Take Home Assignment

This project is a simple web application developed as part of the take-home assignment for the junior software engineer position. The application is built using React.js for the frontend and Django for the backend. It is deployed on AWS using S3, EC2, VPC, Subnets, CloudFront and IAM.

Demo Link:

https://drive.google.com/file/d/161daVAKOoihpB7cVjylH-ynNsxLj2SzT/view?usp=drive_link

GitHub Link:

https://github.com/Darshanum-27/TakeHomeAssignment

Tech Stack Used

Frontend: React.js

Backend: Django Framework

Cloud Provider: Amazon Web Services

Installation

1) Backend Setup (Django)

   Create a virtual environment:

   ```
   python -m venv env
   ```

   Activate the virtual environment:

   ```
   On Windows: env\Scripts\activate
   On macOS and Linux: source env/bin/activate
   ```

2) Install Django:

   ```
   pip install Django
   ```

3) Create a new Django project:

```
django-admin startproject backend
cd backend
```

4) Create a new Django app:

```
python manage.py startapp api
```

5) Add api to INSTALLED_APPS in backend/settings.py

```
Run migrations:
python manage.py migrate
```

6) Start the Django development server:

```
python manage.py runserver
```

Frontend Setup (React.js)

1) Create a new React app:

```
npx create-react-app frontend
cd frontend
```

2) Install additional dependencies:

```
npm install axios
```

3) Start the React development server:

```
npm start
```

Connecting Frontend and Backend

1) In your React components, use Axios to make API calls to your Django backend: javascriptCopyimport axios from 'axios';

```
// Example API call
axios.get('http://localhost:8000/api/endpoint')
  .then(response => {
    console.log(response.data);
  })
  .catch(error => {
    console.error('Error:', error);
  });
```

2) In your Django settings.py, add CORS settings to allow requests from the React frontend:

```
pythonCopyINSTALLED_APPS = [
    ...
    'corsheaders',
]

MIDDLEWARE = [
    'corsheaders.middleware.CorsMiddleware',
    ...
]

CORS_ALLOW_ALL_ORIGINS = True  # For development only
Note: Install django-cors-headers with pip install django-cors-headers
```

Running the Project

1) Start the Django server:

```
cd backend
python manage.py runserver
```

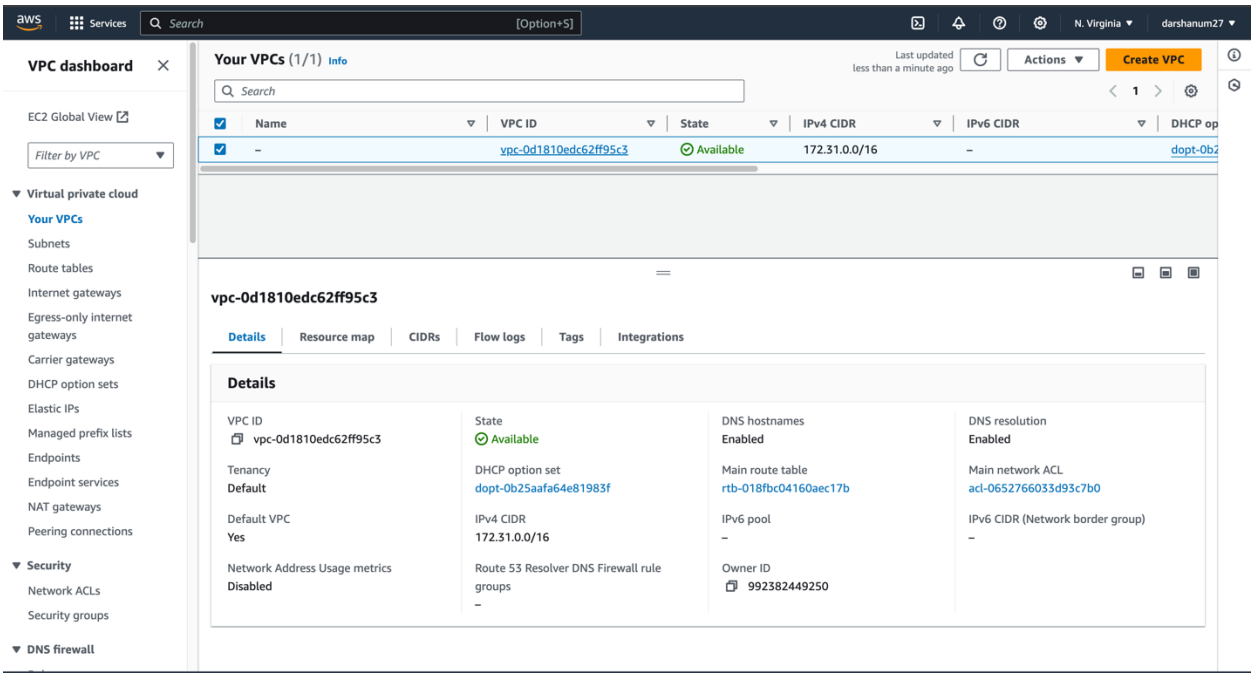
2) In a new terminal, start the React development server:

```
cd frontend
npm start
```

