

6. Demonstrate the execution of a simple Python program using AWS Lambda functions. Include step-by-step instructions for creating and configuring the Lambda function, list out the languages supported by AWS Lambda.

<https://www.youtube.com/watch?v=J5710cdMp5A>

7. Create an AWS IAM User with attached policy and also Implement a role based access between AWS services as well as Create an group with attached policies

<https://www.youtube.com/watch?v=qYnoxSqCYoY>

8. Migrate a website from local server to Cloud using Docker.

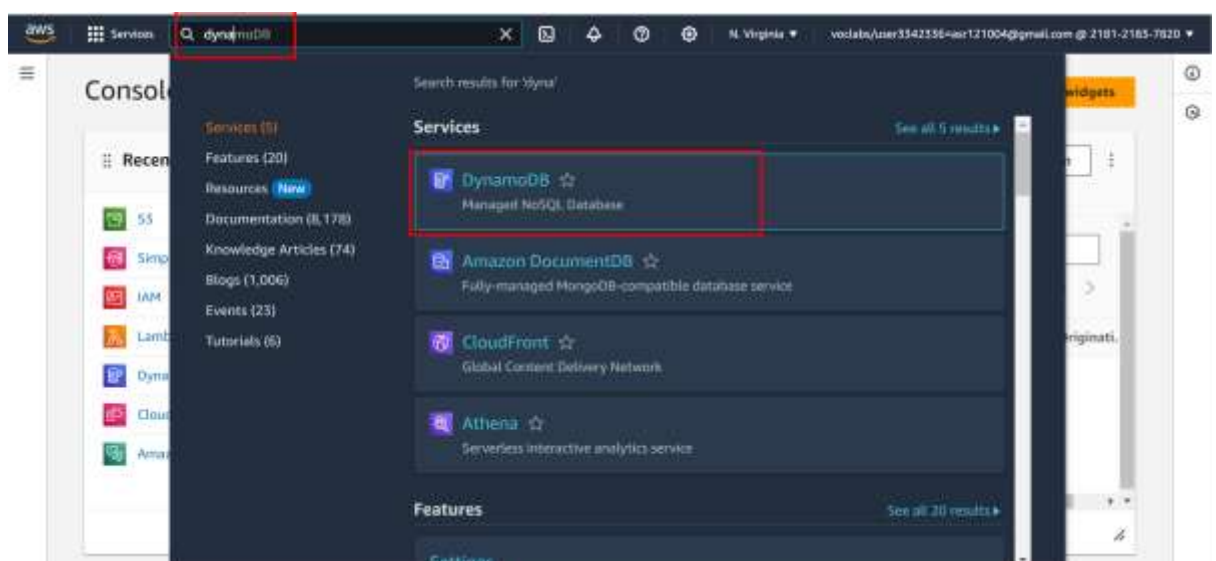
<https://www.youtube.com/watch?v=ipzp07hFF5E>

For Document

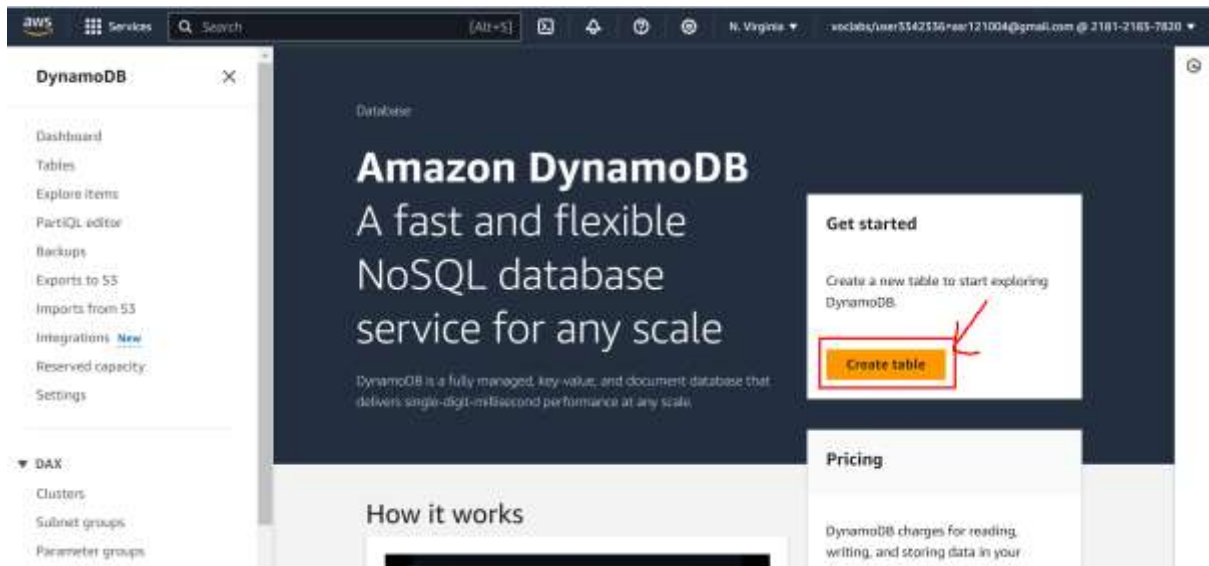
[https://docs.google.com/document/d/17wnx5YY8ZUo1c6k\\_5Ymnzio\\_AU2U3rqvB6w0uNNLqHc/edit?usp=sharing](https://docs.google.com/document/d/17wnx5YY8ZUo1c6k_5Ymnzio_AU2U3rqvB6w0uNNLqHc/edit?usp=sharing)

9. Launch a NoSQL database using Amazon DynamoDB.

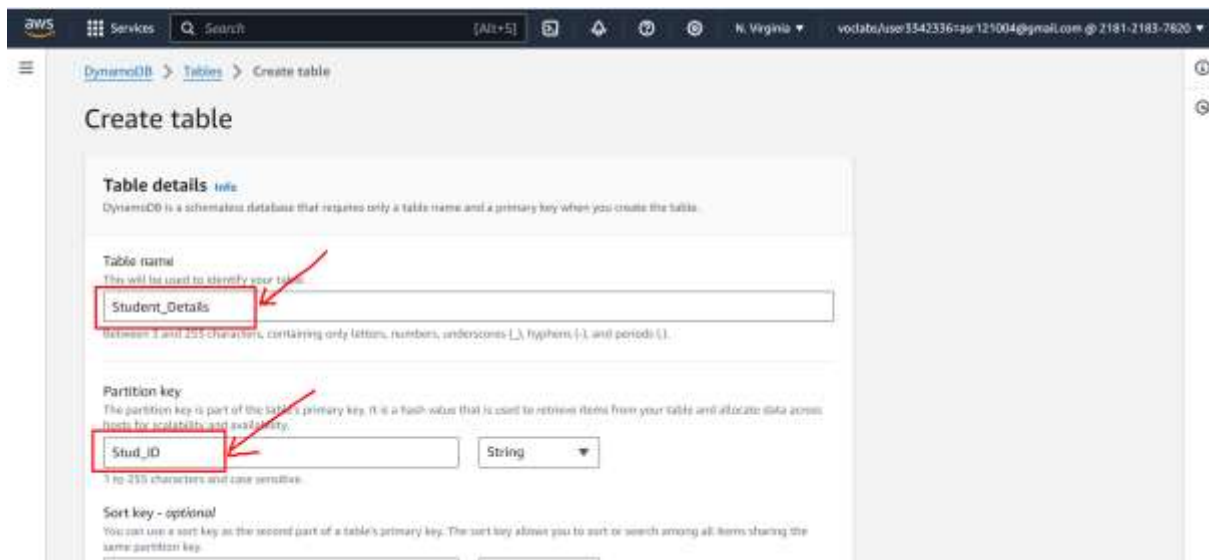
1. Search for the DynamoDB and click on DynamoDB



