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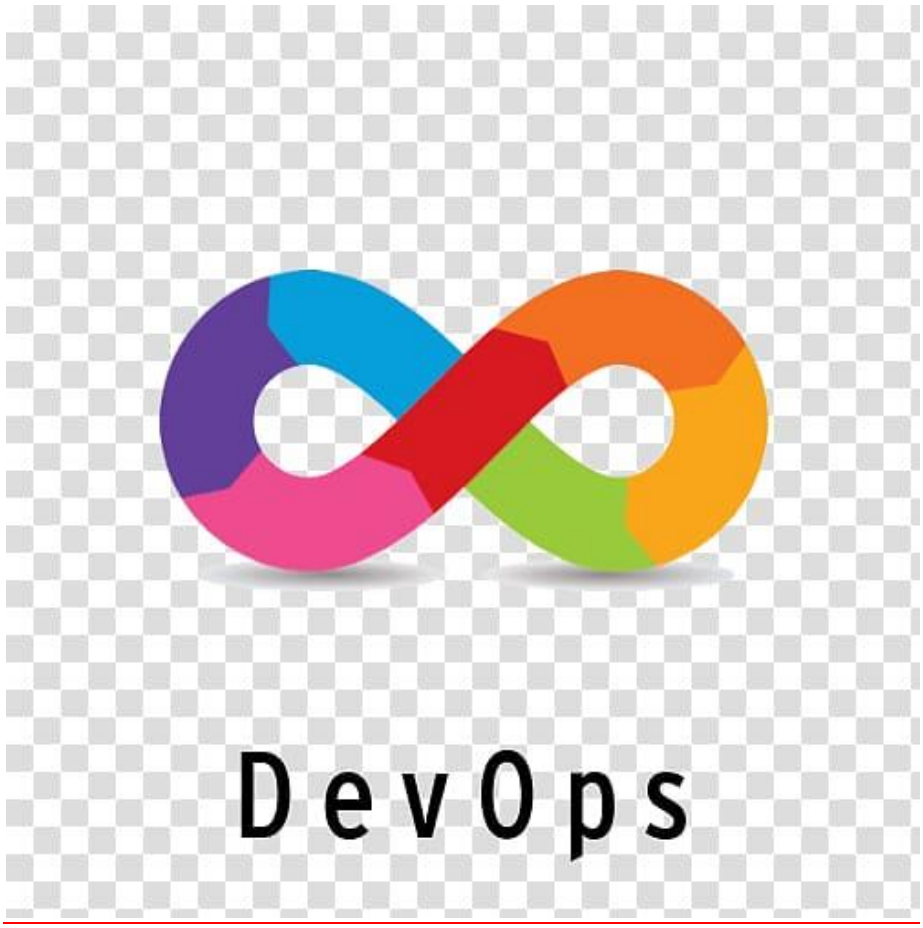
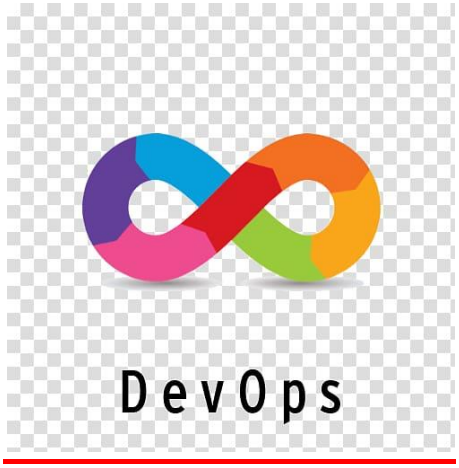
DevOps Engineer Diploma



DevOps Engineer Diploma



Jenkins Labs

Lab 10

Jenkins Pipeline for Automating Node.js Docker Build and Deployment

Lab Objectives

- **Creating and Configuring Jenkins Pipelines**
- **Integrating Jenkins with GitHub Repositories**
- **Building Docker Images Automatically via Jenkins**
- **Running Containers from Built Docker Images**
- **Automating Continuous Integration (CI) Workflows**
- **Verifying Successful Builds and Deployments in Jenkins**

You have a simple **Node.js** application hosted on **GitHub**. The repository contains only two files:

https://github.com/abdelrahmanonline4/sourcecode

- **app.js** – the Node.js source file
- **Dockerfile** – used to build the Docker image

Your task is to configure a **Jenkins Pipeline** that automates the build and deployment steps for this Dockerized app.

Pre-Requirements:

- **Jenkins** is already installed and running
- **Docker** is installed on the same host as Jenkins
- **Git plugin** and **Docker Pipeline plugin** are installed in Jenkins
- Public **GitHub repository URL** for the app

Lab Tasks:

Task 1: Create a New Jenkins Pipeline

- Open **Jenkins dashboard**
- Create a new item named **nodejs-docker-pipeline**
- Select **Pipeline** type and click **OK**
- Under **Pipeline → Definition**, choose **"Pipeline script from SCM"** or **Pipeline** if you don't want SCM
- Set **SCM** to **Git**
- Add your **GitHub repository URL**

Task 2: Create a Jenkinsfile

Inside your GitHub repository, create a file named **Jenkinsfile**. The file should define a pipeline with at least three stages:

1. **Checkout** – to pull the source code from **GitHub**
2. **Build Docker Image** – to build a Docker image from the **Dockerfile**
3. **Run Container** – to start a container from the newly built image

Verify:

- Ensure that all stages complete successfully
- Confirm that the **Docker container** is running on **port 3000**
- **Document your results** with screenshots of the output

```
+ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED              STATUS              PORTS                                       NAMES
3c069b118270   nodeapp:latest   "docker-entrypoint.s…"   Less than a second ago   Up Less than a second   0.0.0.0:3000->3000/tcp, [::]:3000->3000/tcp   nodeapp
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

You are Welcome