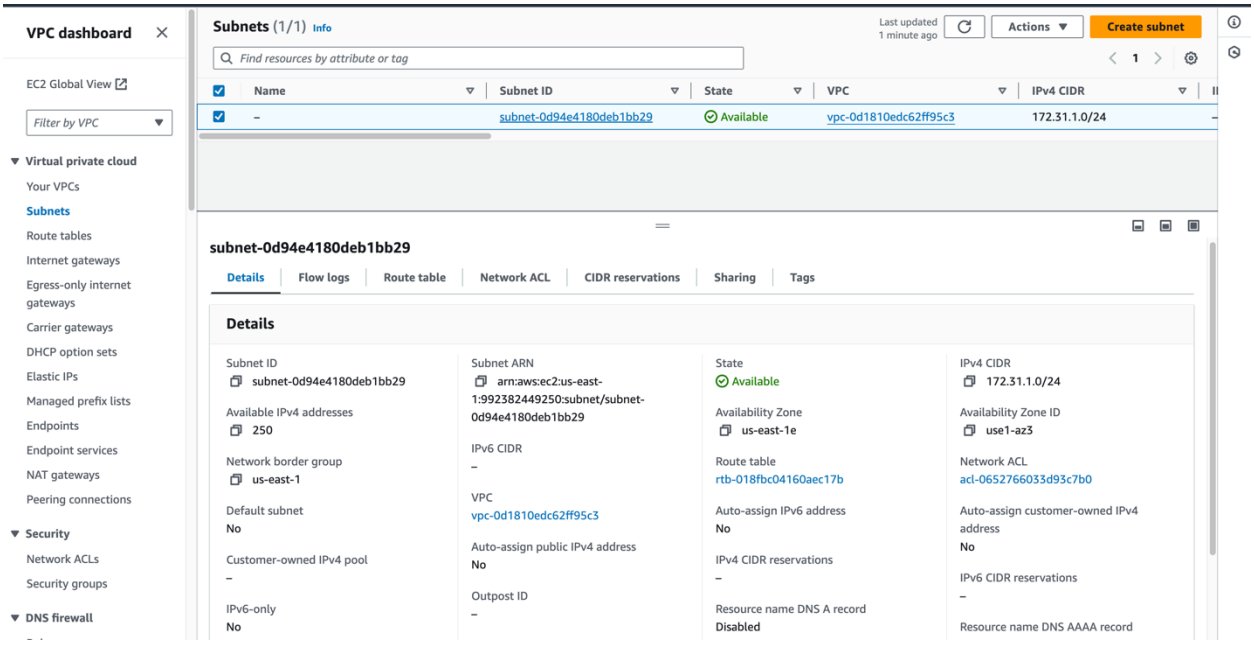
Your Django backend will be running on http://localhost:8000 and your React frontend on http://localhost:3000.

