# DevOps Assignment

You will need an AWS account to solve the assignment. You create and manage your AWS

resources in an AWS account. Please create an AWS Free Tier account if you do not have one already. You can use AWS Free tier resources and services so that you do not incur any cost to solve the assignment. For example, use t2.micro EC2 instance which is free of cost. You will be able to solve the assignment questions using a free tier account and resources.

[AWS Free Tier account](#)

[How do I create and activate a new AWS account?](#)

**Task 1: Develop and Secure a Docker-Compose Deployment**

- **Objective:** Create a Docker-Compose file to deploy a 3-tier open-source application of your choice. The application should have:
    - **Frontend:** Based on React.
    - **Backend:** Based on NodeJS.
    - **Database:** Any suitable database.
- **Requirements:**
    - Select any public GitHub repository that meets the above criteria.
    - Ensure that sensitive information (e.g., database passwords, API keys) is not hard-coded in the Docker-Compose file but passed securely at runtime.

**Task 2: Automate Deployment to AWS EC2 Using GitHub Actions**

- **Objective:** Deploy the Docker-Compose file created in Task 1 onto an AWS EC2 instance using GitHub Actions for continuous deployment.
- **Requirements:**
    - Configure GitHub Actions to automatically deploy the application to an EC2 instance whenever changes are pushed to the repository.
    - Ensure secure handling of deployment credentials and sensitive information within the GitHub Actions workflow.

**Deliverables:**

1. Docker-Compose file for the 3-tier application.
2. GitHub Actions workflow file for deploying the application to an EC2 instance.
3. Documentation of the setup.