**Docker Commands - Creating Image Manually**

* docker run -dit openjdk:8-jdk-alpine
* docker container exec naughty\_knuth ls /tmp
* docker container cp target/hello-world-rest-api.jar naughty\_knuth:/tmp
* docker container exec naughty\_knuth ls /tmp
* docker container commit naughty\_knuth in28min/hello-world-rest-api:manual1
* docker run in28min/hello-world-rest-api:manual1
* docker container ls
* docker container commit --change='CMD ["java","-jar","/tmp/hello-world-rest-api.jar"]' naughty\_knuth in28min/hello-world-rest-api:manual2
* docker run -p 8080:8080 in28min/hello-world-rest-api:manual2

**Quick Tip for Windows 10 : Use 192.168.99.100 in URL instead of localhost**

If you are using **Window 10** and are using **docker toolbox**

=> Use **192.168.99.100** instead of **localhost**.

**Note:**If **192.168.99.100** does not work, you can find the IP by using the command docker-machine ip

docker run -p 5000:5000 in28min/todo-rest-api-h2:1.0.0.RELEASE

**Dockerfile: Basic**

Describes specific instructions to execute in order to build an image

**Instructions**

* FROM openjdk:8-jdk-alpine

(base image that the container will be created in)

* ADD target/hello-world-rest-api.jar hello-world-rest-api.jar

(copies the image)

* ENTRYPOINT ["sh", "-c", "java -jar /hello-world-rest-api.jar"]

(Sets command to run at startup/instruction in the shell)

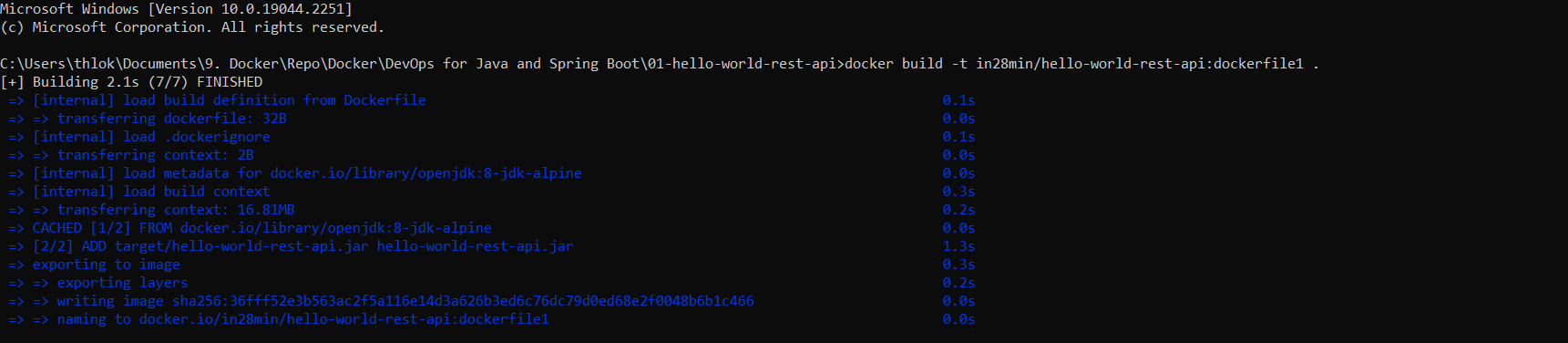
**Docker Commands - Creating Image Aumatically**

**Building an Image from a project in eclipse**

1.Build a Jar - /target/hello-world-rest-api.jar

- run as, maven build, Goals: package DskipTests / from cmd: mvn package -DskipTests

- docker build -t in28min/hello-world-rest-api:dockerfile1 .

