WELCOME
&
THANK YOU

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Docker

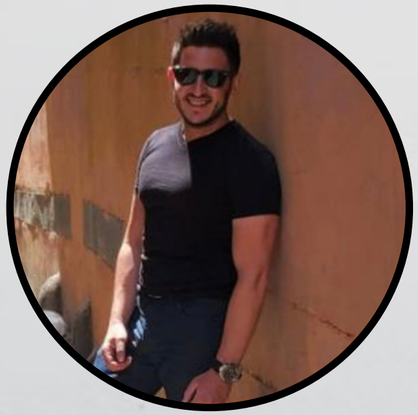
For TD Bank

MEET A FEW OF OUR TEAM MEMBERS

TANGY F.
CEO

LINA G
PROJECT MANAGER

CHEDDAE G.
TECH ASSISTANT



EDDIE K.
DEVELOPER

WILLIAM D.
DEVELOPER

- *Founded in South Florida in 2018*
- *Evolved from Software Development Expanded into a Technical Training firm Providing tailored technical training solutions for businesses*

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THE BITTY BTYE

Bitty Byte is our
bite size lighting training

The Duration is 1 hour a day
for 5 days

One Topic~
In this case it's Docker

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WE LISTENED TO YOU & YOUR COLLEAGUES

1. We interviewed practitioners and your leads
2. We reviewed anonymous data
3. Came up with a tailored curriculum based on real-time data

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THE SPACE

A safe space where our goal is to help you

We are here to help you grow. If there is something you don't understand this is the place to ask.

This is a 'No Judgment Zone'

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MEET YOUR BITTY BYTE TEAM

TANGY F.
CEO

EDDIE K.
DEVELOPER

WILLIAM D.
DEVELOPER

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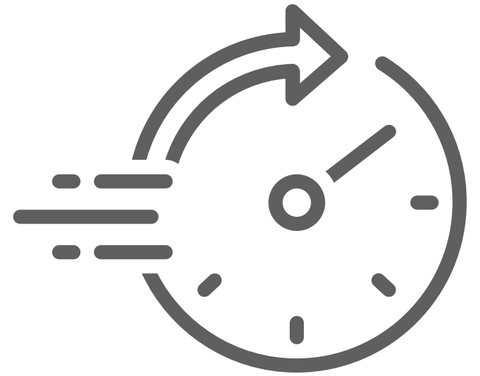
Rapid

TRIVIA



Rapid Trivia

In what year was Docker officially founded as an open-source project?

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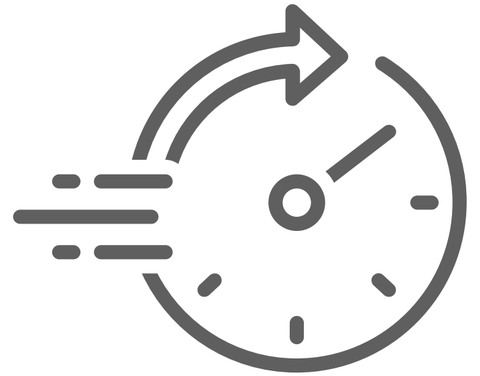
Rapid

TRIVIA



Rapid Trivia

Docker was officially founded as an open-source project in March 2013.

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TRAINING DAY 1

TODAY'S AGENDA

1. What is Docker
2. Pre Course Required Apps
3. Docker Vs. VM’s
4. Files, Images & Containers
5. Starting the Java Project

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DAY 1

What is Docker?

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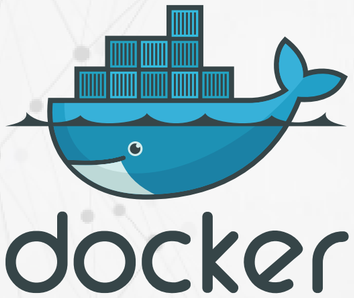
WHAT IS DOCKER?



- Docker is a software platform that allows you to:
  1. Build
  2. Test
  3. Deploy

  Applications quickly.

- Docker uses Containers that have everything the software needs to run including libraries, system tools, code & runtime.

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DAY 1
GETTING STARTED

Required Apps

Note:
This part Is not required on your company laptop.

However,
it is needed to understand the future lesson

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REQUIRED APPS

1. Selected language complier or VM (In this case we are using Java)
2. Having your IDE (VS Code)
3. Adding Extensions for VS Code
    a. Extension Pack for Java
    b. Spring boot Extension pack
    c. Lombok
4. Installing Docker
5. Building your application (Hello World).

Let's see it running.

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DAY 1

Docker Vs. VM's

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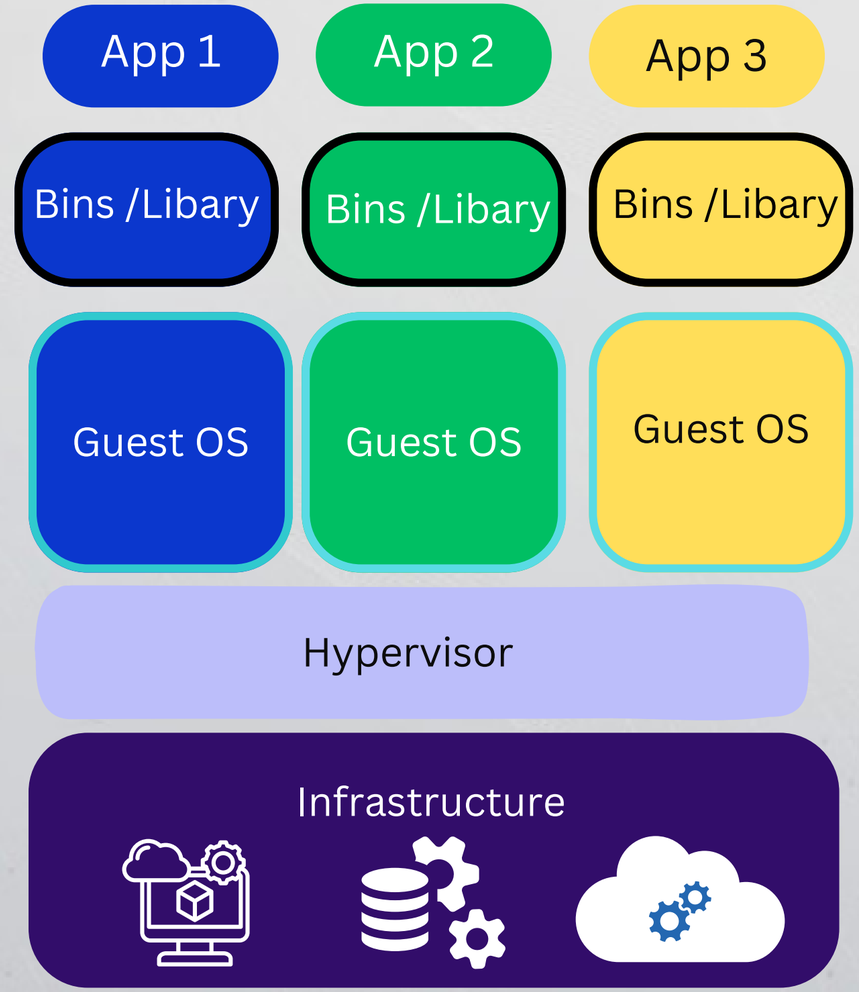
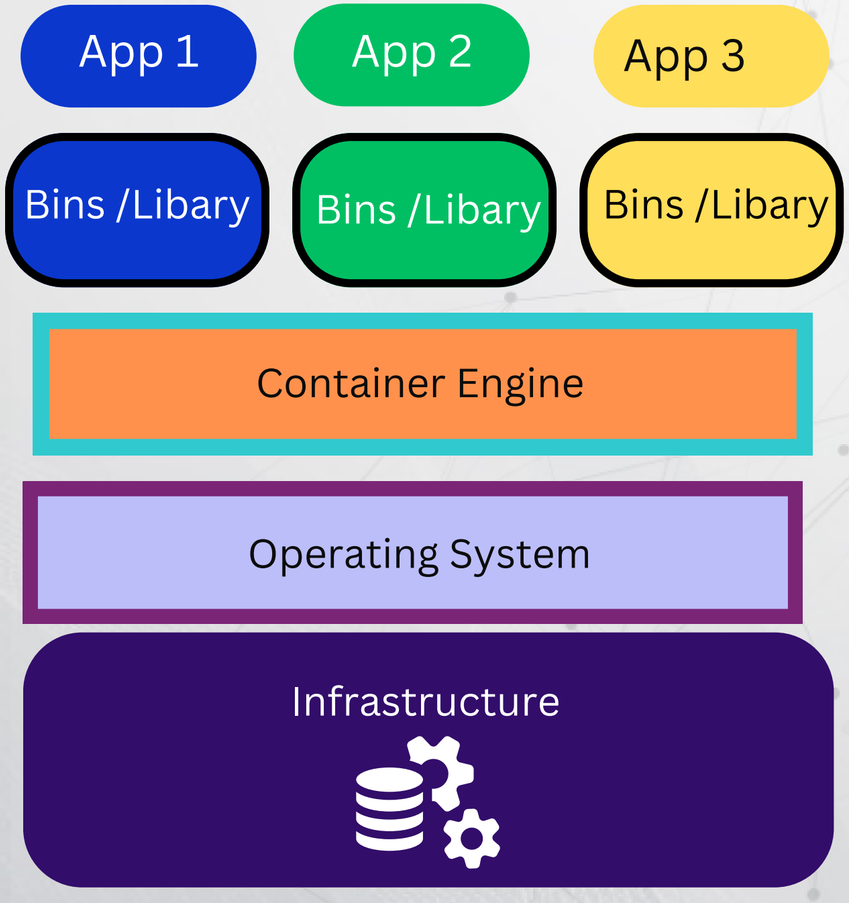
HOW DOCKER DIFFERS FROM VM'S

docker

Virtual Machines



Containers



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DAY 1

Files, Images & Containers

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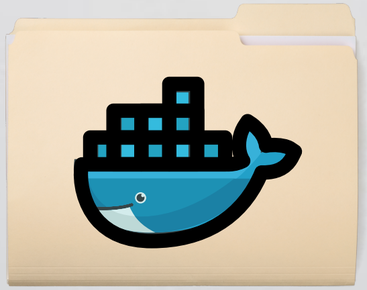
DOCKER FILE, IMAGE AND CONTAINER

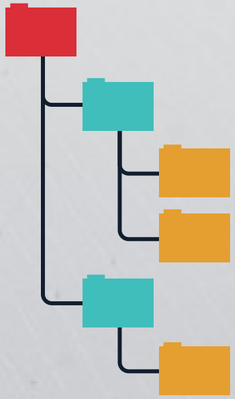
Dockerfile



Docker Image

Docker Container

```
FROM openjdk:11-jre-slim
WORKDIR /app
COPY target/your-spring-boot-app.jar app.jar
EXPOSE 8080
CMD ["java", "-jar", "app.jar"]
```



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DAY 1

Building your application (Hello World).

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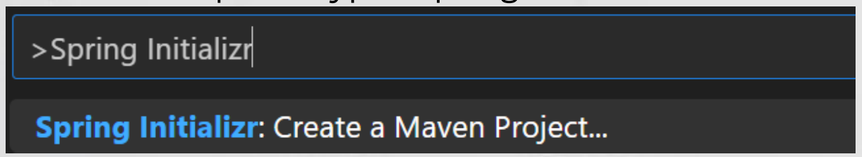
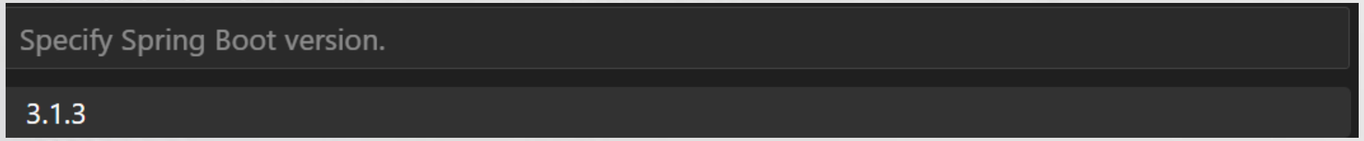
BUILDING YOUR APPLICATION

In VSCode;

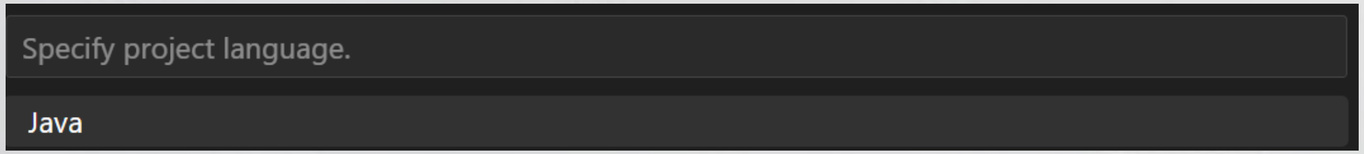
Ctrl + Shift + p and type “Spring Initializr” and click:



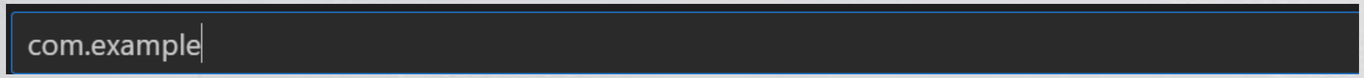
Then click 3.1.3



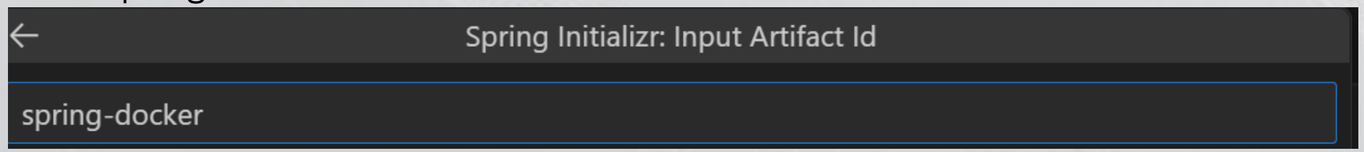
Then Java



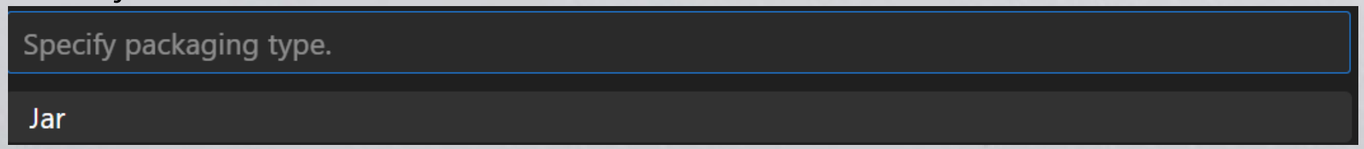
Leave default and enter



Enter spring-docker as Artifact Id



Select jar



Let's see it running.

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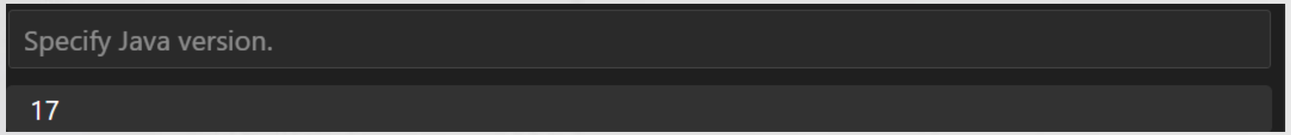
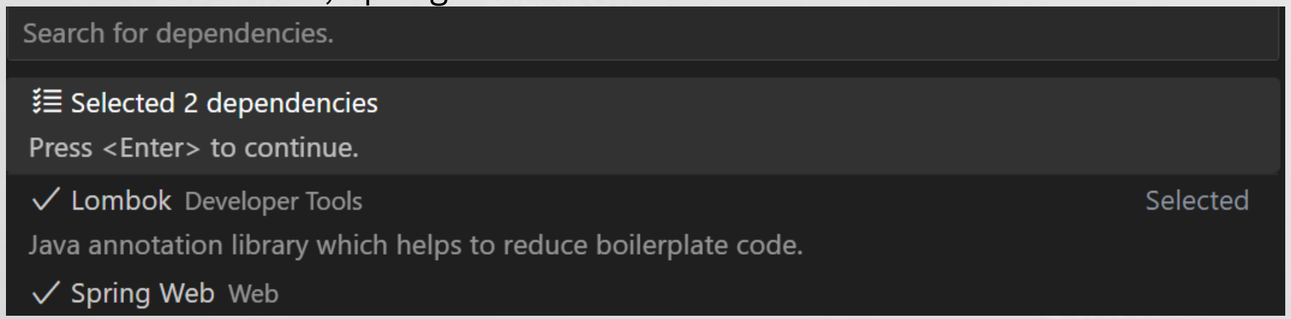
BUILDING YOUR APPLICATION

In VSCode;

Then 17:

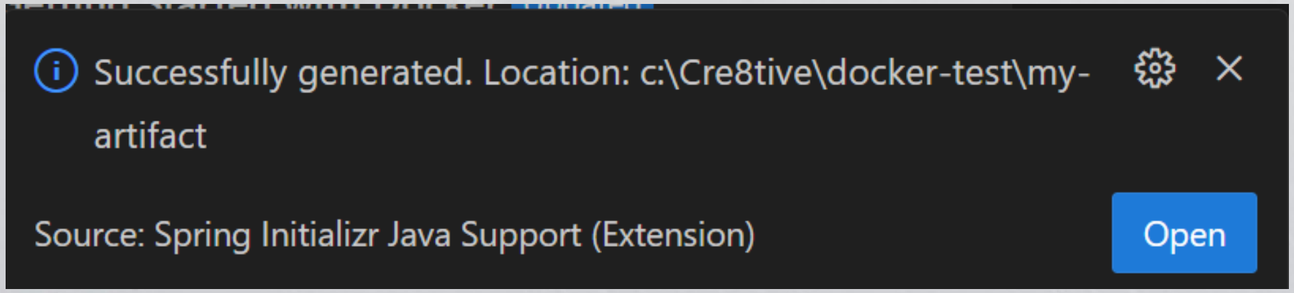


Then select lombok, Spring Web and hit enter



Then select desired location folder in your local drive and hit enter

Click Open



Let's see it running.

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BUILDING YOUR APPLICATION

Create a Dockerfile and add the following content

```
FROM maven:3.8.5-openjdk-17

WORKDIR /app

COPY pom.xml .

RUN mvn dependency:resolve

COPY src ./src

RUN mvn package

CMD ["java","-jar","target/spring-app-0.0.1-SNAPSHOT.jar"]
```

Let's see it running.

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BUILDING YOUR APPLICATION

To create the Image, start Docker Desktop and then run the docker build command in the terminal section of VSCode with the parameters as shown

Dockerfile > CMD

```
1   FROM maven:3.8.5-openjdk-17
2   WORKDIR /app
3   COPY pom.xml .
4   RUN mvn dependency:resolve
5   COPY src ./src
6   RUN mvn package
7   CMD [ "java", "-jar", "target/spring-docker-0.0.1-SNAPSHOT.jar" ]
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Cre8tive\docker-test\my-artifact> docker build -t spring-docker-image .
```

Let's see it running.

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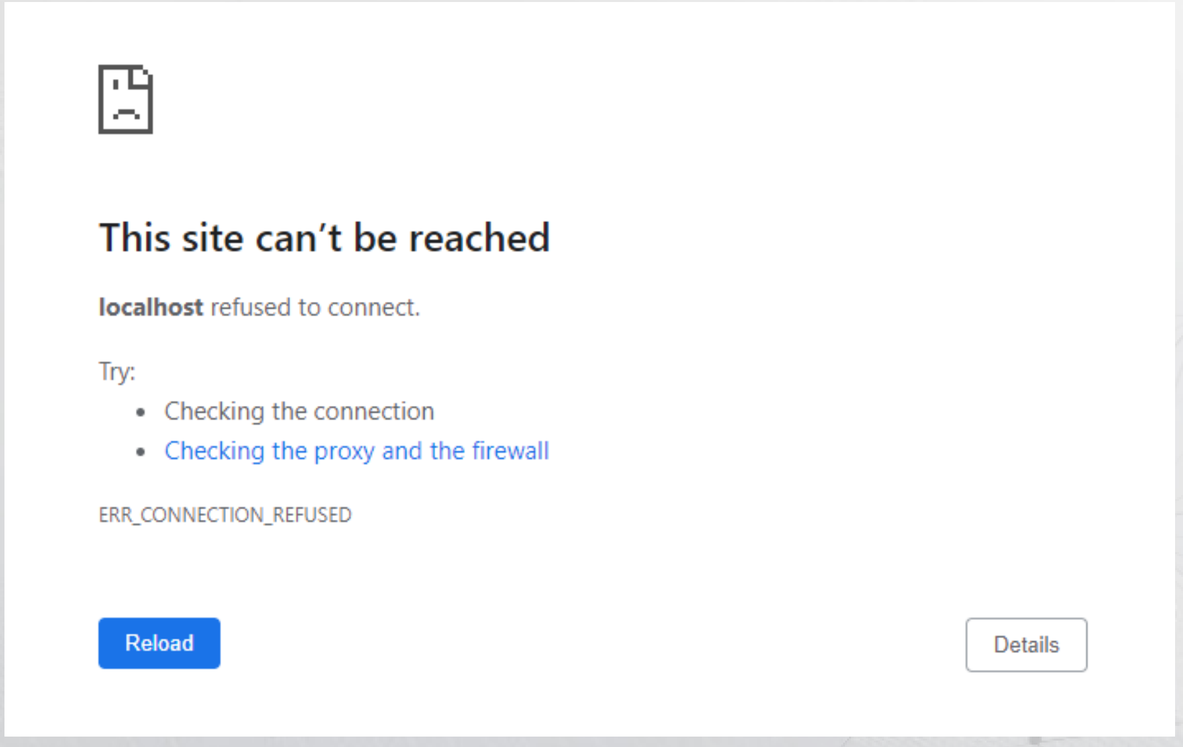
BUILDING YOUR APPLICATION

After instantiating a Container with the previous image, we are not getting the hello world page in the browser, something is missing.



