

# **Docker Contents**

## **Day 1:**

- 1.) What is Docker
- 2.) Why we use Docker
- 3.) Creating of Docker Hub Account
- 4.) Installing Docker Desktop on Windows and Mac OS
- 5.) Windows Professional Setup with Hyper-V
- 6.) Installing Windows Subsystem for Linux (WSL2)
- 7.) PowerShell into Linux bash
- 8.) Basic Docker Commands
- 9.) Intermediate Docker Commands

## **Day 2:**

- 1.) Building Custom Images through Docker Server
- 2.) Building a Docker File
- 3.) What is Base Image?
- 4.) Rebuilds with Cache
- 5.) Tagging an Image
- 6.) Manual Image Generation with Docker Commit

## **Making Real Projects with Docker:**

- 7.) Node Server Setup
- 8.) Base Image Issues
- 9.) Container Port Mapping
- 10.) Specifying a Working Directory
- 11.) Unnecessary Builds
- 12.) Minimizing Cache Busting and Rebuilds

## **Day 3:**

### **Docker Compose with Multiple Local Containers (Visits):**

- 1.) App Server Status Code
- 2.) Assembling a Docker File
- 3.) Introducing Docker Compose
- 4.) Docker Compose Files (YAML)
- 5.) Networking with Docker Compose
- 6.) Starting and Stopping Docker Compose Containers
- 7.) Container Maintenance with Compose
- 8.) Container Status with Docker Status

### **Creating a Production Grade Work Flow:**

- 1.) Install Visual Studio Code
- 2.) Install Node JS and Path Setting
- 3.) Create React App Generation
- 4.) Creating the Dev Dockerfile
- 5.) Starting the Container
- 6.) Docker Volumes
- 7.) Overriding Dockerfile Selection
- 8.) Executing Tests
- 9.) Live Updating Tests
- 10.) Docker Compose for Running Tests
- 11.) Need of Nginx
- 12.) Implementing Multi-Step Builds
- 13.) Running Nginx

## **Day 4:**

### **Dockerizing a SpringBoot Application:**

- 1.) Spring Tool Suite Setup
- 2.) Creating a Spring Boot Application
- 3.) Understanding of POM.xml file
- 4.) Use of RestController & GetMapping Annotations
- 5.) Creating a Docker File
- 6.) Adding the Final Name
- 7.) Building a Spring Boot Docker JAR
- 8.) Running the Docker Application
- 9.) Generation of the Output

### **Dockerizing a SpringBoot App using Google JIB:**

- 1.) Apache Maven Setup
- 2.) Creating a Spring Boot Application
- 3.) Understanding POM.xml file
- 4.) Adding JIB Maven Plugin
- 5.) Use of RestController & GetMapping Annotations
- 6.) Creation of “settings.xml” file in .m2
- 7.) Proving server tag in “settings.xml”
- 8.) Maven Clean Compile and Build
- 9.) Run the Google JIB Application
- 10.) View the Repository in “hub.docker.com”
- 11.) Generation of the Output

## **Day 5:**

### **Building a Multi Container Application:**

- 1.) Worker Process Setup
- 2.) Express API Setup
- 3.) Connecting to Postgres
- 4.) Postgres Client Setup
- 5.) Redis Client Setup
- 6.) Express Route Handlers
- 7.) Generating React App
- 8.) Fetching Data in the React App
- 9.) Rendering Logic in the App
- 10.) Exporting the Fib Class
- 11.) Routing in the React App

### **Dockerizing Multiple Services:**

- 1.) Dockerizing a React App
- 2.) Dockerizing Generic Node Apps
- 3.) Adding a Postgres as a Service
- 4.) Environment Variables with Docker Compose
- 5.) The Worker and Client Services
- 6.) Nginx Path Routing
- 7.) Routing with Nginx
- 8.) Building a Custom Nginx Image
- 9.) Startup Docker Compose
- 10.) Nginx connect () failed-connection refused Error
- 11.) Troubleshoot Startup Bugs
- 12.) Opening Web Socket Connections