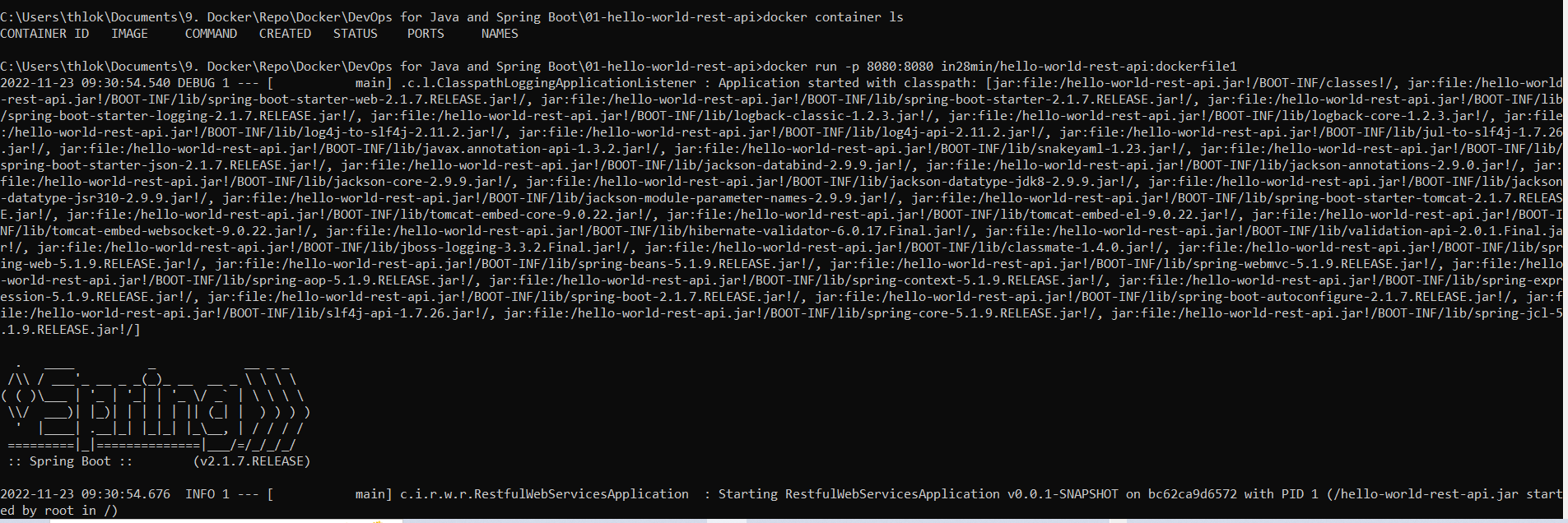


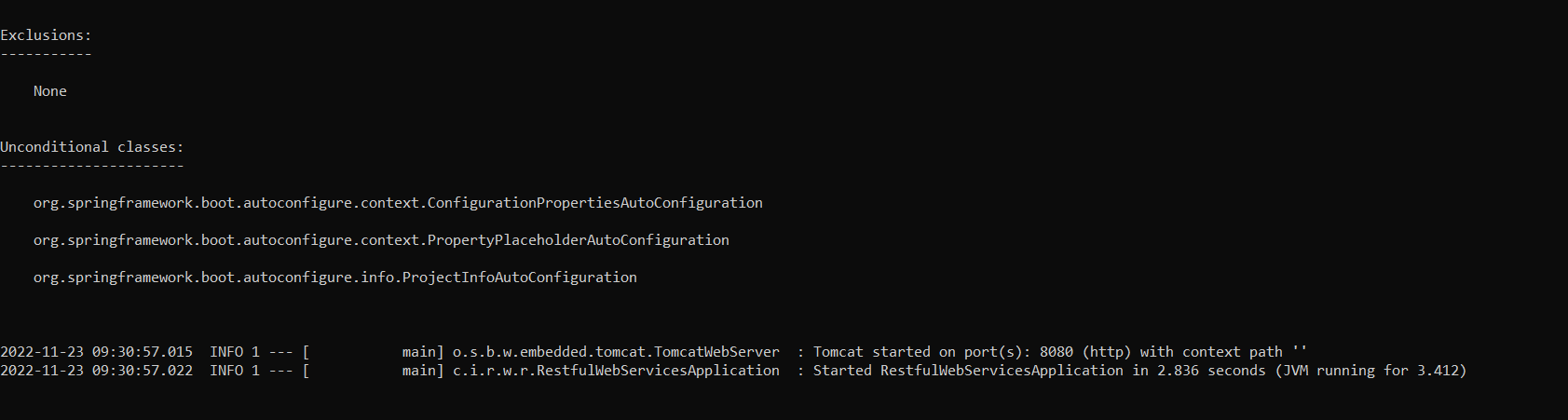
2.Setup the Prerequisites for Running the JAR - openjdk:8-jdk-alpine

