Online Auction

Technical Manual

**Slippery Rock University of Pennsylvania**

Contributions by:

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Table of Contents

[Docker 3](#_Toc145679459)

[Prerequisites for Docker 3](#_Toc145679460)

[Dockerfile Explanation 3](#_Toc145679461)

[Base Image 3](#_Toc145679462)

[Working Directory 3](#_Toc145679463)

[Copying Project Files 3](#_Toc145679464)

[Build Project 4](#_Toc145679465)

[Expose Port 4](#_Toc145679466)

[Run Command 4](#_Toc145679467)

[Docker Compose Explanation 4](#_Toc145679468)

[Services 4](#_Toc145679469)

[Volumes 4](#_Toc145679470)

[Compose Up 5](#_Toc145679471)

[Synopsis 6](#_Toc145679472)

# Docker

Docker is a platform used to develop, ship, and run applications inside containers. A container is a lightweight, standalone, and executable software package that includes everything needed to run a piece of software, including the code, runtime, system tools, libraries, and settings. Containers are isolated from each other and the host system.

In the context of the Online Auction project, Docker is used to ensure that the application and its dependencies are packaged together and can be consistently deployed across various environments.

## Prerequisites for Docker

1. Ensure you have Docker installed on your machine. Please refer to the install manual for instructions.
2. Ensure Docker Engine is running (start the Docker Desktop app).
3. Have the Project cloned to your machine from GitHub

## Dockerfile Explanation

The Dockerfile is a script used by Docker to automate the building of container images. Here's a breakdown of the provided Dockerfile:

### Base Image

FROM maven:3.8.4-openjdk-17

This line specifies that the base image for this container will be the official Maven image with Java 17. This means that the container will have both Maven and Java pre-installed.

### Working Directory

WORKDIR /OnlineAuction

This sets the working directory inside the container to /OnlineAuction.

### Copying Project Files

COPY pom.xml .

COPY src ./src

These lines copy the pom.xml (Maven project file) and the src directory (source code) into the container's working directory.

### Build Project

RUN mvn clean install -DskipTests

This runs the Maven command to clean any previous builds, install the project dependencies, and compile the source code. Tests are skipped in this process.

### Expose Port

EXPOSE 8080

This exposes port 8080 from the container, which is the default port for Spring Boot applications.

### Run Command

EXPOSE 8080

This is the command that will be executed when the container starts. It runs the Spring Boot application.

## Docker Compose Explanation

Docker Compose is a tool for defining and running multi-container Docker applications. The provided docker-compose.yml file defines the services, networks, and volumes for the Online Auction project.

### Services

#### app

This service represents the main application. It depends on the mysql service, builds the image using the provided Dockerfile, maps port 6868 on the host to port 8080 on the container, and sets various environment variables for Spring Boot configuration.

The volumes directive is used to mount the Maven local repository from the host to the container, ensuring that dependencies are cached and reused between builds.

The stdin\_open and tty options are set to true, allowing you to interact with the app service as if it were running in the foreground.

#### mysql

This service uses the official MySQL 8.0 image. It sets the root password and initializes a database named online-auction. The import.sql file from the project is copied to the container's initialization directory, ensuring that the database schema and initial data are loaded when the container starts.

The volumes directive is used to persist the MySQL data on the host machine, ensuring that data is not lost when the container is stopped or removed.

### Volumes

volumes:

online-auction-db:

This defines a named volume online-auction-db which is used to persist the MySQL database data.

### Compose

To build and start the services defined in the docker-compose.yml file, use the following command:

docker-compose up --build

Once the services are up and running, you can access the Online Auction application by navigating to:

http://localhost:6868

To stop the running services, press CTRL+C in the terminal where docker-compose up is running. Alternatively, you can run the following command in another terminal:

docker-compose down

# Synopsis

**Requirements to Operate Software:**

Eclipse IDE for Enterprise Java and Web Developers – 2023 – 06.

MySQL Server – 8.0 or above.

MySQL Workbench – 8.0 or above.

MySQL Shell - 8.0 or above.

Operating System capable of running software above.

\*Reference the ‘Updated Install Manual’ within Program Documents for more details on the process of installing each product and the steps for first time setup.

After setup, the program can be run by right clicking the ‘sellingwidgets’ folder within eclipse and selecting RunAs -> Springboot Application.

Upon initialization of the program, the user is brought to the index page where there are a variety of options including ‘login,’ ‘signup,’ ‘browse,’ ‘motto,’ ‘FAQ,’ and ‘contact us.’

The software contains to accounts in which are utilized for testing, they include:

**Regular User Account:**

Username: userName

Password: testPass

**Administrative User Account:**

Username: useradminwidget

Password: useradmin

\*Each of the functions within the program are described in detail as well as the operations in which they can perform. Reference the ‘User Manual’ within Program Documents.