Let's see it running.

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BUILDING YOUR APPLICATION

Add port to expose and re-run docker build command

Dockerfile

```
1  FROM maven:3.8.5-openjdk-17
2  WORKDIR /app
3  COPY pom.xml .
4  RUN mvn dependency:resolve
5  COPY src ./src
6  RUN mvn package
7  EXPOSE 8080
8  CMD [ "java", "-jar", "target/spring-docker-0.0.1-SNAPSHOT.jar" ]
```

Let's see it running.

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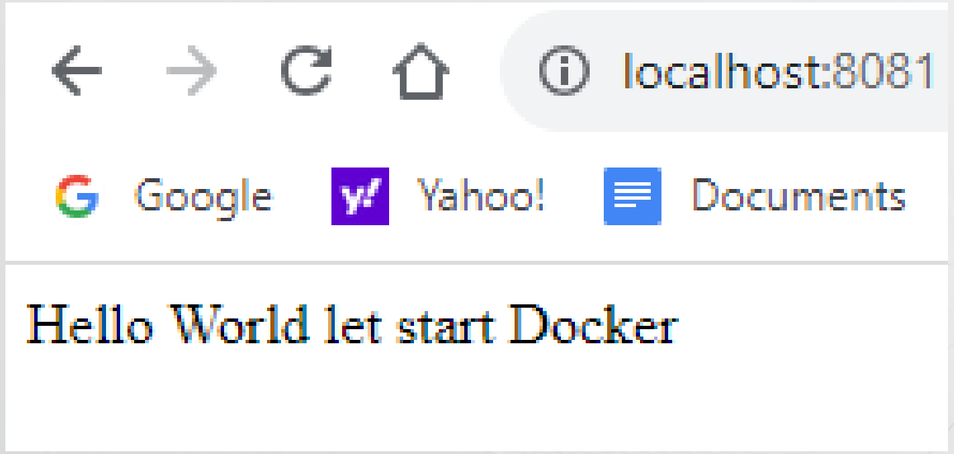
BUILDING YOUR APPLICATION

After assigning a port we should get the result



Let's see it running.

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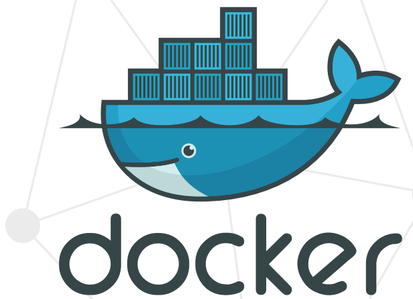
TRIVA QUESTION

In Docker:

What is the difference between a Container and an Image?

How does Docker use these concepts to optimize resource usage?



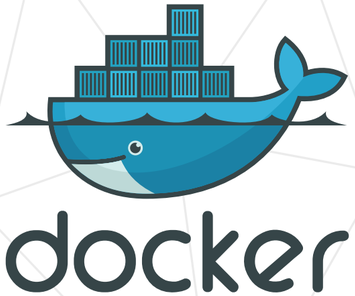
TRIVIA ANSWER

Container vs. Image:

- An image is a snapshot of an environment for an application, containing all its dependencies.
- A container is a running instance of an image.

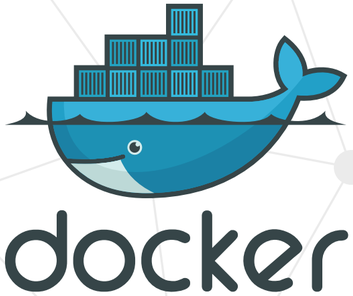
Resource Optimization:

- Docker optimizes resource usage by sharing images and layers.
- Containers start quickly and are isolated, ensuring efficient resource utilization.



CODING EXERCISE

Create the Hello World in Spring Boot application and add it to Docker



THANK YOU

Bitty Byte

We will see you Thursday