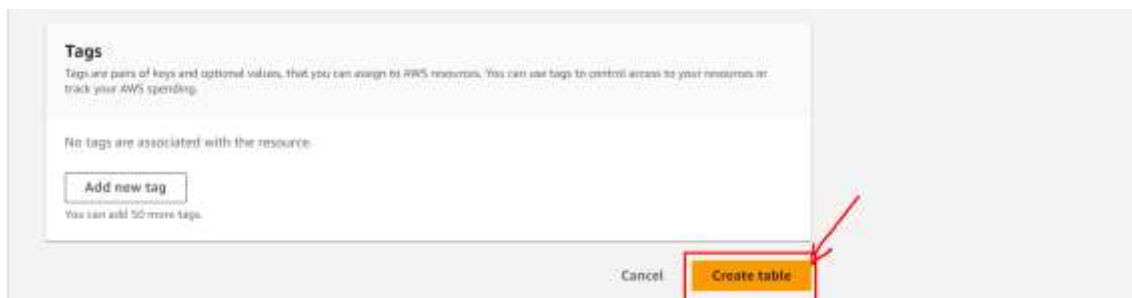
## 2. Now click on Create Table



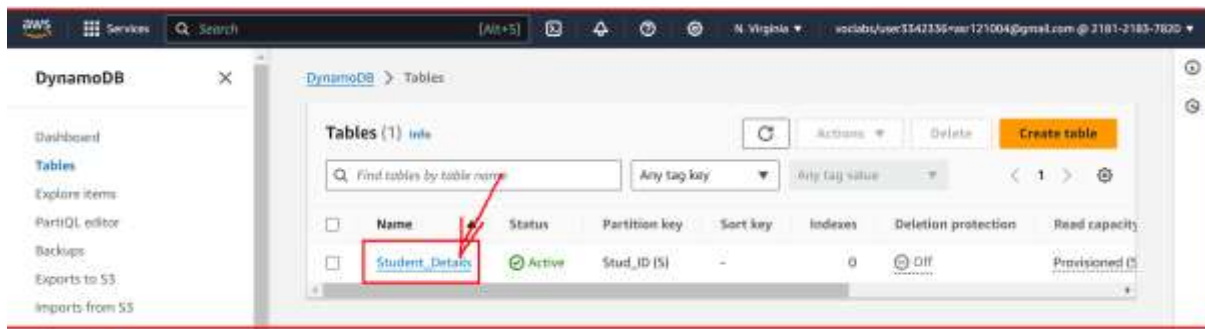
## 3. Now name your table and provide partition key



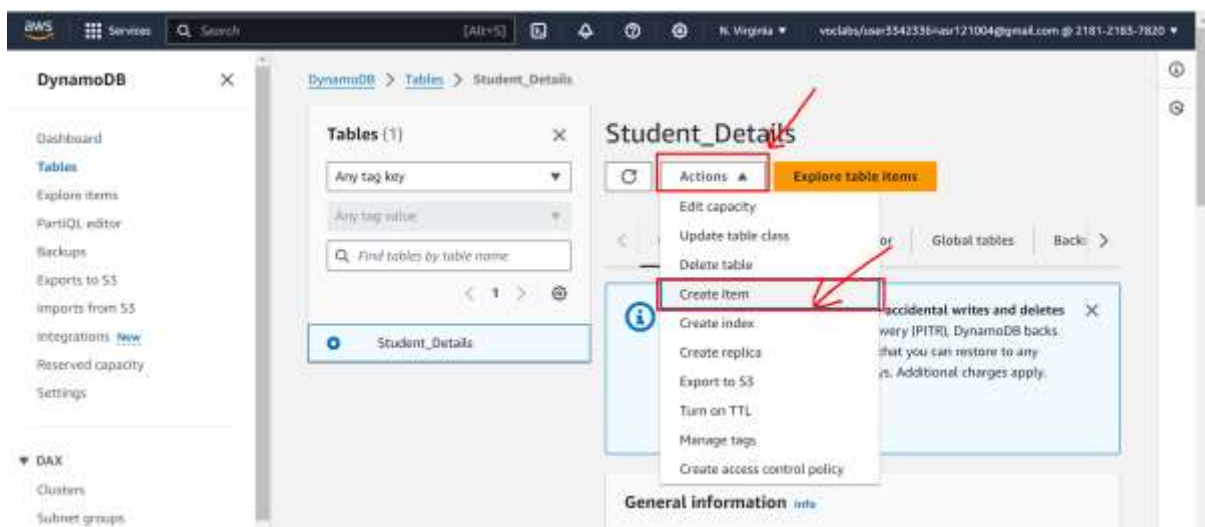
## 4. Now by leaving rest of the part by default scroll down to last of the page and click on create table



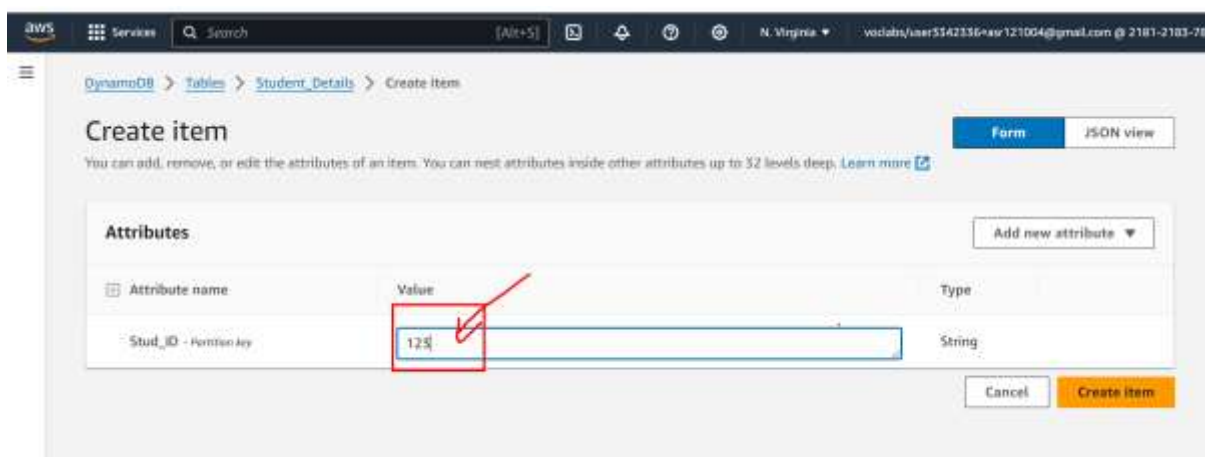
5. Click on the table “Student\_Details”



6. To create an Item => click on actions => click on Create Item



7. Enter the Stud\_Id



8. To add more attributes click on Add new attributes and select the datatype

The screenshot shows the AWS Management Console 'Create item' page for a table named 'Student\_Details'. The 'Form' tab is selected. Under the 'Attributes' section, there is a table with columns 'Attribute name', 'Value', and 'Type'. One attribute is already added: 'Stud\_ID - Partition key' with value '123' and type 'String'. A red box highlights the 'Add new attribute' button, with a red arrow pointing to it from the right.

