

Docker Assignment

[Github link : <https://github.com/shubham8596/DockerAssignment>]

Software/Plugins/Language Used :

- Java
- Spring Boot
- Mysql
- Postman
- Docker
- STS (Spring Tool Suite)

Implementation :

- Created Spring boot maven project.
- Added required dependencies in pom.xml. E.g mysql dependency.
- Created Controller, Service, POJO classes and Repository Interface.
- In services, added CRUD Operations.
- Implemented response message handling.
- Added configuration for mysql database and hibernate in 'application.properties' file.
- Then 'Maven clean' and 'Maven Install' to create 'war' file.
- Write Dockerfile which contain all code and mysql.

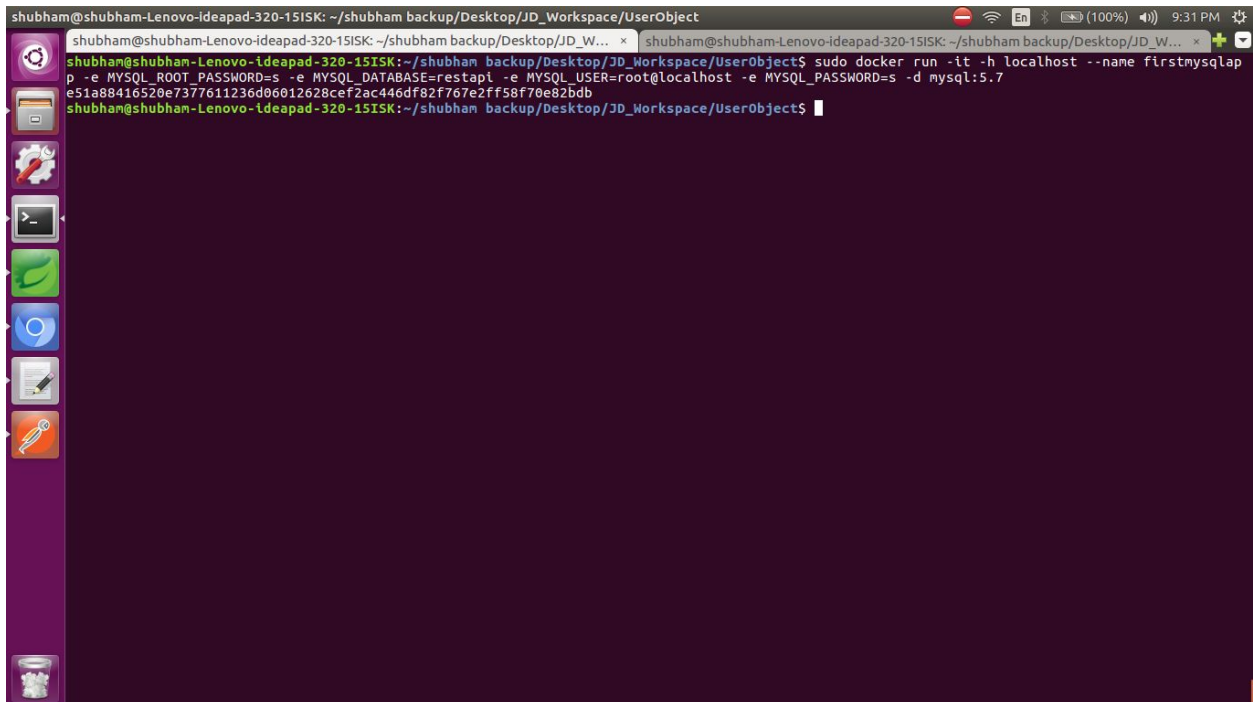
Steps to run code :

- Pull Mysql image :

```
sudo docker pull mysql:5.7
```

- Run Mysql Container :

```
sudo docker run -it -h localhost --name firstmysqlapp -e  
MYSQL_ROOT_PASSWORD=s -e MYSQL_DATABASE=restapi  
-e MYSQL_USER=root@localhost -e MYSQL_PASSWORD=s -d  
mysql:5.7
```