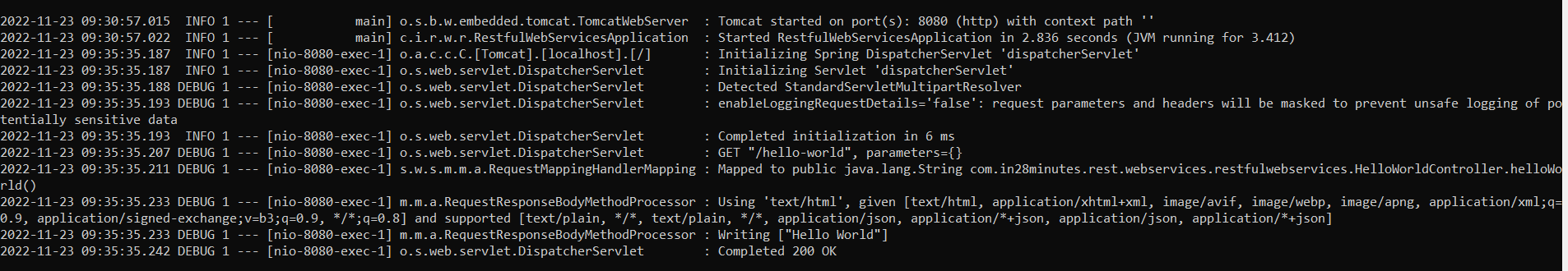
3.Copy the jar

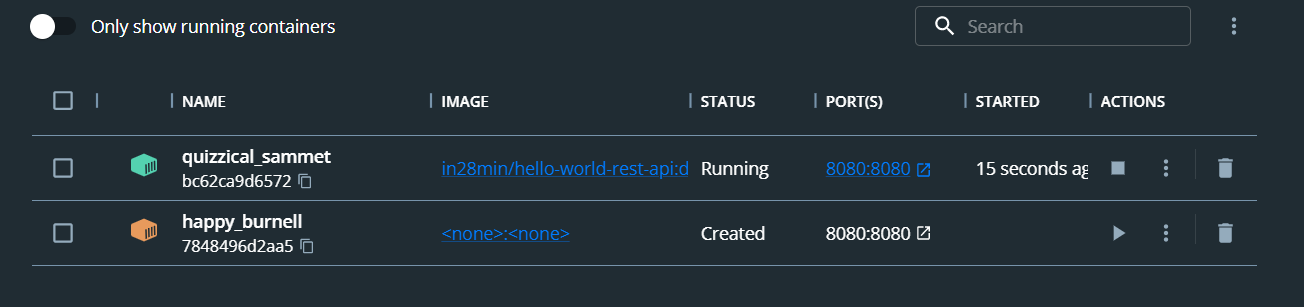
4.Run the jar

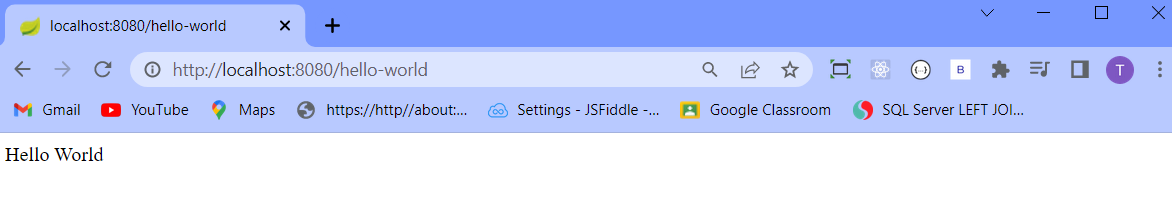
Docker run -p 8080:8080 in28min/hello-world-rest-api:dockerfile1