Attribute name	Value	Type
Stud_ID - Partition key	123	String

This screenshot shows the same 'Create item' page, but the 'Add new attribute' dropdown menu is open. The menu lists various data types: String, Number, Boolean, Binary, Null, String set, Number set, Binary set, List, and Map. The 'String' option is highlighted with a red box.

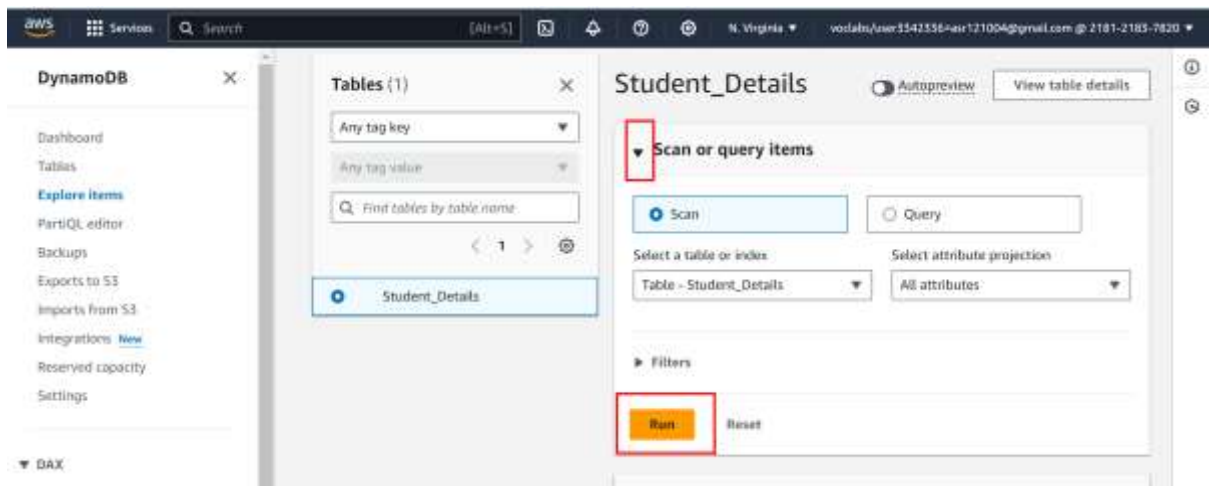
Attribute name	Value	Type
Stud_ID - Partition key	123	String

9. Click on create item

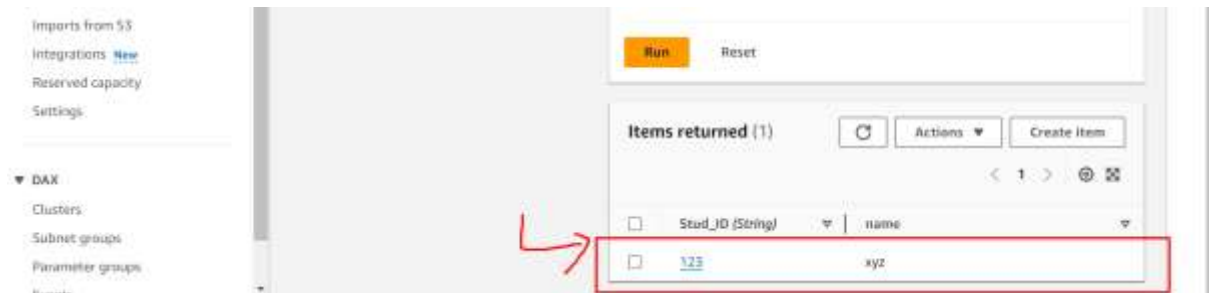
This screenshot shows the 'Create item' page with two attributes added: 'Stud\_ID - Partition key' (value '123', type 'String') and 'name' (value 'xyz', type 'String'). A red box highlights the 'Create item' button at the bottom right, with a red arrow pointing to it from the right.

Attribute name	Value	Type
Stud_ID - Partition key	123	String
name	xyz	String

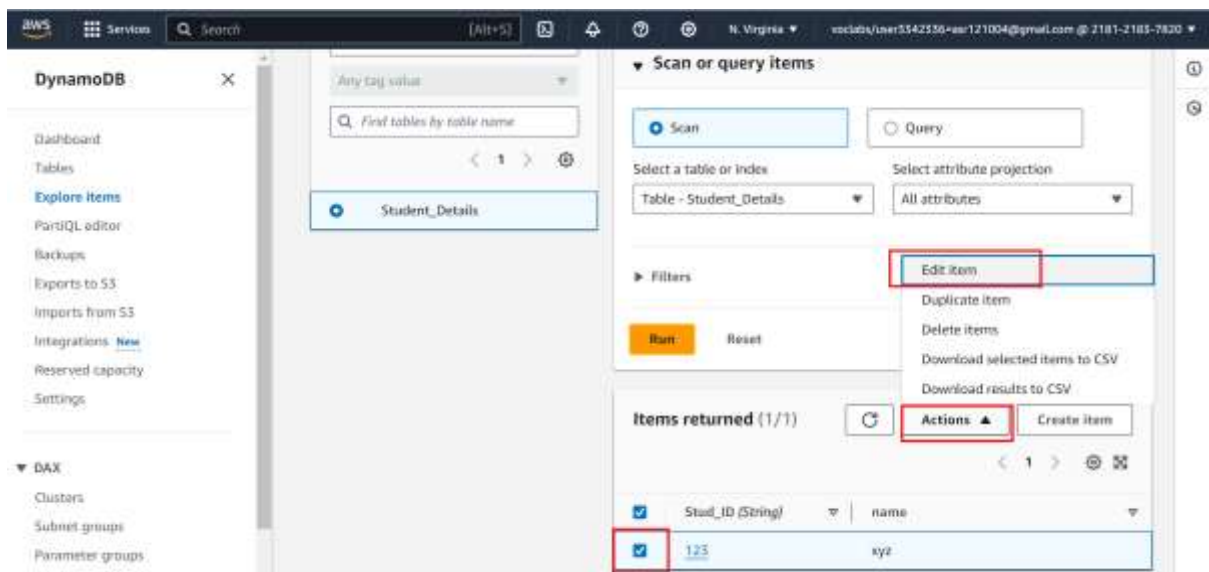
10. To scan the table expand “Scan or Query Items” then click on “Run”



11. Now you can read all the items from the table



12. To update the data of an Item then select the item → Click on Actions → Click on Edit Item



13. Now change the value which you required to update then click on Save and Close

**Edit item**

You can add, remove, or edit the attributes of an item. You can nest attributes inside other attributes up to 32 levels deep. [Learn more](#)

**Attributes**

Attribute name	Value	Type
Stud_ID - Primary key	123	String
name	abc	String

[Add new attribute](#)

[Cancel](#) [Save](#) [Save and close](#)

14. Now if you want to delete any Item then select the Items → Actions → Click on Delete Items → Click on Delete

**Filters**

[Run](#) [Reset](#)

**Items returned (1/1)**

[Refresh](#) [Actions](#) [Create item](#)

<input checked="" type="checkbox"/>	Stud_ID (String)	name
<input checked="" type="checkbox"/>	123	abc

**Delete item**

Delete 1 item from the **Student\_Details** table? This action cannot be reversed.

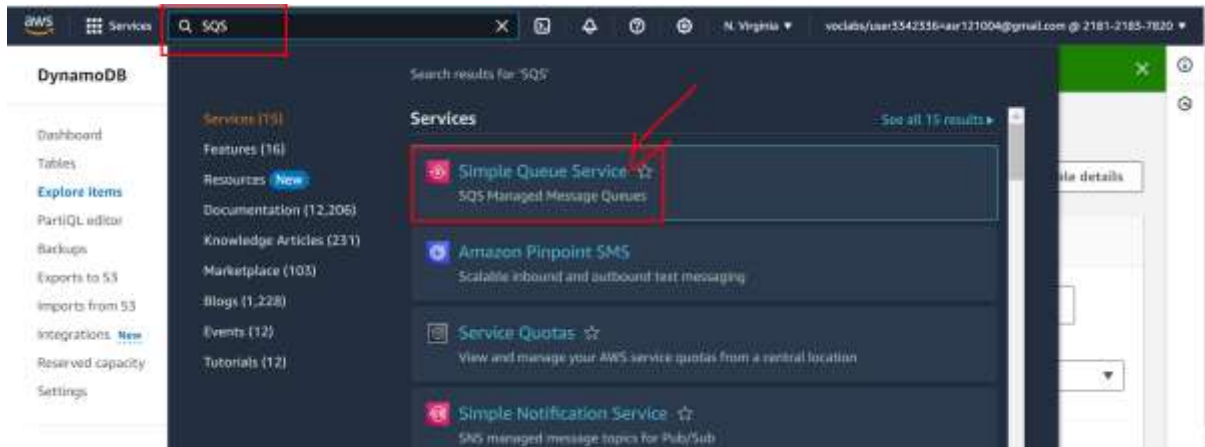
[Cancel](#) [Delete](#)



10. Create loosely coupled services with Amazon SQS and Amazon SNS to process data received from the applications.

### For SQS (Simple Queue Service)

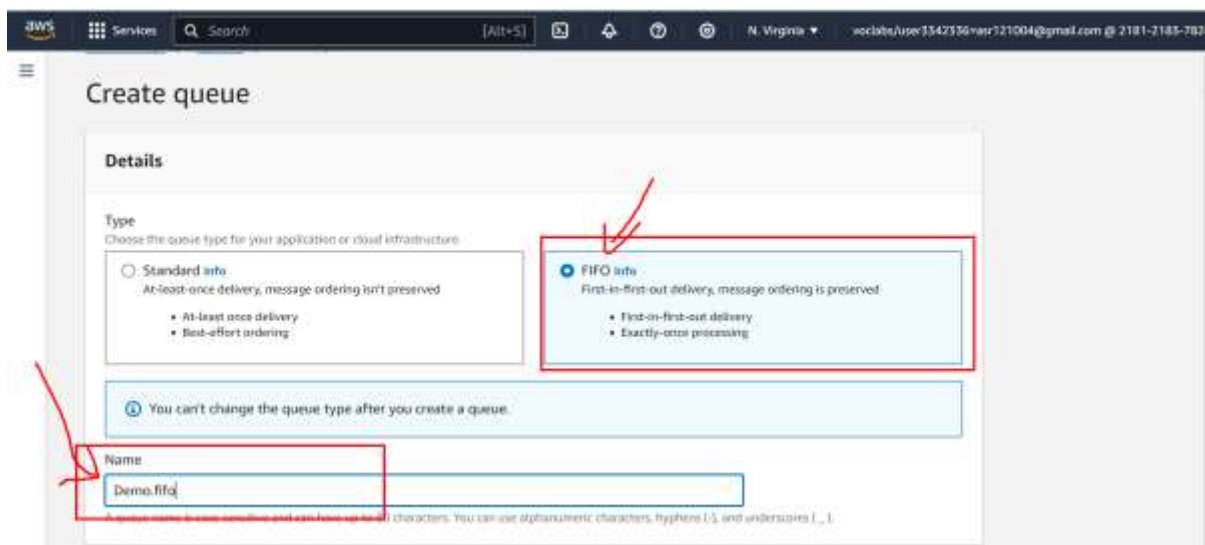
1. Search for SQS then Click on Simple Queue Service



2. Click on Create Queue



3. Select Fifo → name your Queue



- Keep the configuration as default options and Click on Content-based deduplication because we have a message group ID, it ensures the same message if you send it with same group ID will not be Duplicated.

**Configuration**  
Set the maximum message size, visibility to other consumers, and message retention. [Info](#)

**Visibility timeout** [Info](#)  
30 Seconds  
Should be between 0 seconds and 12 hours.

**Message retention period** [Info](#)  
4 Days  
Should be between 1 minute and 14 days.

**Delivery delay** [Info](#)  
0 Seconds  
Should be between 0 seconds and 15 minutes.

**Maximum message size** [Info](#)  
256 KB  
Should be between 1 KB and 256 KB.

**Receive message wait time** [Info](#)  
0 Seconds  
Should be between 0 and 20 seconds.

☒ **Content-based deduplication**  
When content-based deduplication is enabled, the message deduplication ID is optional.

- Also Check the **Message group** and **Per message group** options in the Deduplication scope

☒ **Content-based deduplication**  
When content-based deduplication is enabled, the message deduplication ID is optional.

☒ **Enable high throughput FIFO** [Info](#)  
Configure your FIFO queue for maximum throughput.

**Deduplication scope** [Info](#)  
Specify the scope of deduplication for a FIFO queue.

☐ **Queue**  
Deduplicate all messages in a queue.

☒ **Message group**  
Deduplicate all messages that belong to the same message group.

**FIFO throughput limit** [Info](#)  
Specify how to apply the throughput limit on FIFO queue.

☐ **Per queue**  
Apply the throughput limit at the queue level.

☒ **Per message group ID**  
Apply the throughput limit at the message group level.

- Keep the Access policy options as default and keep all other Options as default and click on **Create queue**

**Tags - Optional** [Info](#)  
A tag is a label assigned to an AWS resource. Use tags to search and filter your resources or track your AWS costs.

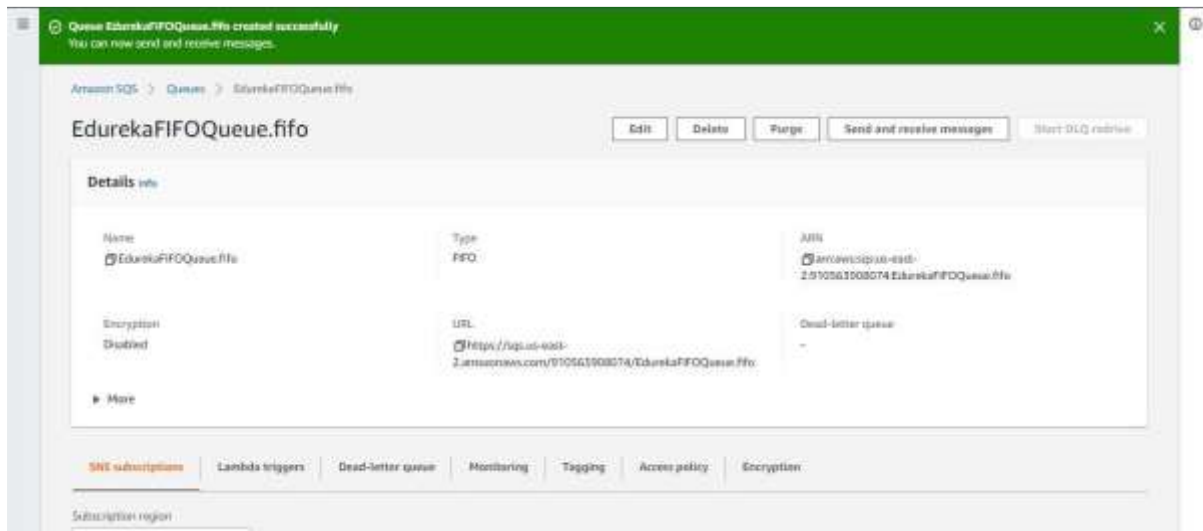
Key:  Value - optional:  [Remove](#)

[Add new tag](#)  
You can add 40 more tags.

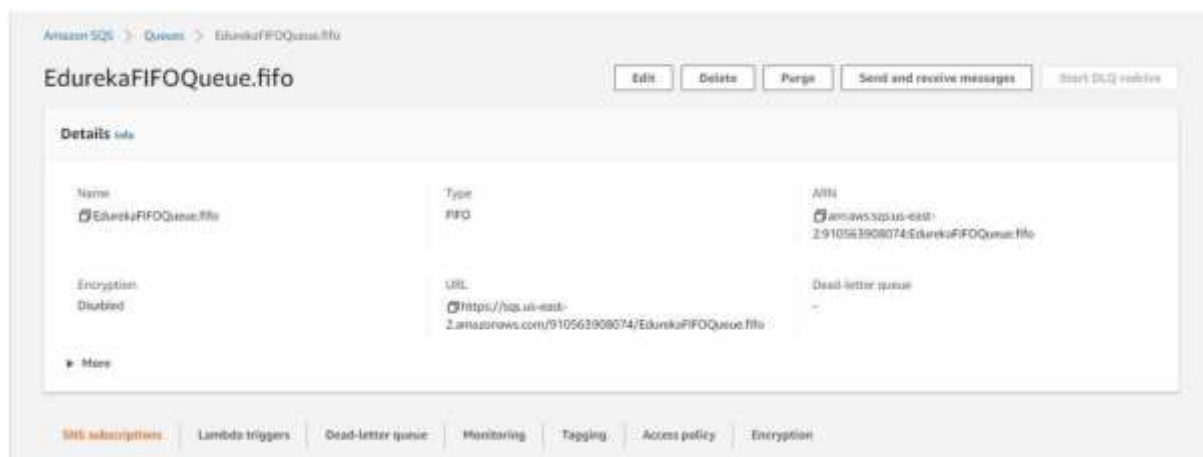
[Cancel](#) [Create queue](#)



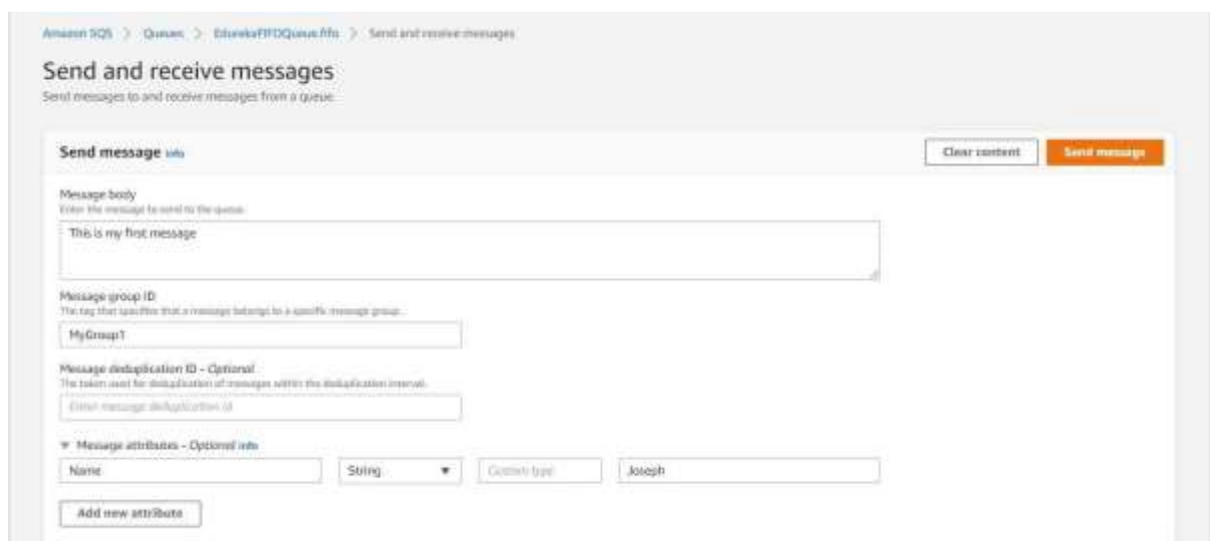
7. Now the FIFO Queue is successfully created. We can see the description of the Queue



8. Click on Send and receive messages



9. Enter the message in the Message Body, enter the Message group ID as **MyGroup1** and you can also message attributes.



10. Click on Send message and the message has been send, ready to receive in the message section.

Amazon SQS > Queues > StandardFIFOQueue.fifo > Send and receive messages

### Send and receive messages

Send messages to and receive messages from a queue.

**Send message info** Clear content Send message

✓ Your message has been sent and is ready to be received. View details ✕

**Message body**  
Enter the message to send to the queue.  
This is my first message

**Message group ID**  
The tag that specifies that a message belongs to a specific message group.  
MyGroup1

**Message deduplication ID - Optional**  
The key used for deduplication of messages within the deduplication interval.  
Enter message deduplication ID

**Message attributes - Optional info**

Name	String	Custom type	Value
	String	Custom type	Joseph

11. Here one message is available and polling duration is 30, Now Click on the **Poll for messages** and we can see the received message.

**Receive messages info** Edit poll settings Stop polling Poll for messages

Messages available: 1 | Polling duration: 30 | Maximum message count: 10 | Polling progress: 0% (0 received/10000)

**Messages (0)** View details Delete

Search messages

ID	Sent	Size	Receive count
No messages. To view messages in the queue, poll for messages.			

Poll for messages

**Receive messages info** Edit poll settings Stop polling Poll for messages

Messages available: 1 | Polling duration: 30 | Maximum message count: 10 | Polling progress: 33% (1 received/10000)

**Messages (1)** View details Delete

Search messages

ID	Sent	Size	Receive count
7a823634-3460-498f-b7bb-47382b11404d	8/17/2022, 15:37:36 GMT+5:30	38 bytes	1

12. Now Click on ID to check the specifications of the Received message.

**Message: 7a823834-34b0-488f-b7bb-47382b31404d**

Details

Body

Attributes

ID 7a823834-34b0-488f-b7bb-47382b31404d	Size 38 bytes	MD5 of message body f1cbc3e088dc9ea45f61b4b38c4ddfe9	Sender account ID 910563908074
Sent 8/17/2022, 15:37:36 GMT+5:30	First received 8/17/2022, 15:37:40 GMT+5:30	Receive count 2	Message attributes count 1
Message attributes size 16 bytes	MD5 of message attributes 6e54253a60ed9ad26b0f5d32d8236d0d	Message group ID Mygroup1	Message deduplication ID 4a0f79432106cb61b6124e49dc0e79589430be94f822427ff6a9b5fac141de6f

Sequence number

Done

**Message: 7a823834-34b0-488f-b7bb-47382b31404d**

Details

Body

Attributes

This is my new message

Done

13. Now again send the message, we can see the same message is coming, it is not creating any new IDs for it, Here the message deduplication helped us if you send the same message again with the same Group ID, it will consider as same message. \

**Send and receive messages**  
Send messages to and receive messages from a queue.

Send message

Clear content

Send message

✔ Your message has been sent and is ready to be received.

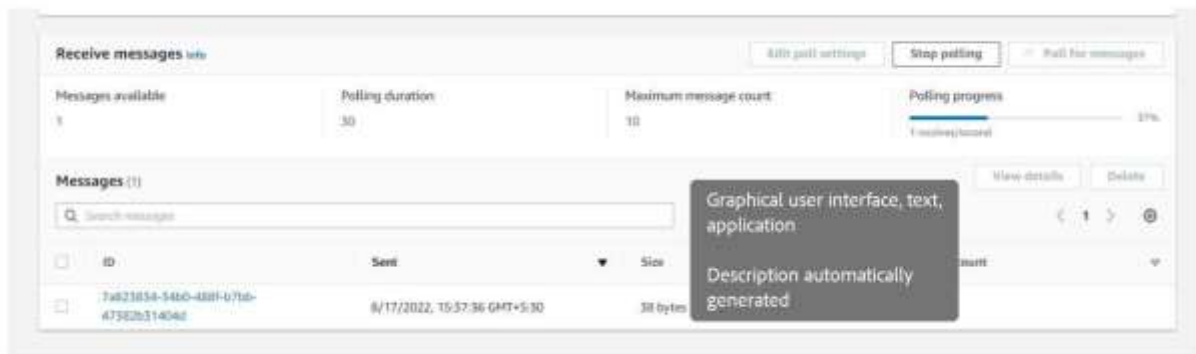
View details

✕

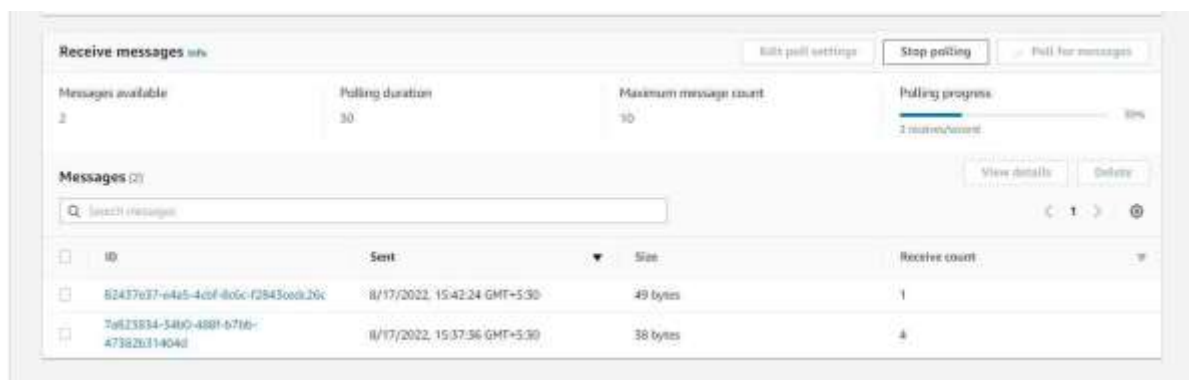
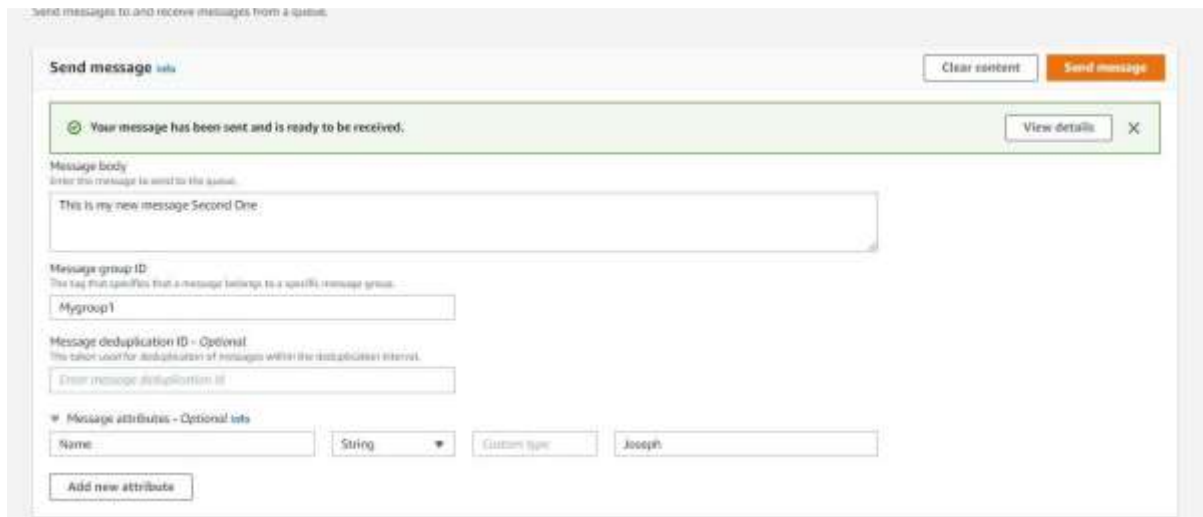
Message body  
Enter the message to send to the queue.

This is my new message

Message group ID

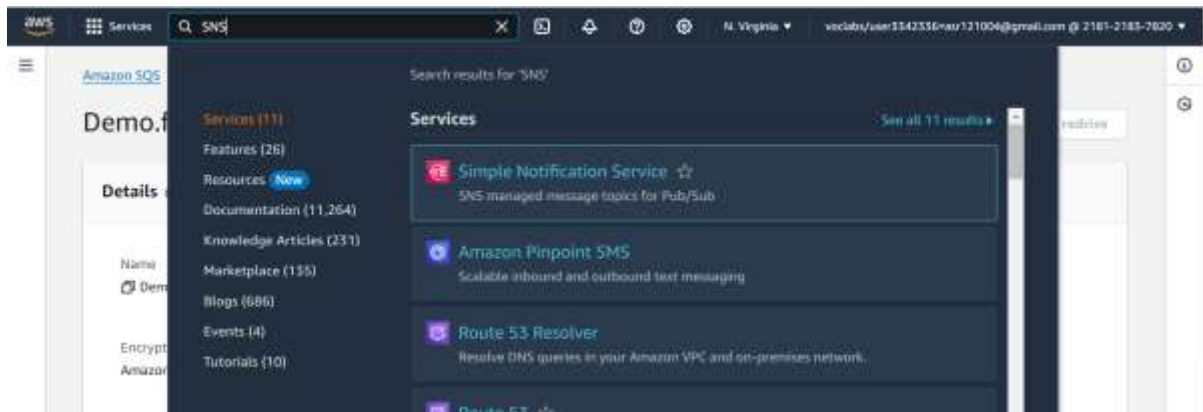


14. Now we edit the message with the same Group ID and send the message, we can see the after polling the ID has changed.