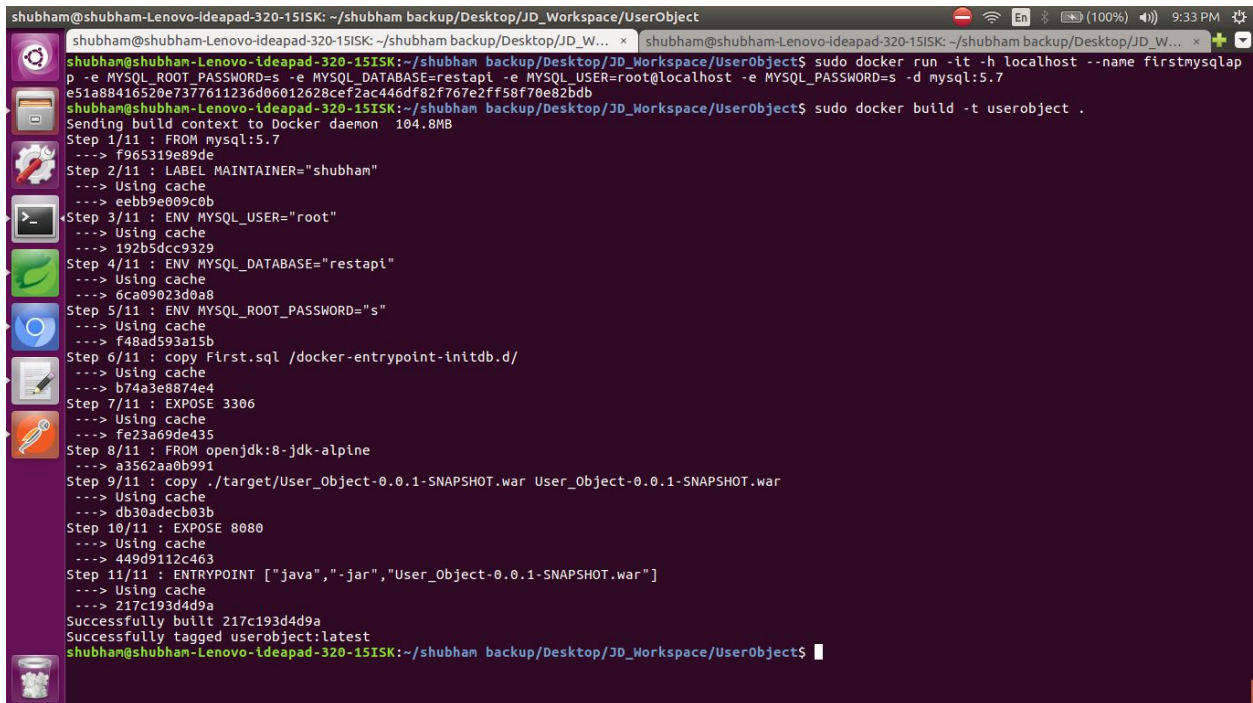


A terminal window screenshot showing the execution of Docker commands. The terminal has a dark purple background. The prompt is `shubham@shubham-Lenovo-Ideapad-320-15ISK: ~/shubham backup/Desktop/JD_Workspace/UserObject`. The first command entered is `sudo docker pull mysql:5.7`, which outputs `mysql:5.7: Pulling from mysql/mysql-server` and shows progress bars for layers. The second command is `sudo docker run -it -h localhost --name firstmysqlapp -e MYSQL_ROOT_PASSWORD=s -e MYSQL_DATABASE=restapi -e MYSQL_USER=root@localhost -e MYSQL_PASSWORD=s -d mysql:5.7`, which outputs `firstmysqlapp` and a long alphanumeric string. The prompt returns to `shubham@shubham-Lenovo-Ideapad-320-15ISK: ~/shubham backup/Desktop/JD_Workspace/UserObject$`. The terminal window has a sidebar with icons for applications like a file manager, settings, and a terminal.

```
shubham@shubham-Lenovo-Ideapad-320-15ISK: ~/shubham backup/Desktop/JD_Workspace/UserObject
shubham@shubham-Lenovo-Ideapad-320-15ISK:~/shubham backup/Desktop/JD_Workspace/UserObject$ sudo docker pull mysql:5.7
mysql:5.7: Pulling from mysql/mysql-server
e51a88416520e7377611236d06012628cef2ac446df82f767e2ff58f70e82bdb
shubham@shubham-Lenovo-Ideapad-320-15ISK:~/shubham backup/Desktop/JD_Workspace/UserObject$ sudo docker run -it -h localhost --name firstmysqlapp -e MYSQL_ROOT_PASSWORD=s -e MYSQL_DATABASE=restapi -e MYSQL_USER=root@localhost -e MYSQL_PASSWORD=s -d mysql:5.7
firstmysqlapp
shubham@shubham-Lenovo-Ideapad-320-15ISK:~/shubham backup/Desktop/JD_Workspace/UserObject$
```

- Build Dockerfile :

`sudo docker build -t userobject .`

A terminal window screenshot showing the execution of Docker commands. The user is in a directory named 'UserObject' and runs 'sudo docker build -t userobject .'. The terminal output shows the build process with 11 steps, including setting environment variables for MySQL and copying files. The build is successful, and the image is tagged as 'userobject:latest'.

```
shubham@shubham-Lenovo-Ideapad-320-15ISK: ~/shubham backup/Desktop/JD_Workspace/UserObject
shubham@shubham-Lenovo-Ideapad-320-15ISK:~/shubham backup/Desktop/JD_Workspace/UserObject$ sudo docker run -it -h localhost --name firstmysqlapp
p -e MYSQL_ROOT_PASSWORD=s -e MYSQL_DATABASE=restapi -e MYSQL_USER=root@localhost -e MYSQL_PASSWORD=s -d mysql:5.7
shubham@shubham-Lenovo-Ideapad-320-15ISK:~/shubham backup/Desktop/JD_Workspace/UserObject$ sudo docker build -t userobject .
Sending build context to Docker daemon 104.8MB
Step 1/11 : FROM mysql:5.7
--> f965319e89de
Step 2/11 : LABEL MAINTAINER="shubham"
--> Using cache
--> eebb9e009c0b
Step 3/11 : ENV MYSQL_USER="root"
--> Using cache
--> 192b5dcc9329
Step 4/11 : ENV MYSQL_DATABASE="restapi"
--> Using cache
--> 6ca09023d0a8
Step 5/11 : ENV MYSQL_ROOT_PASSWORD="s"
--> Using cache
--> f48ad593a15b
Step 6/11 : copy First.sql /docker-entrypoint-initdb.d/
--> Using cache
--> b74a3e8874e4
Step 7/11 : EXPOSE 3306
--> Using cache
--> fe23a69de435
Step 8/11 : FROM openjdk:8-jdk-alpine
--> a3562aa0b991
Step 9/11 : copy ./target/User_Object-0.0.1-SNAPSHOT.war User_Object-0.0.1-SNAPSHOT.war
--> Using cache
--> db30adecb03b
Step 10/11 : EXPOSE 8080
--> Using cache
--> 449d9112c463
Step 11/11 : ENTRYPOINT ["java", "-jar", "User_Object-0.0.1-SNAPSHOT.war"]
--> Using cache
--> 217c193d4d9a
Successfully built 217c193d4d9a
Successfully tagged userobject:latest
shubham@shubham-Lenovo-Ideapad-320-15ISK:~/shubham backup/Desktop/JD_Workspace/UserObject$
```

- Run Dockerfile :

`sudo docker run -it -p 8080:8080 --link firstmysqlapp
userobject:latest`

```

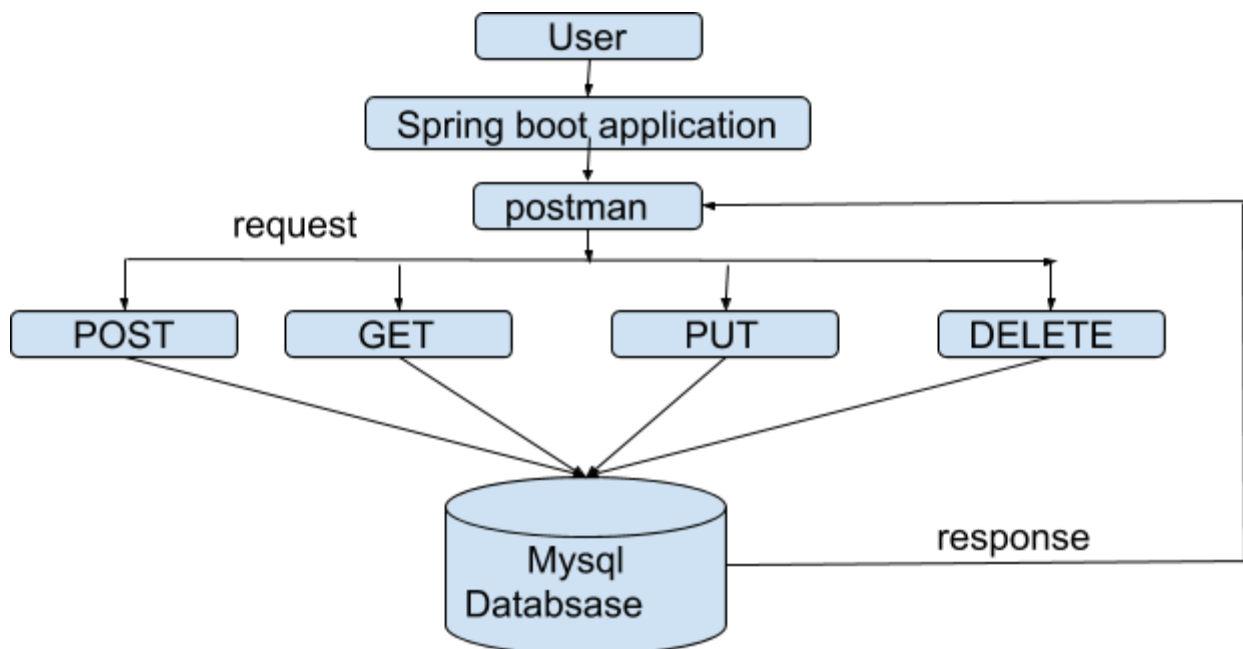
shubham@shubham-Lenovo-Ideapad-320-15ISK: ~/shubham backup/Desktop/JD_Workspace/UserObject
Successfully built 217c193d4d9a
Successfully tagged userobject:latest
shubham@shubham-Lenovo-Ideapad-320-15ISK:~/shubham backup/Desktop/JD_Workspace/UserObject$ sudo docker run -it -p 8080:8080 --link firstmysqlap
p userobject:latest

:: Spring Boot :: (v2.2.0.BUILD-SNAPSHOT)

2020-05-07 16:05:05.840 INFO 1 --- [main] com.example.demo1.UserApplication : Starting UserApplication v0.0.1-SNAPSHOT on b3
1296e3948e with PID 1 (/User_Object-0.0.1-SNAPSHOT.war started by root in /)
2020-05-07 16:05:05.861 INFO 1 --- [main] com.example.demo1.UserApplication : No active profile set, falling back to default
profiles: default
2020-05-07 16:05:08.455 INFO 1 --- [main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data repositories in DEFA
ULT mode.
2020-05-07 16:05:08.838 INFO 1 --- [main] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 34
2ms. Found 1 repository interfaces.
2020-05-07 16:05:09.637 INFO 1 --- [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.transaction.annotati
on.ProxyTransactionManagementConfiguration' of type [org.springframework.transaction.annotation.ProxyTransactionManagementConfiguration] is not
eligible for getting processed by all BeanPostProcessors (for example: not eligible for auto-proxying)
2020-05-07 16:05:10.550 INFO 1 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
2020-05-07 16:05:10.587 INFO 1 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2020-05-07 16:05:10.588 INFO 1 --- [main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.27]
2020-05-07 16:05:12.985 INFO 1 --- [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationCon
text
2020-05-07 16:05:12.985 INFO 1 --- [main] o.s.web.context.ContextLoader : Root WebApplicationContext: initialization com
pleted in 6665 ms
2020-05-07 16:05:13.369 INFO 1 --- [main] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing PersistenceUnitInfo [nam
e: default]
2020-05-07 16:05:13.666 INFO 1 --- [main] org.hibernate.Version : HHH0000412: Hibernate Core [5.4.6.Final]
2020-05-07 16:05:14.108 INFO 1 --- [main] o.hibernate.annotations.common.Version : HCANN000001: Hibernate Commons Annotations [5.
1.0.Final]
2020-05-07 16:05:14.334 INFO 1 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2020-05-07 16:05:14.385 INFO 1 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
2020-05-07 16:05:14.934 INFO 1 --- [main] org.hibernate.dialect.Dialect : HHH000400: Using dialect: org.hibernate.dialec
t.MySQL8Dialect
Hibernate:

```

Flow Diagram :



***** THANKS *****