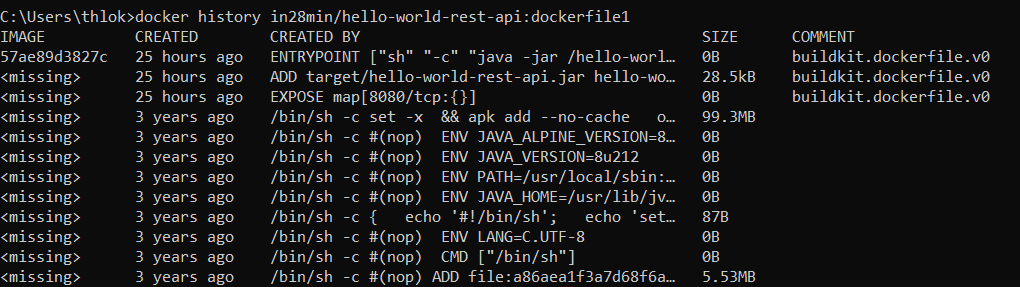








**docker history (gives history of the image)**

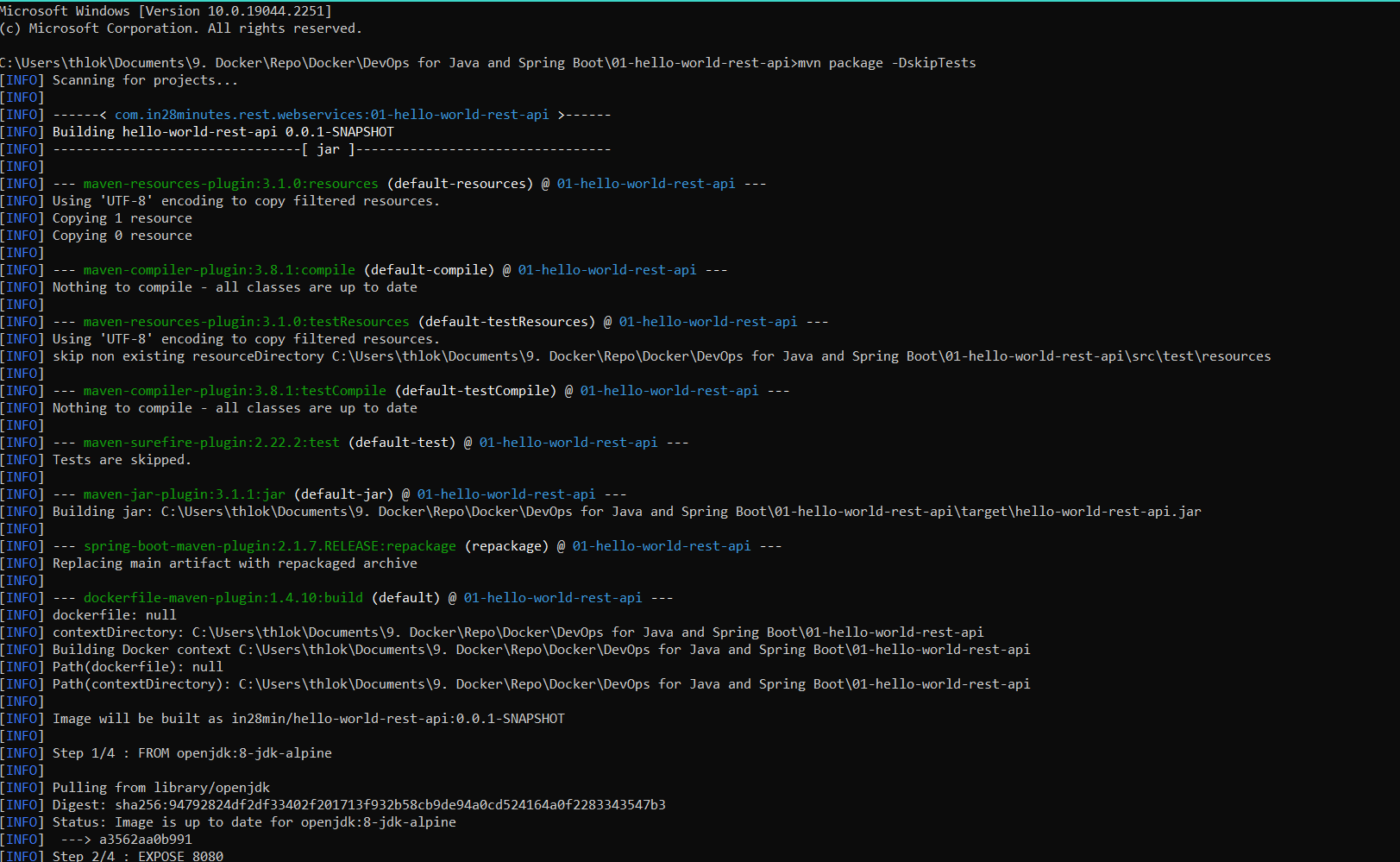


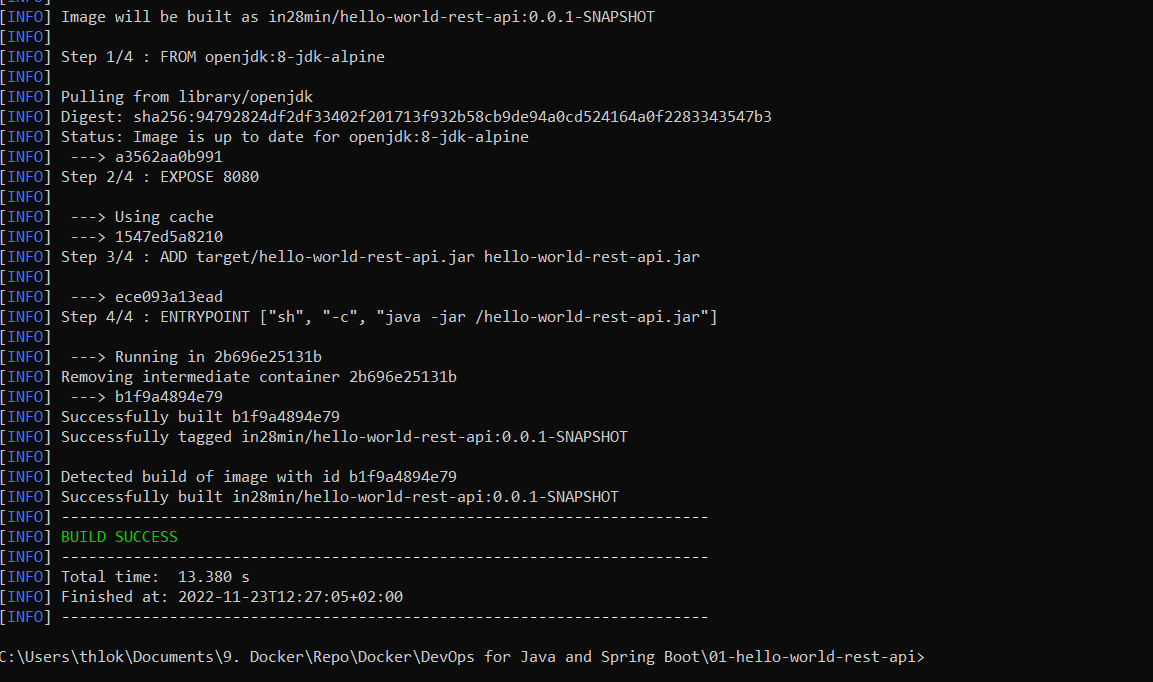
**Building image using maven build in eclipse**

* Maven build >> insert under Goals “package -DskipTests”

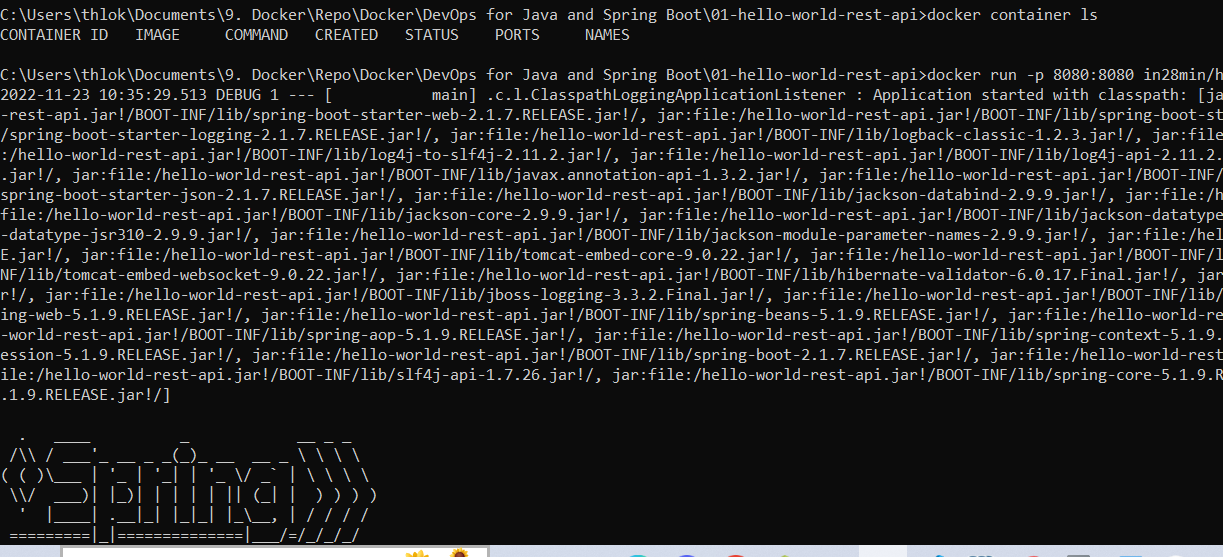
**Building image in cmd**

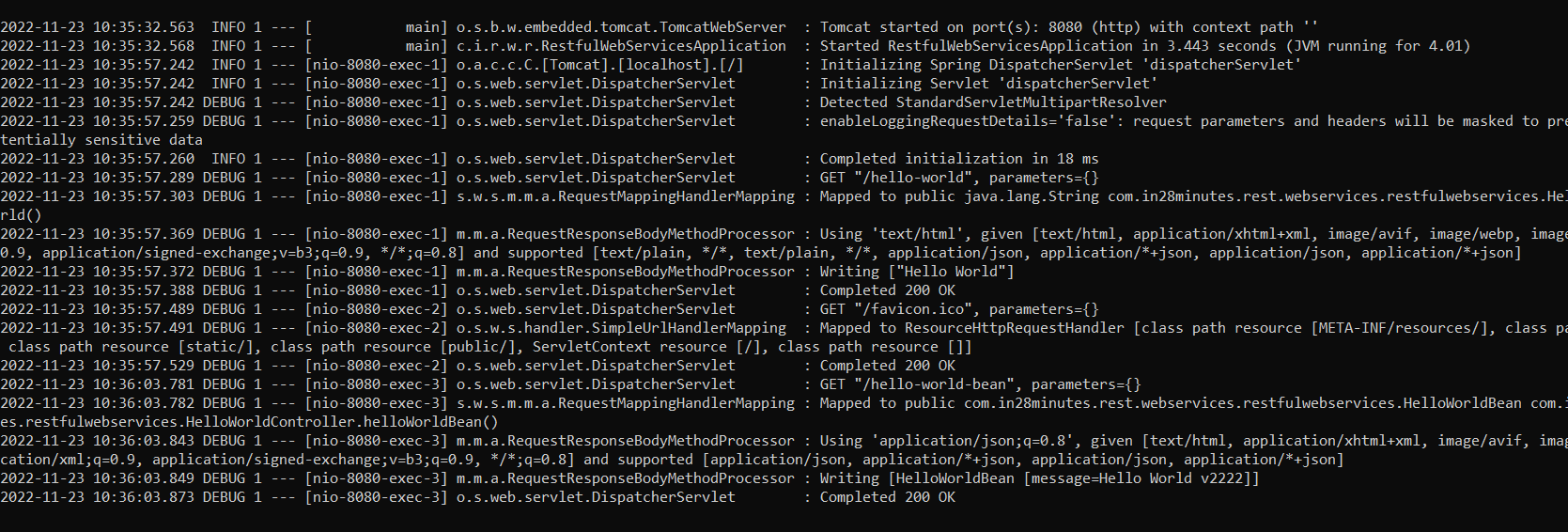
* Mvn package -DskipTests

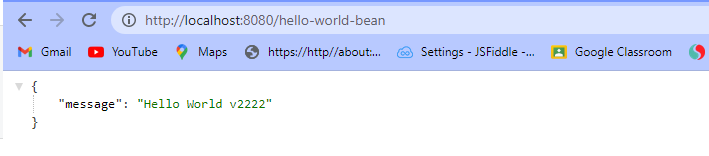


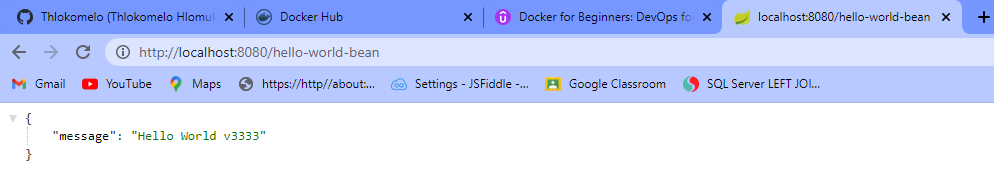


**Running the image**

docker run -p 8080:8080 in28min/hello-world-rest-api:0.0.1-SNAPSHOT







**Other ways to create images**

**Creating generic Dockerfile**

FROM openjdk:8-jdk-alpine

EXPOSE 8080

ADD target/\*.jar app.jar

ENTRYPOINT ["sh", "-c", "java -jar /app.jar"]

**Run this after changing the Dockerfile and adding maven plugin**

* mvn clean package -DskipTests

**Creating Level 2 Dockerfile**

FROM openjdk:8-jdk-alpine

//(creates variable in dependency folder)

ARG DEPENDENCY=target/dependency

COPY ${DEPENDENCY}/BOOT-INF/lib /app/lib

COPY ${DEPENDENCY}/META-INF /app/META-INF

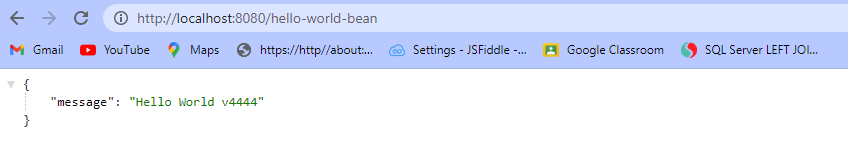
COPY ${DEPENDENCY}/BOOT-INF/classes /app

//runs the webservice using all the liabraries

ENTRYPOINT ["java","-cp","app:app/lib/\*","com.in28minutes.rest.webservices.restfulwebservices.RestfulWebServicesApplication"]

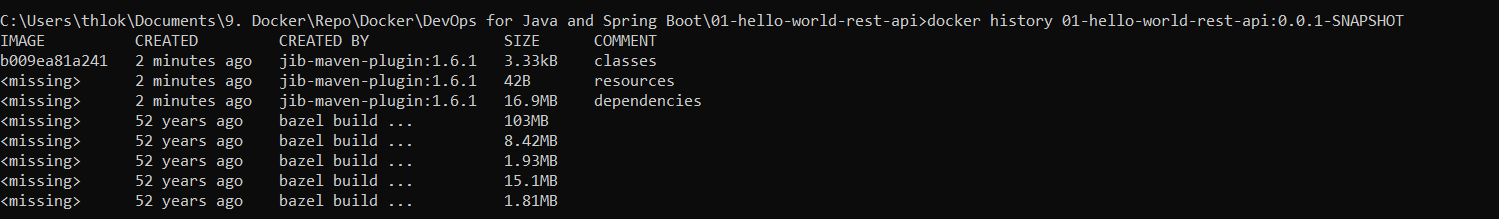
**Build the image**

* Update controller class
* mvn clean package -DskipTests
* docker build -t in28min/hello-rest-api:dockerfile1 .



**JIB Plugin (Java Specific)**

* Simplifies containerization of Java applications without a Dockerfile.
* Automatically detects classes to run the web service.



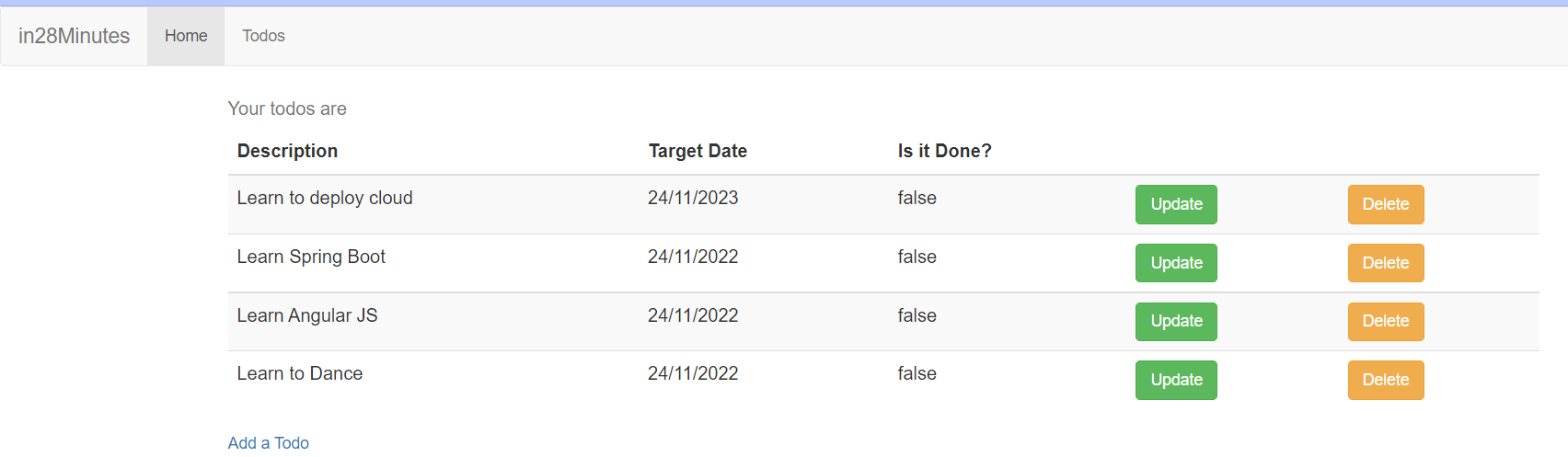
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**02 : To-do we application**

http://localhost:8080/login

User: in28minutes

Password: dummy



**H2 Console**

