**Docker Run Guide for Go-Phone Project**

**1. Environment Setup**

**1.1 Required Installation (If you already have Docker and Maven, you can skip this)**

Before starting, you need to install Docker and Maven on your machine:

* Download [Docker Desktop](https://www.docker.com/products/docker-desktop/) from the homepage (recommended to use AMD64). Command to check Docker on terminal:

$: docker version

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* Download [Apache [Maven](https://maven.apache.org/download.cgi)](https://maven.apache.org/download.cgi) from the home page. Command to test Maven on terminal:

$: mvn -v

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**1.2 Build**

In the root directory of the project, run the command:

$: mvn clean package -DskipTests

**1.3 Build Docker image**

In the root directory of the project, run the command:

$: docker build -t go\_phone-app .

Open Docker Desktop installed in step 1.1. Go to Builds and if you see gophone, it means it was successful.

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**1.4 Run the entire service using Docker Compose**

$: docker compose up -d

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Note that you must see all containers start successfully as shown in the image. Then go to Docker desktop to check.

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Use the $: docker ps command to check running containers

**3. Stop and reset the environment**

**3.1 Stop running containers**

$: docker compose down

**3.2 Stop and erase all data (clean reset)**

$: docker compose down -v

Note when using because it will delete all data in MySQL, Redis.

**4. Common errors and how to handle them**

**4.1 Spotless error when building Docker**

Cause: Spotless plugin checks code format when running in Docker.

* Solution:
  + Run $: mvn spotless:apply before building.

**4.2 Port duplication error**

Cause: The local machine already has another service running on ports 8888, 3306, 6379, 8025.

* Solution: Adjust the port in docker-compose.yml accordingly.

**4.3 Application cannot connect to database**

* Check if MySQL container is running using $: docker ps.
* View MySQL log $: docker logs go\_phone-mysql.
* Check username, password, database in application.yml and docker-compose.yml.