Output

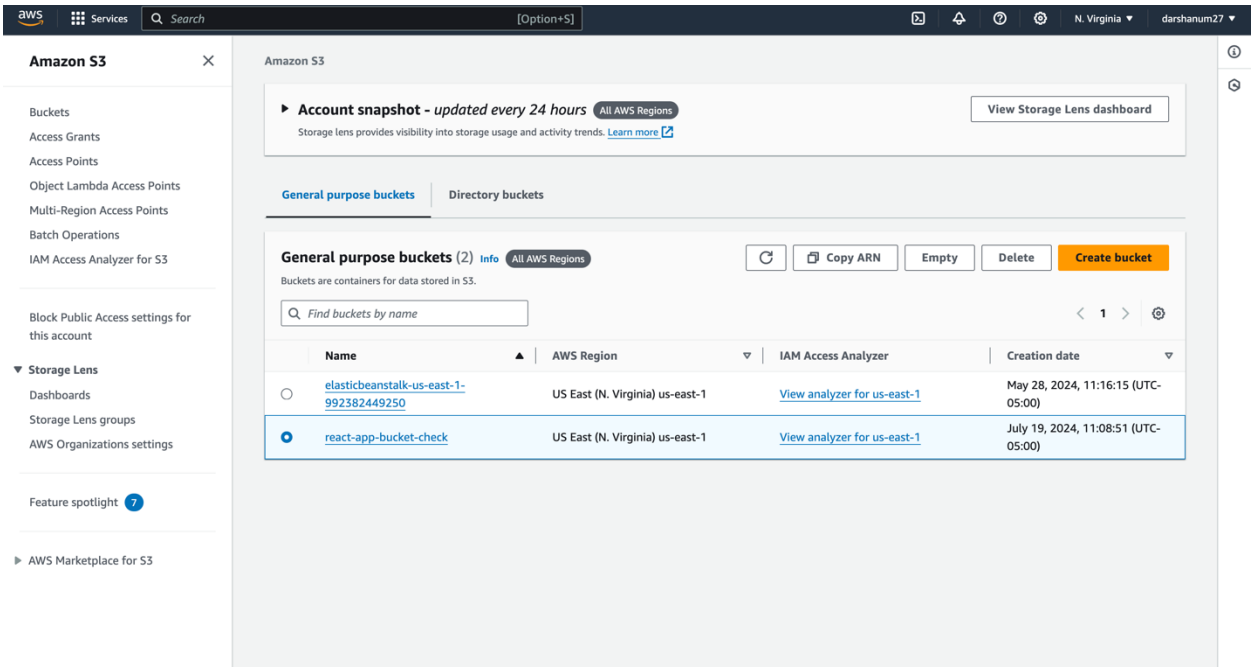
1) Virtual Private Cloud Screenshot



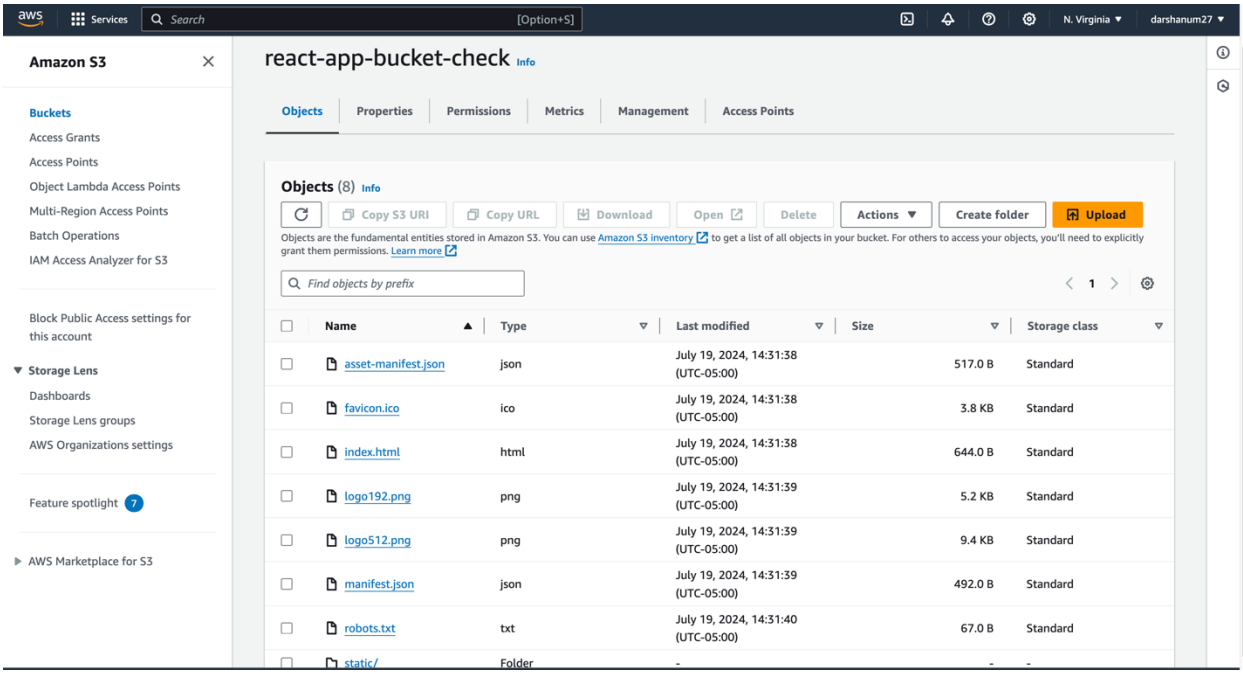
2) Subnet Screenshot:



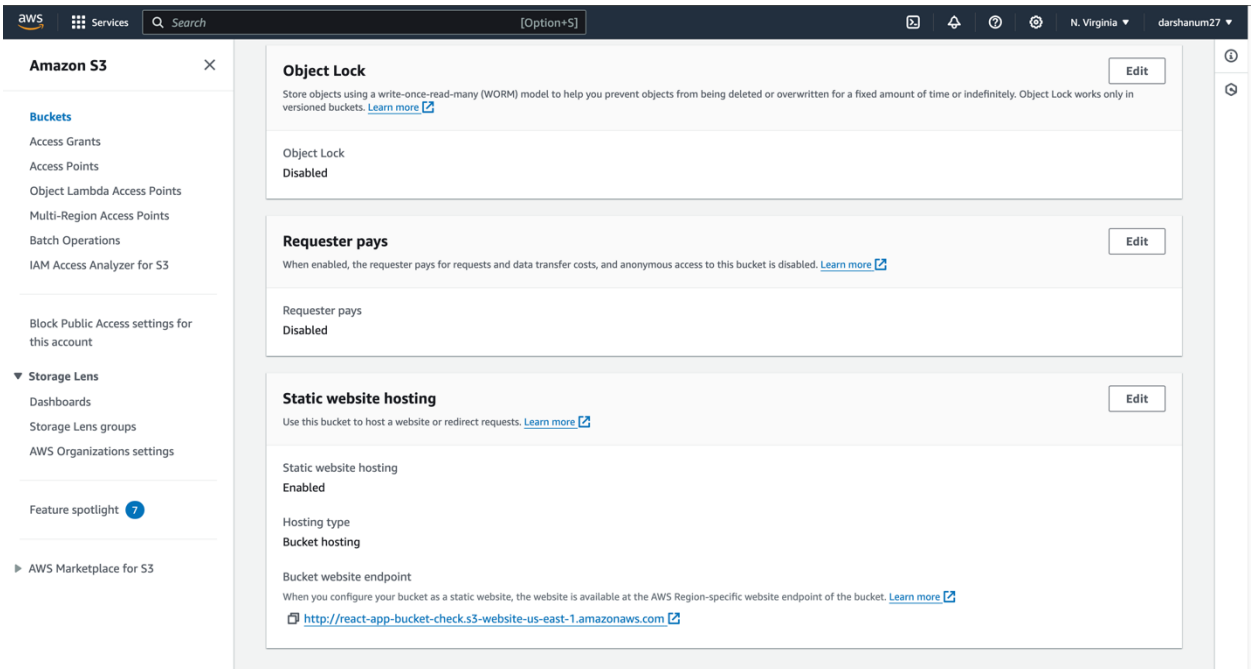
3) S3 Bucket creation Screenshot:



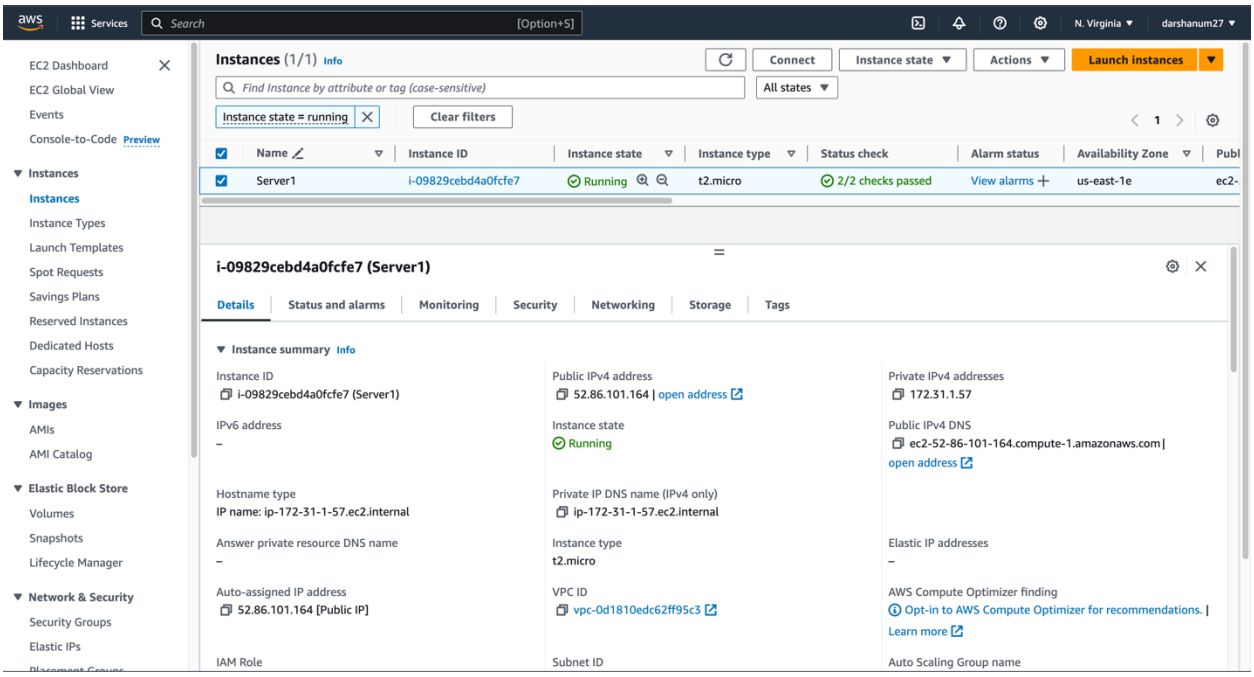
4) S3 Bucket React.js build files upload:



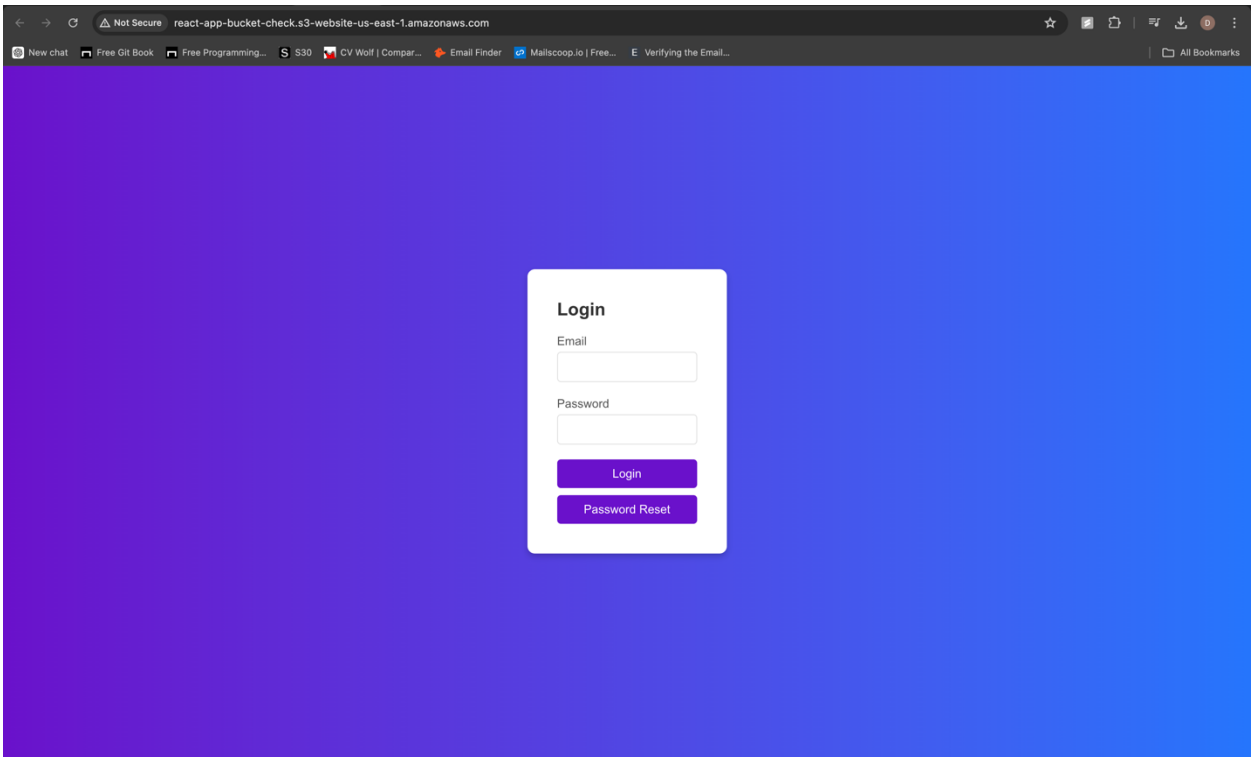
5) s3 Bucket static Link:



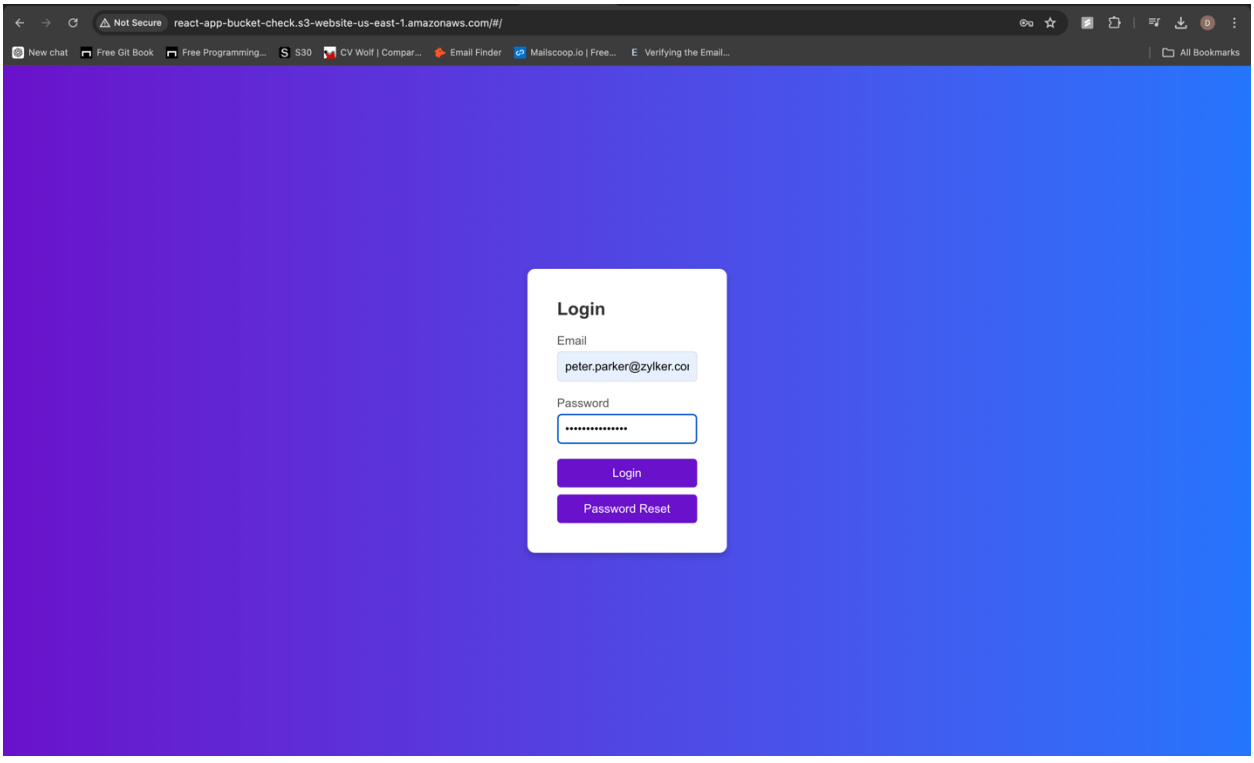
6) Ec2 instance running:



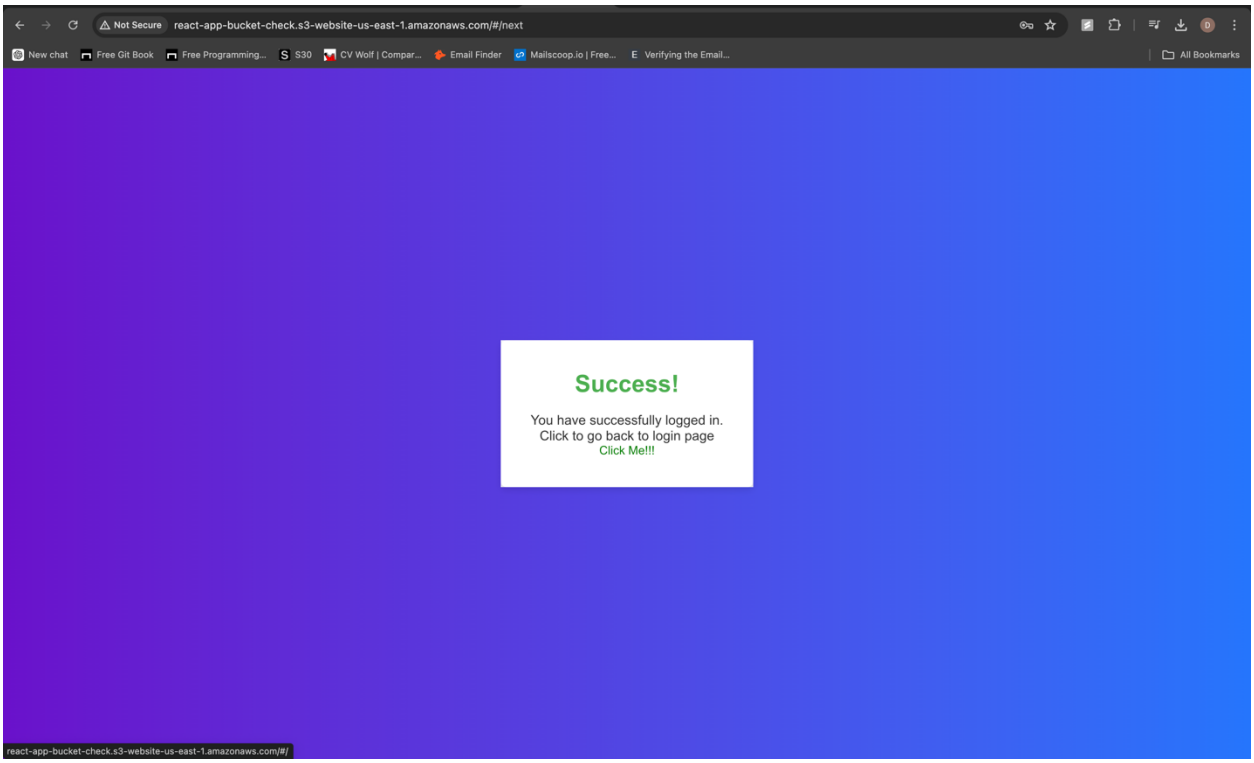
7) Landing Page:



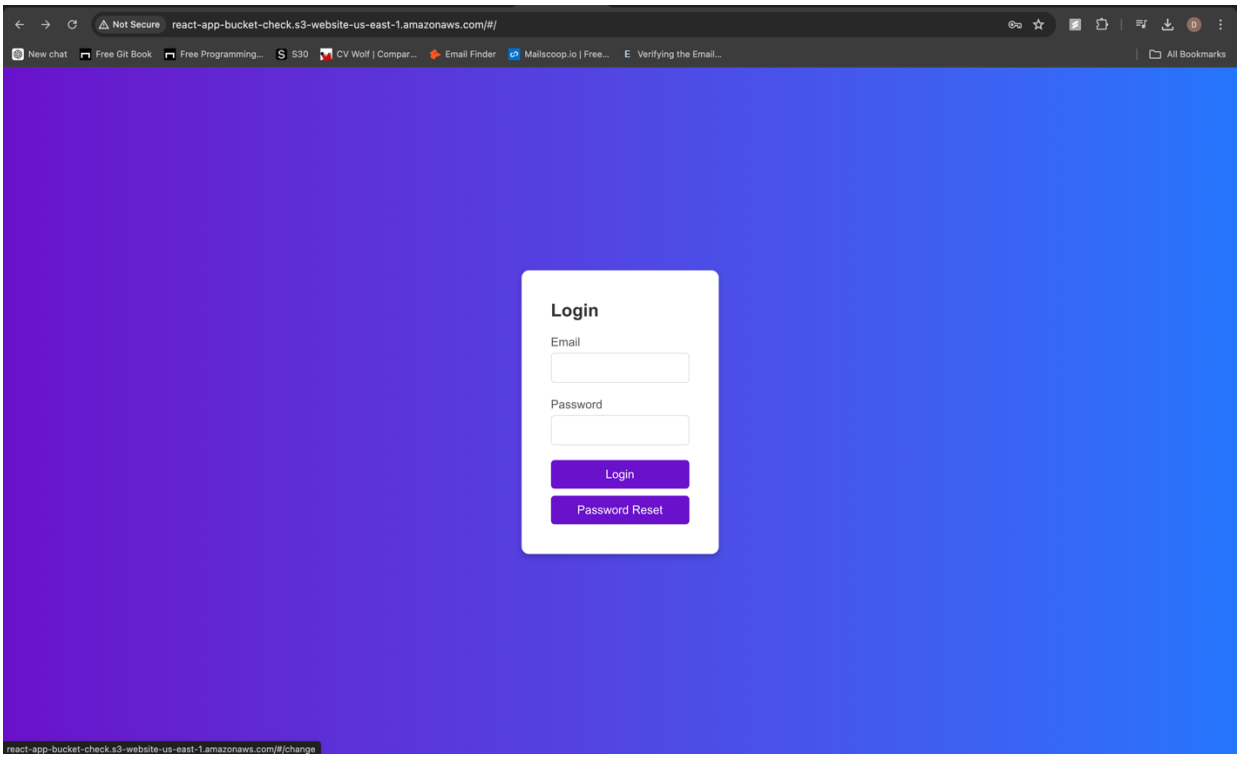
8) Default Value Enter:



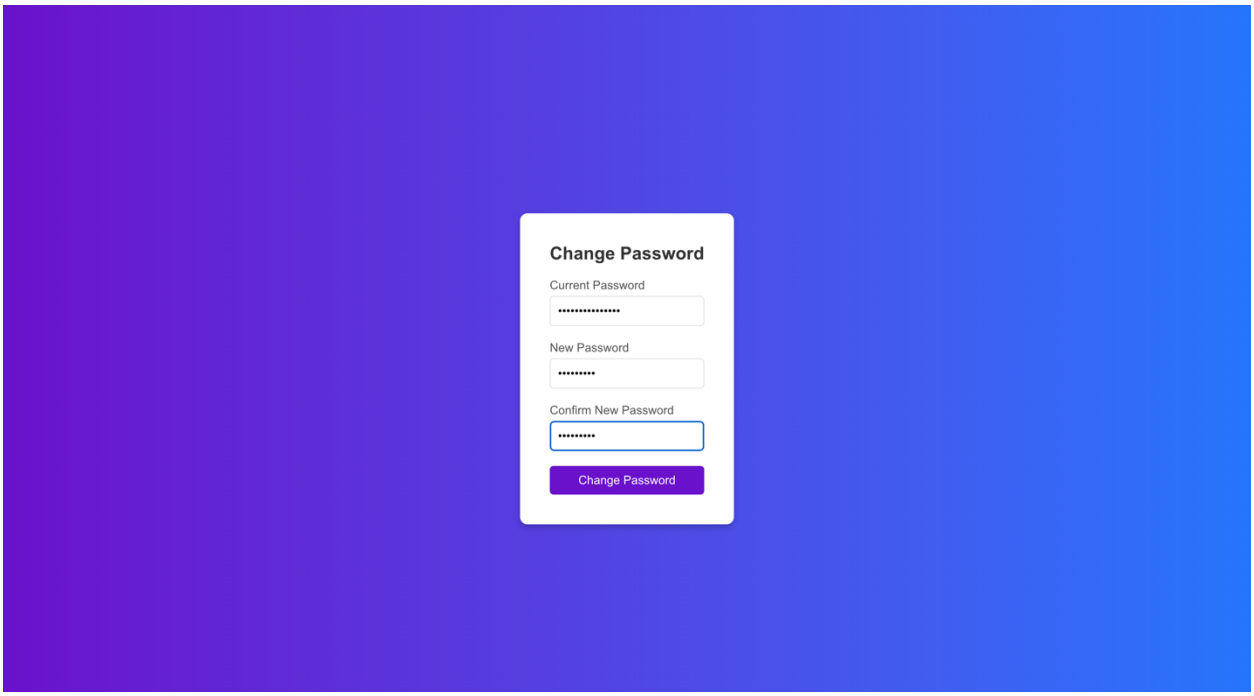
9) Login Successful:



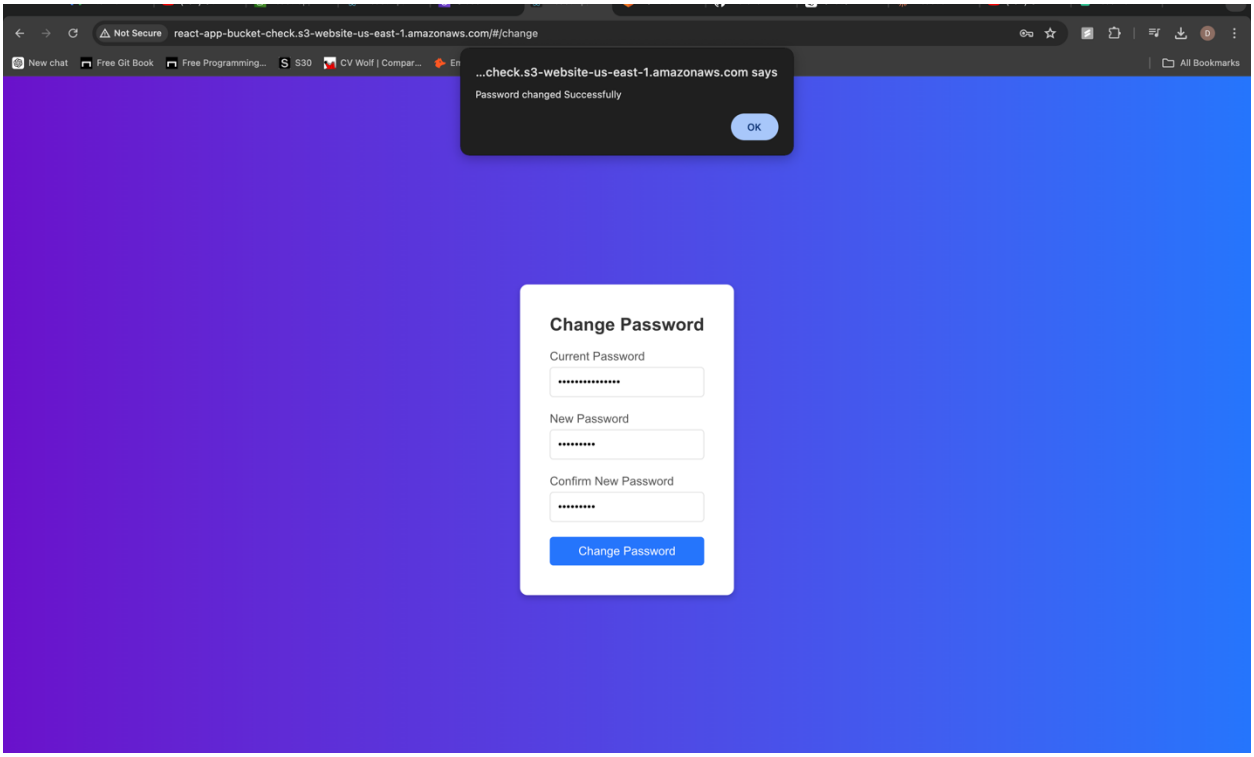
10) Back to Landing page from Login successful page:



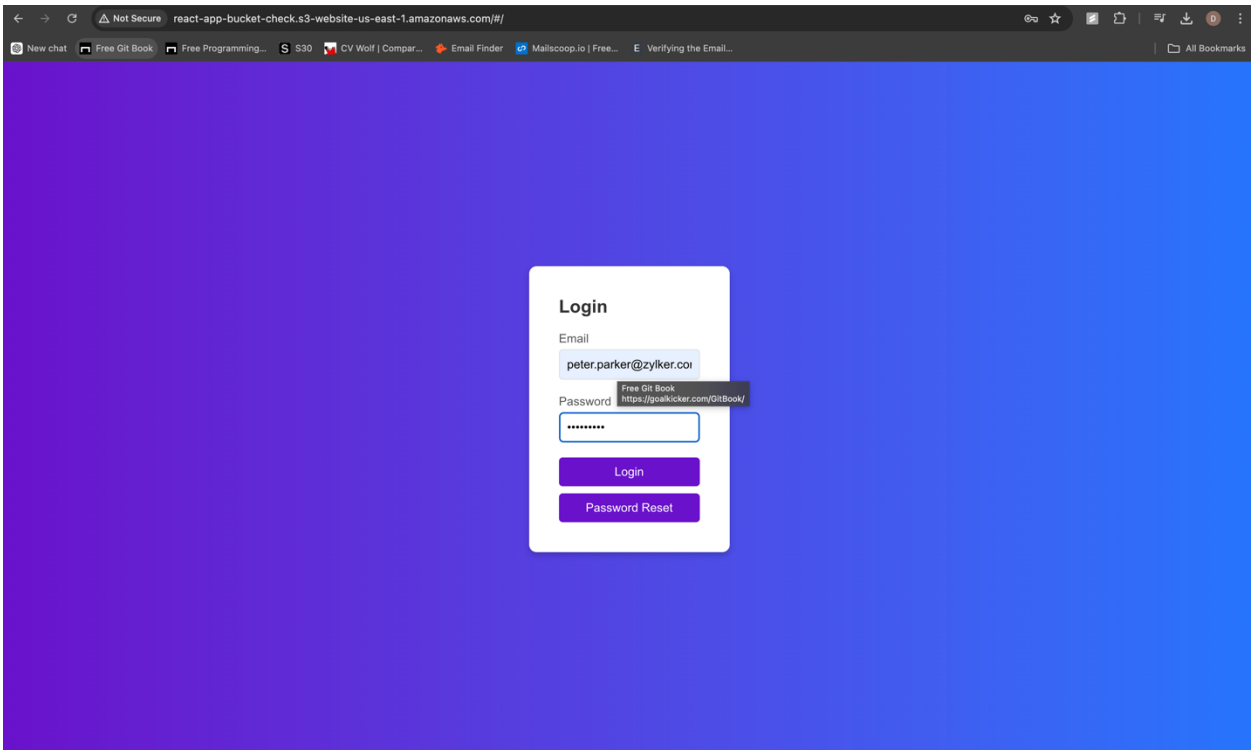
11) Change Default Password:



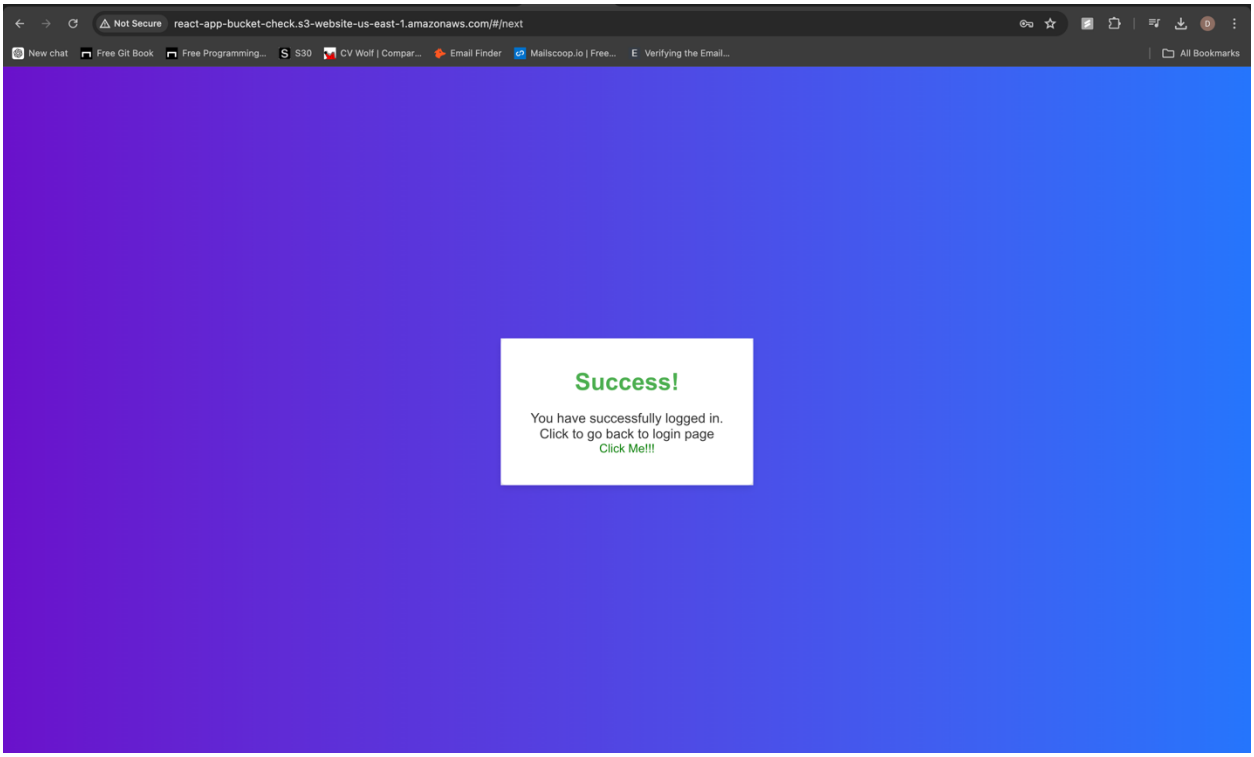
12) Default password changed to new password Successfully



13) Login with new Password:



14) Logged in Successfully:



15) Wrong Password Message: