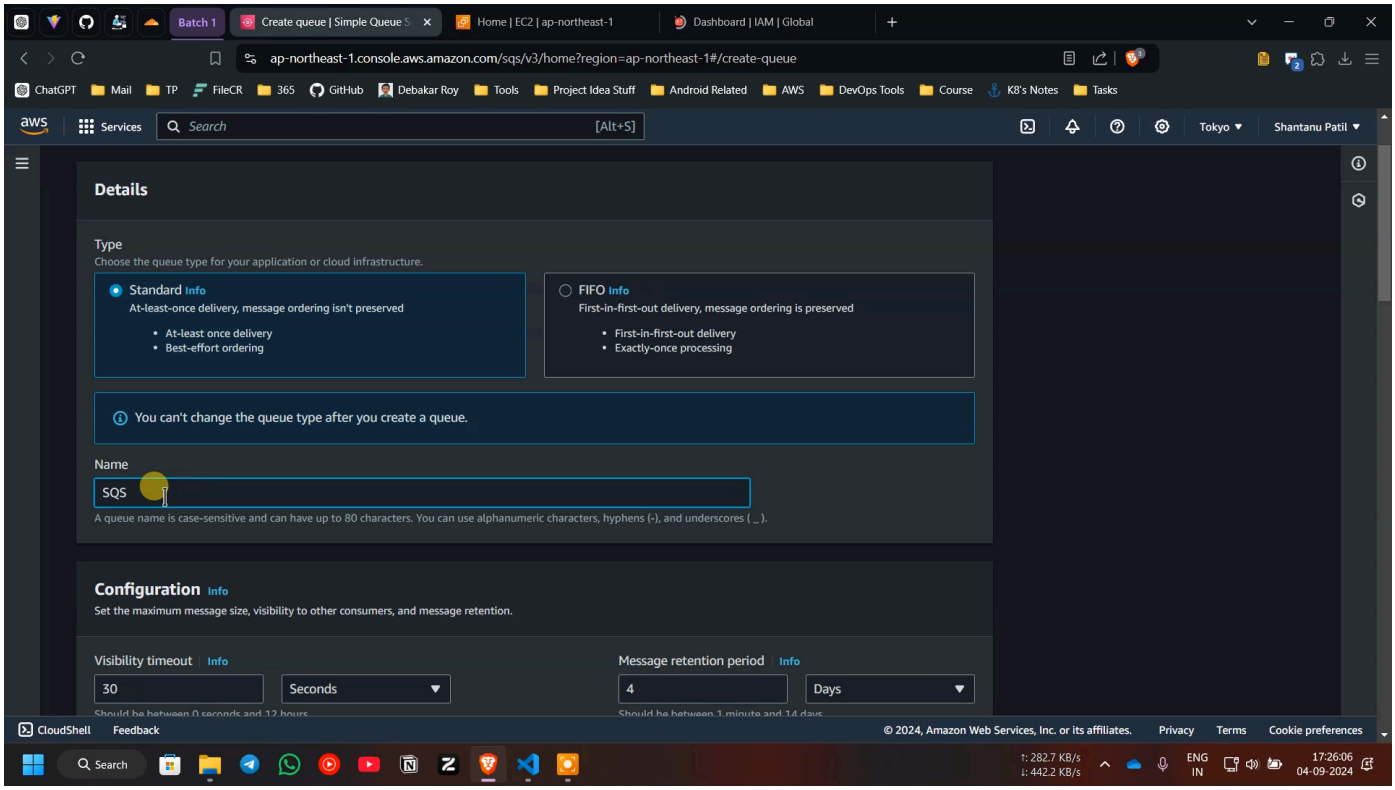
Lab 3 SQS

For a visual guide on this process, you can watch the video here.

1. Create an SQS Queue

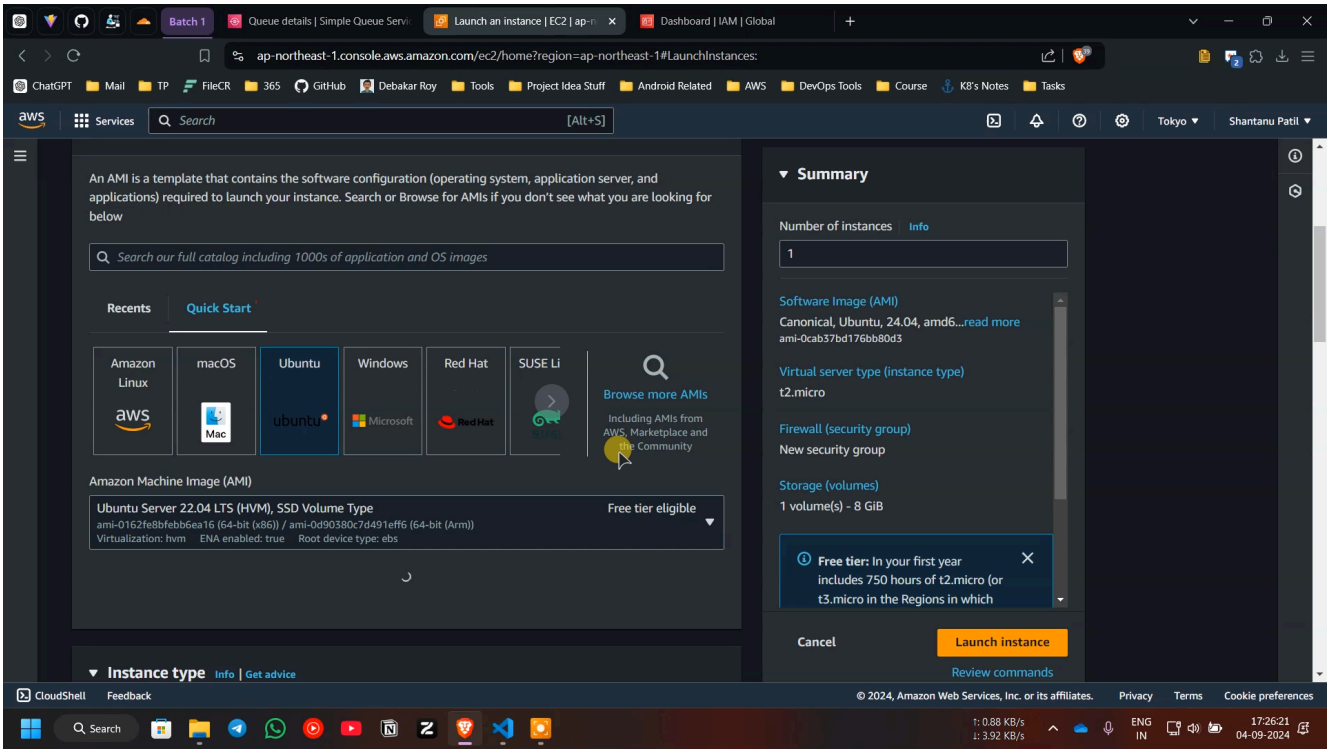
1. Open the AWS Console, search for SQS, and click on Simple Queue Service (SQS).
2. Click on **Create Queue**.
3. Give a name to your queue.



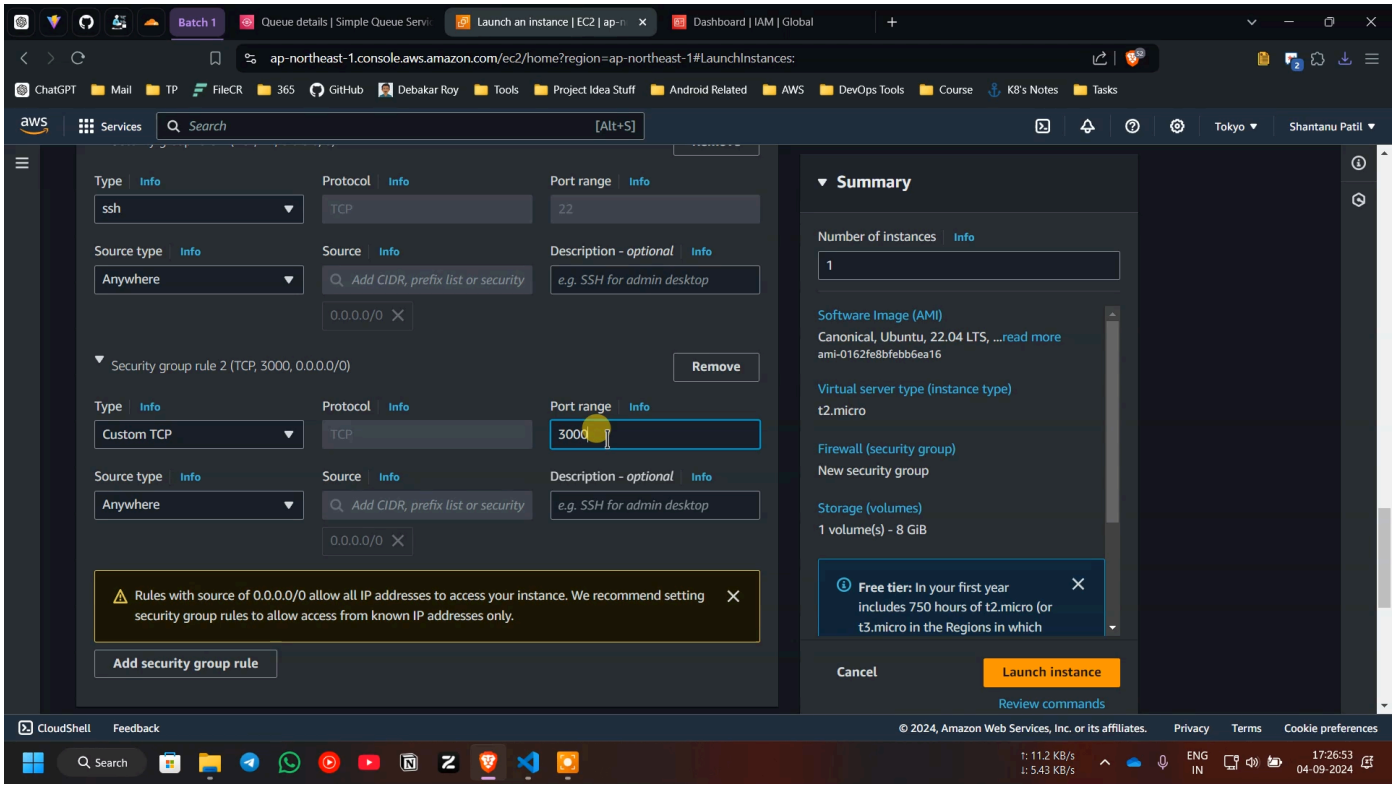
4. Scroll down and click **Create Queue**.

2. Launch an EC2 Instance

1. Search for EC2 and click on **Launch Instance**.
2. Give a name to your EC2 instance.
    - For AMI, select Ubuntu, and in the dropdown, select Ubuntu 22.04.



3. Create a key pair and save it.
4. In the Network section, click on **Edit** and select **Auto-assign IP**. Enable it and click **Add**.
5. Click on **Add Security Group Rule** in the Inbound Security Group Rules subsection of network settings.

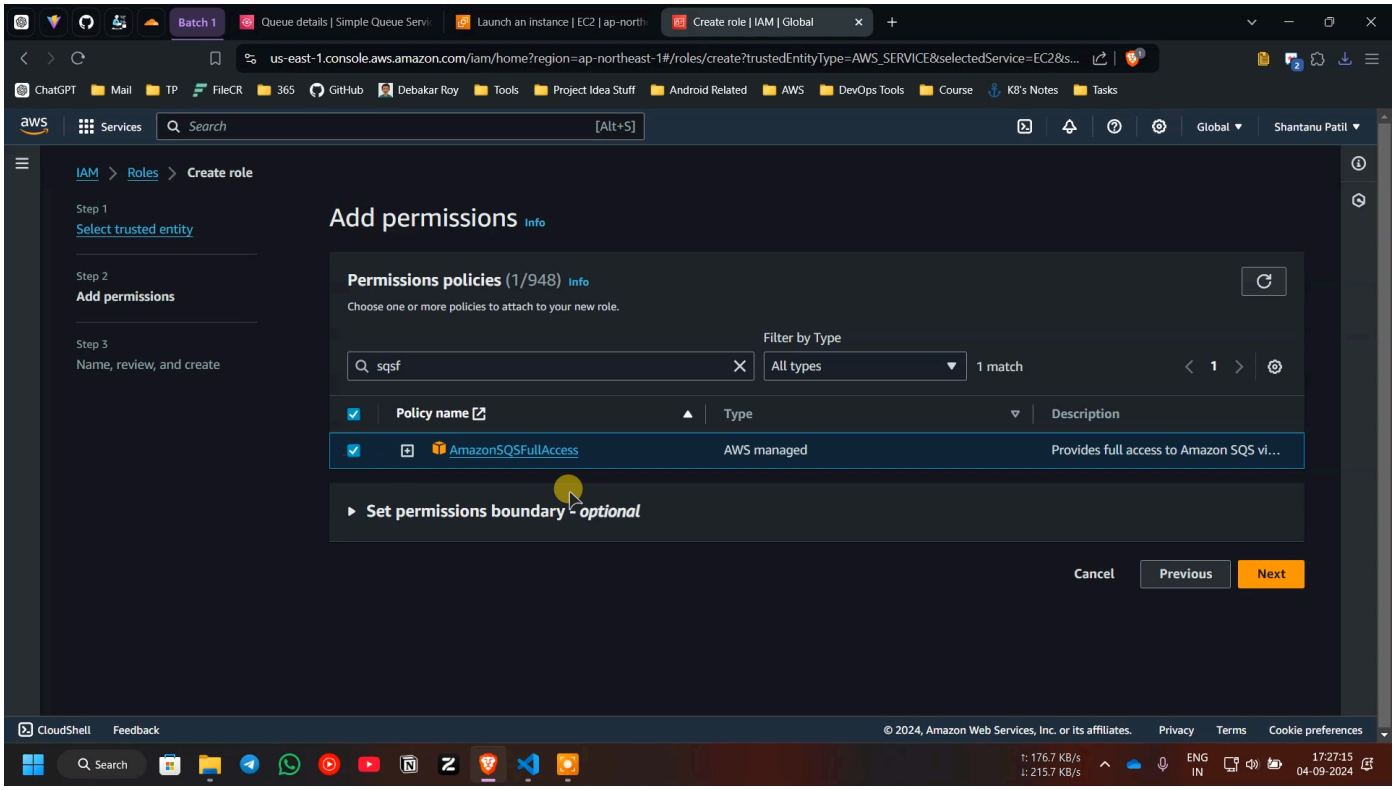


6. Click on **Launch Instance**.

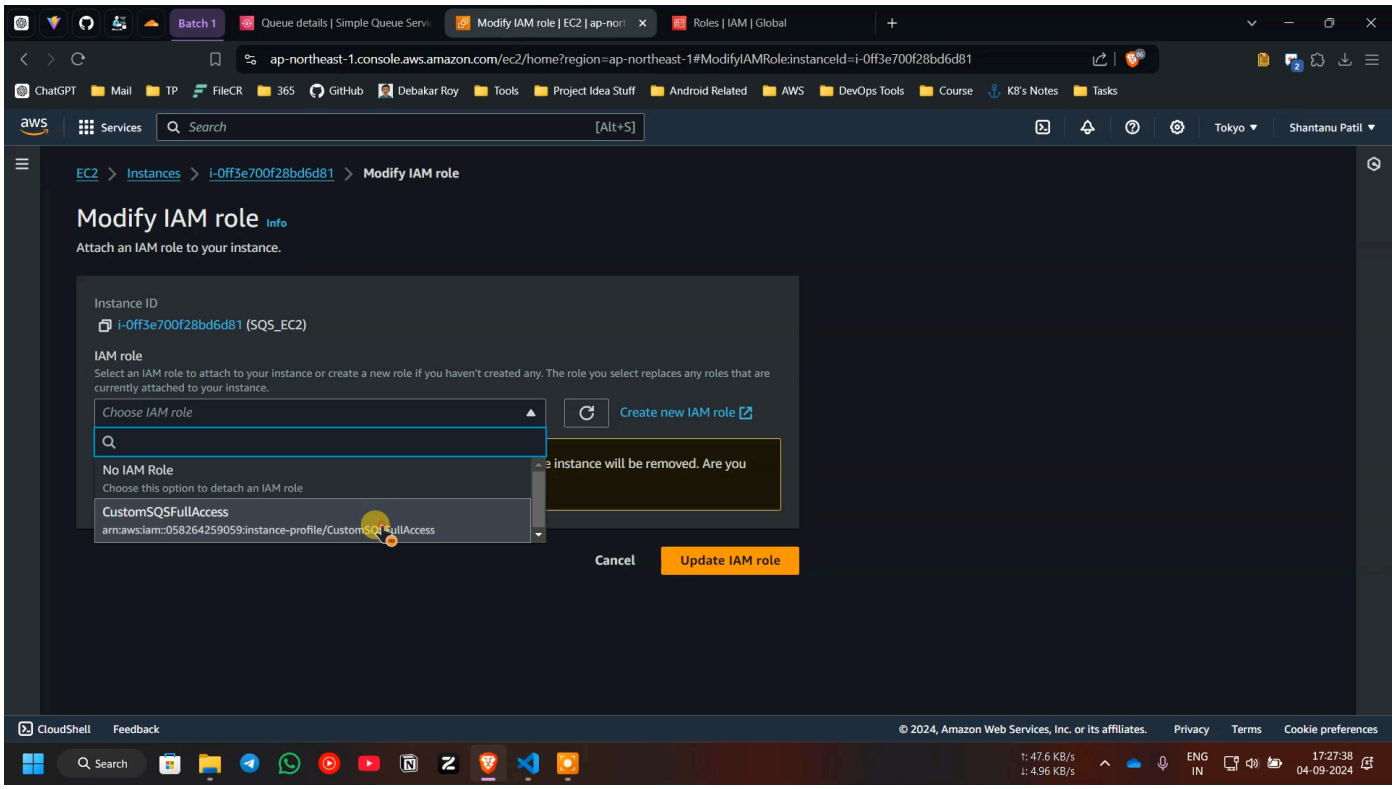
3. Create an IAM Role

1. Search for IAM (Identity Access Management).

2. In IAM, on the left-side panel, click on **Roles**.
3. Click on **Create Role**.
4. In the **Select trusted entity** section, choose **AWS Service** and select **EC2** in the use case.
5. Click **Next**, then search for the `sqsfullaccess` policy and select it.



6. Click **Next**, give a name to the role, and click **Create Role**.
7. After creating the role successfully, navigate back to your previously created EC2 instance.
8. Click on **Actions**, select **Security**, then **Modify IAM Role**.
9. Select the role you just created.



10. Click **Update IAM Role**.

4. Connect to the EC2 Instance

Connect to your EC2 instance using SSH.

5. Update and Set Up the EC2 Instance

5.1. Update and Upgrade Your Machine, and Install Node.js and npm

After connecting to your EC2 instance, run the following commands:

```
sudo apt update && sudo apt upgrade -y && sudo apt install nodejs -y && sudo apt install npm -y
```

5.2. Create `app.js` and Add Content

1. Create the `app.js` file:

   ```
   nano ~/app.js
   ```

2. Copy and paste the following content into `app.js`. Replace the placeholder SQS URL with your actual SQS queue URL:

```
const express = require('express');
const AWS = require('aws-sdk');
const bodyParser = require('body-parser');
const ejs = require('ejs');
const path = require('path');

const app = express();
const port = 3000;

// Configure AWS SDK to use IAM role credentials automatically
AWS.config.update({ region: 'ap-south-1' }); // Replace with your desired AWS region

// Create SQS service object
const sqs = new AWS.SQS({ apiVersion: '2012-11-05' });

// Body parser middleware
app.use(bodyParser.urlencoded({ extended: true }));

// Set EJS as the view engine and set the views directory
app.set('view engine', 'ejs');
app.set('views', path.join(__dirname, 'views'));

// Serve index.html
app.get('/', (req, res) => {
  res.sendFile(path.join(__dirname, 'index.html'));
});

// Serve send.html
app.get('/send', (req, res) => {
  res.sendFile(path.join(__dirname, 'send.html'));
});

// Send message to SQS
app.post('/send', (req, res) => {
  const { message } = req.body;

  const params = {
    MessageBody: message,
    QueueUrl: 'https://sqs.ap-south-1.amazonaws.com/123123123/yourqueue', // Replace with y
  };

  sqs.sendMessage(params, (err, data) => {
    if (err) {
```

```
      console.error('Error sending message to SQS:', err);
      res.status(500).send('Error sending message to SQS');
    } else {
      console.log('Message sent to SQS:', data.MessageId);
      res.redirect('/');
    }
  });
});

// Serve messages.ejs
app.get('/messages', (req, res) => {
  const params = {
    QueueUrl: 'https://sqs.ap-south-1.amazonaws.com/123123123/yourqueue', // Replace with y
    AttributeNames: ['All'],
    MaxNumberOfMessages: 10, // Adjust as needed
    WaitTimeSeconds: 0,
  };

  sqs.receiveMessage(params, (err, data) => {
    if (err) {
      console.error('Error receiving messages from SQS:', err);
      res.status(500).send('Error receiving messages from SQS');
    } else {
      const messages = data.Messages || [];
      res.render('messages', { messages });
    }
  });
});

// Listen on port
app.listen(port, () => {
  console.log(`Server is running at http://localhost:${port}`);
});
```

3. Save and close the file:
   - Press `Ctrl + O` to save the file.
   - Press `Enter` to confirm.
   - Press `Ctrl + X` to exit the editor.

5.3. Create `index.html` and Add Content

1. Create the `index.html` file:

```
nano ~/index.html
```

2. Copy and paste the following content into `index.html`:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>SQS Example</title>
</head>
<body>
  <h1>Home Page</h1>
  <p>Welcome to the home page!</p>
  <a href="/send">Go to Send Page</a>
  <br>
  <a href="/messages">View Messages</a>
</body>
</html>
```

3. Save and close the file:
   - Press `Ctrl + O` to save the file.
   - Press `Enter` to confirm.
   - Press `Ctrl + X` to exit the editor.

5.4. Create `send.html` and Add Content

1. Create the `send.html` file:

```
nano ~/send.html
```

2. Copy and paste the following content into `send.html`:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>SQS Example</title>
</head>
<body>
  <h1>Send Message</h1>
  <form action="/send" method="post">
    <label for="message">Message:</label>
    <input type="text" id="message" name="message" required>
    <button type="submit">Send</button>
  </form>
  <br>
  <a href="/">Go to Home Page</a>
</body>
</html>
```

3. Save and close the file:
   - Press `Ctrl + O` to save the file.
   - Press `Enter` to confirm.
   - Press `Ctrl + X` to exit the editor.

5.5. Create the `views` Directory and `messages.ejs` File

1. Create the `views` directory and the `messages.ejs` file inside the `views` directory:

```
mkdir ~/views && nano ~/views/messages.ejs
```

2. Copy and paste the following content into `messages.ejs` :

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>SQS Example</title>
</head>
<body>
  <h1>Messages from SQS Queue</h1>
  <ul>
    <% messages.forEach(message => { %>
      <li><%= message.Body %></li>
    <% }); %>
  </ul>
  <br>
  <a href="/">Go to Home Page</a>
</body>
</html>
```

3. Save and close the file:
   - Press `Ctrl + O` to save the file.
   - Press `Enter` to confirm.
   - Press `Ctrl + X` to exit the editor.

5.6. Install Required Packages

Install the necessary Node.js packages:

```
npm install express aws-sdk body-parser ejs
```

5.7. Start the Application

Start the application using Node.js:

```
node ~/app.js
```

Your application should now be running at http://your-ec2-public-ip:3000.