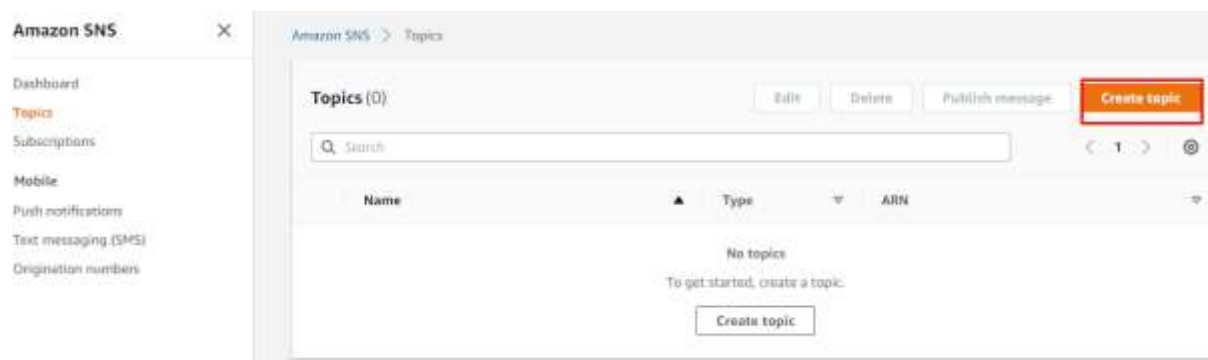


## For SNS (Simple Notification Service)

1. Search for SNS then Click on Simple Notification Service



2. To create a topic, click on **Create Topic**.



3. Enter the topic name followed by the display name and click on **Create topic**.

A screenshot of the 'Create topic' form in the Amazon SNS console. The breadcrumb trail at the top reads 'Amazon SNS > Topics > Create topic'. The main heading is 'Create topic'. Under the 'Details' section, the 'Type' is set to 'Standard' (selected with a radio button). The 'FIFO (first-in, first-out)' option is also visible but unselected. The 'Name' field contains 'SNS\_Demo'. Below the name field, a note states: 'Maximum 256 characters. Can include alphanumeric characters, hyphens (-) and underscores (\_).' The 'Display name - optional' field contains 'Test Topic'. A note below this field states: 'To use this topic with SMS subscriptions, enter a display name. Only the first 10 characters are displayed in an SMS message.' There is an 'Info' link next to this note.

Cancel

Create topic

Our SNS topic has been successfully created as shown below

Topic SNS\_Demo created successfully.  
You can create subscriptions and send messages to them from this topic.

Publish message

Amazon SNS > Topics > SNS\_Demo

SNS\_Demo

EditDeletePublish message

Details

Name

SNS\_Demo

ARN

arn:aws:sns:ap-south-1:045403988195:SNS\_Demo

Type

Standard

Display name

Test Topic

Topic owner

045403988195

4: Click on **Create Subscription**.

SNS\_Demo

EditDeletePublish message

Details

Name

SNS\_Demo

ARN

arn:aws:sns:ap-south-1:045403988195:SNS\_Demo

Type

Standard

Display name

Test Topic

Topic owner

045403988195

Subscriptions

Access policy

Delivery retry policy (HTTP/S)

Delivery status logging

Encryption

Tags

Subscriptions (0)

EditDeleteRequest confirmationConfirm subscription

Create subscription

5: Choose the protocol (**Email-JSON**), enter your e-mail address in the endpoint box and click on **Create subscription**.

The screenshot shows the 'Create subscription' page in the Amazon SNS console. The breadcrumb navigation at the top reads 'Amazon SNS > Subscriptions > Create subscription'. The main heading is 'Create subscription'. Under the 'Details' section, there are three fields: 'Topic ARN' with the value 'arn:aws:sns:ap-south-1:045403988195:SNS\_Demo', 'Protocol' set to 'Email-JSON', and 'Endpoint' with the email address 'narzari457@gmail.com'. A red rectangle highlights the endpoint field. Below the fields is a blue information bar stating 'After your subscription is created, you must confirm it.' with a link to 'Info'. At the bottom right, there are 'Cancel' and 'Create subscription' buttons.

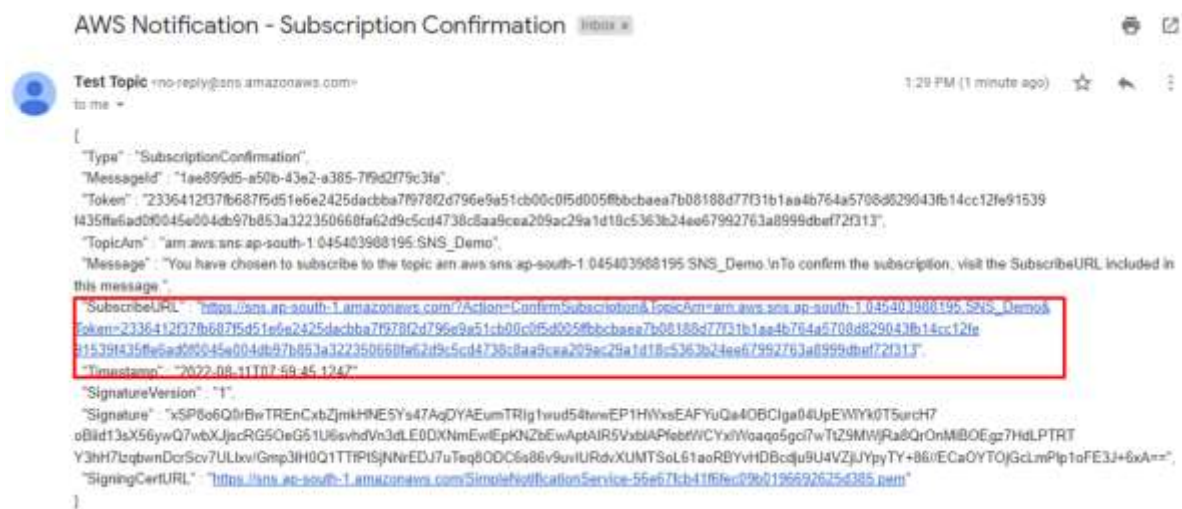
Our subscription has been created successfully as shown below

This screenshot shows the Amazon SNS console after a subscription has been created. On the left is a sidebar with navigation links: 'Dashboard', 'Topics', 'Subscriptions' (highlighted), 'Mobile', 'Push notifications', 'Text messaging (SMS)', and 'Origination numbers'. The main area features a green success message: 'Subscription to SNS\_Demo created successfully. The ARN of the subscription is arn:aws:sns:ap-south-1:045403988195:SNS\_Demo:0a93a3a6-4574-440c-ace3-1ecbf37c5af'. Below this, the breadcrumb navigation is 'Amazon SNS > Topics > SNS\_Demo > Subscription: 0a93a3a6-4574-440c-ace3-1ecbf37c5af'. The title of the page is 'Subscription: 0a93a3a6-4574-440c-ace3-1ecbf37c5af' with 'Edit' and 'Delete' buttons. Under the 'Details' section, a table lists the subscription's attributes:

ARN	Status
arn:aws:sns:ap-south-1:045403988195:SNS_Demo:0a93a3a6-4574-440c-ace3-1ecbf37c5af	Pending confirmation
	Protocol



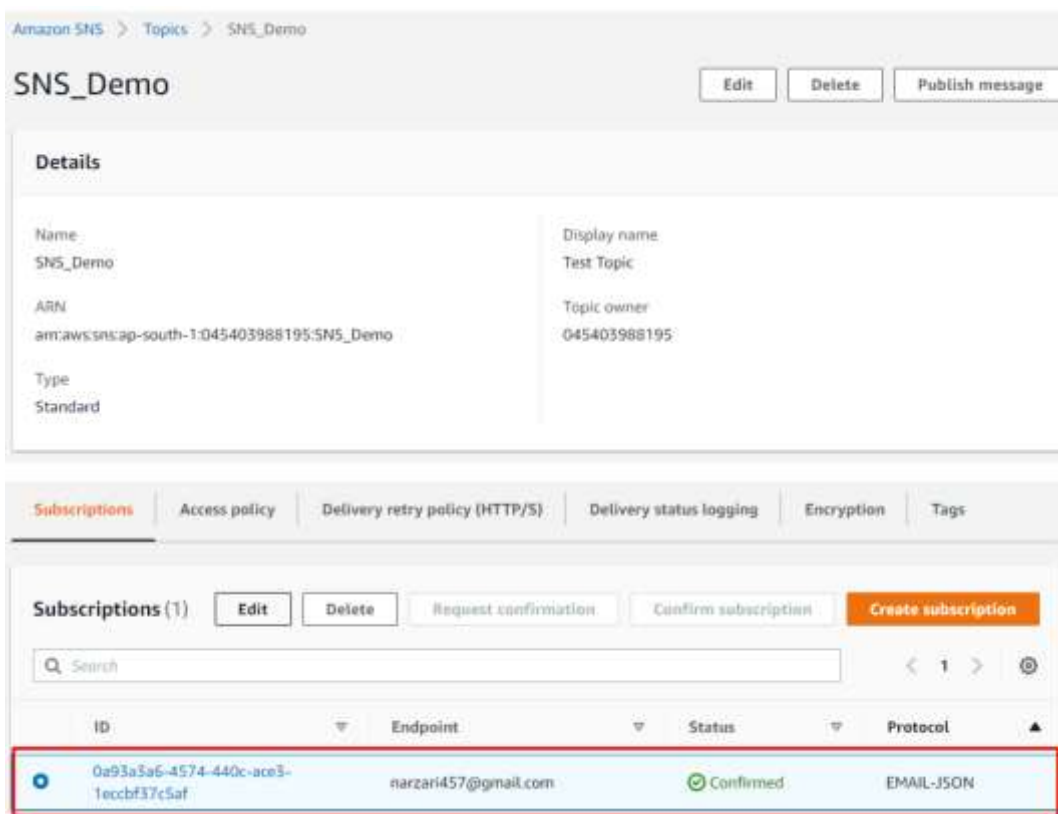
6: When you receive a verification e-mail, click on the **Subscription URL** to confirm the subscription.



This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<?xml version="1.0"?>
<ConfirmSubscriptionResponse xmlns="http://sns.amazonaws.com/doc/2010-03-31/">
  <ConfirmSubscriptionResult>
    <SubscriptionArn>arn:aws:sns:ap-south-1:045403988195:SNS_Demo:0a93a3a6-4574-440c-ace3-1ecbf37c5af</SubscriptionArn>
  </ConfirmSubscriptionResult>
  <ResponseMetadata>
    <RequestId>570e9358-1fdf-5353-ba3d-c836e61ba25c</RequestId>
  </ResponseMetadata>
</ConfirmSubscriptionResponse>
```

7: Move back to the AWS Console and select the topic that you just created. You will find a **Subscription ID**. Now, publish the data by clicking on **Publish message**.



Amazon SNS > Topics > SNS\_Demo

## SNS\_Demo

Edit Delete **Publish message**

### Details

Name	SNS_Demo	Display name	Test Topic
ARN	arn:aws:sns:ap-south-1:045403988195:SNS_Demo	Topic owner	045403988195
Type	Standard		

8: Enter the subject, type the message, and click on **Publish message**.

Amazon SNS > Topics > SNS\_Demo > Publish message

## Publish message to topic

### Message details

Topic ARN  
arn:aws:sns:ap-south-1:045403988195:SNS\_Demo

Subject - optional

Simple Mail

Maximum 100 printable ASCII characters

Time to Live (TTL) - optional  
This setting applies only to mobile application endpoints. The number of seconds that the push notification service has to deliver the message to the endpoint. [Info](#)

### Message body

Message structure

☒ Identical payload for all delivery protocols.  
The same payload is sent to endpoints subscribed to the topic, regardless of their delivery protocol.

☐ Custom payload for each delivery protocol.  
Different payloads are sent to endpoints subscribed to the topic, based on their delivery protocol.

Message body to send to the endpoint

1 welcome to Edureka

### Message attributes


Message attributes let you provide structured metadata items (such as timestamps, geographic data, signatures, and identifiers) for the message. [Info](#)

Type	Name	Value	
Select attribute type ▼	Enter attribute name	url or ["url1", "url2"]	Remove

Add another attribute

Cancel **Publish message**

Our Message has been published successfully

 **Message published to topic SNS\_Demo successfully.**  
Message "ID": 589f87b8-a7d6-5775-b2a4-dcd61d18d945  
Request "ID": a07586bf-858f-53a5-bf9c-ddd13f412d95

Publish another message

Amazon SNS > Topics > SNS\_Demo

## SNS\_Demo

EditDeletePublish message

### Details

Name	SNS_Demo	Display name	Test Topic
ARN	arn:aws:sns:ap-south-1:045403988195:SNS_Demo	Topic owner	045403988195
Type	Standard		

9: Check your mailbox.

*Note: You will receive a mail whenever some data is published.*

Simple Mail import

 **Test Topic** <no-reply@sns.amazonaws.com>  
to me

1:36 PM (0 minutes ago) ☆ ↶ ⋮

```
{
  "Type": "Notification",
  "MessageId": "589f87b8-a7d6-5775-b2a4-dcd61d18d945",
  "TopicArn": "arn:aws:sns:ap-south-1:045403988195:SNS_Demo",
  "Subject": "Simple Mail",
  "Message": "Welcome to Edureka",
  "Timestamp": "2022-08-11T08:06:38.946Z",
  "SignatureVersion": "1",
  "Signature": "JbWUJaaTvPmN5qIbAOTDh4TCh7Tjn5PIF9RP6QJ7cz0Q/vhKov+393pPi48sgfbx3189elpOaszDfthHMXDvaWqiclaghJARnYBwA61VN1A7yXb970F
f5gZ55aZrwiurmpP/in9Z0CucZ0tWwFfTFHhBYSC1urG1PAW/pX3HBX7iJgFdKJNIAAO/BV/ZkHGggSY1dvaXcurcJ/CGBcThks5NkX2fzF49BJ6zQZebf
kuYSoFKHk3Ml0zDZq8yIFUpAsSu20EUZ7P7gpbpy0zqipl8nNqOsgJdOcpbEKJBj3cze2yGY9VuubAP8+wlVlp1lcQ4T0f1Ujdwysg==",
  "SigningCertURL": "https://sns.ap-south-1.amazonaws.com/SimpleNotificationService-55e67fcb41f5fc029b0136692625d385.pem",
  "UnsubscribeURL": "https://sns.ap-south-1.amazonaws.com/?Action=Unsubscribe&SubscriptionArn=arn:aws:sns:ap-south-1:045403988195:SNS_Demo:0a53a3a6-4574-
440c-ace3-14cceb37c5af"
}
```