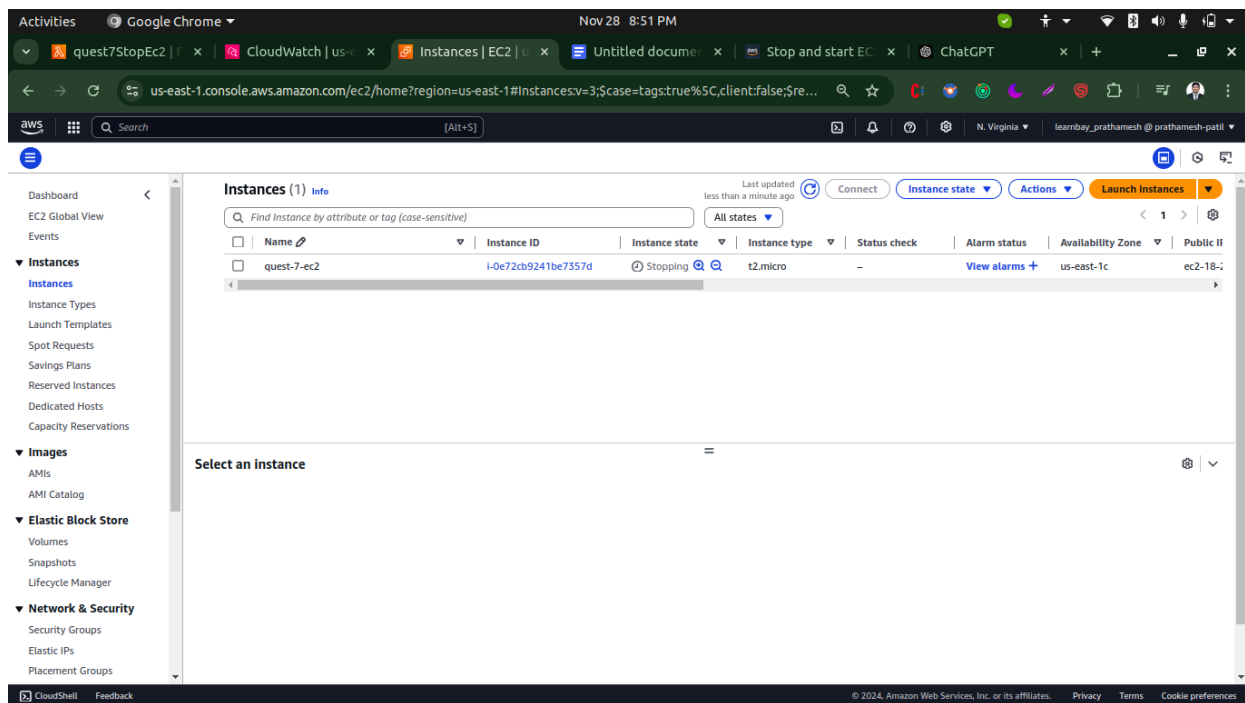
Lambda will add the necessary permissions for Amazon EventBridge (CloudWatch Events) to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.

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Again start the ec2



Now after exactly one minute lamda triggered



And stopped the ec2

Now delete the lamda function, create policy, role,ec2