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Experiment No. 2.1

Student Name: Atharv Singh **UID: 22MCC20007**
Branch: MCA CC & Devops **Section/Group – 22MCD - 1/A**
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Subject Name: Containerization with Docker **Subject Code: - 22CAH-742**

1. Aims/Overview for the practical:

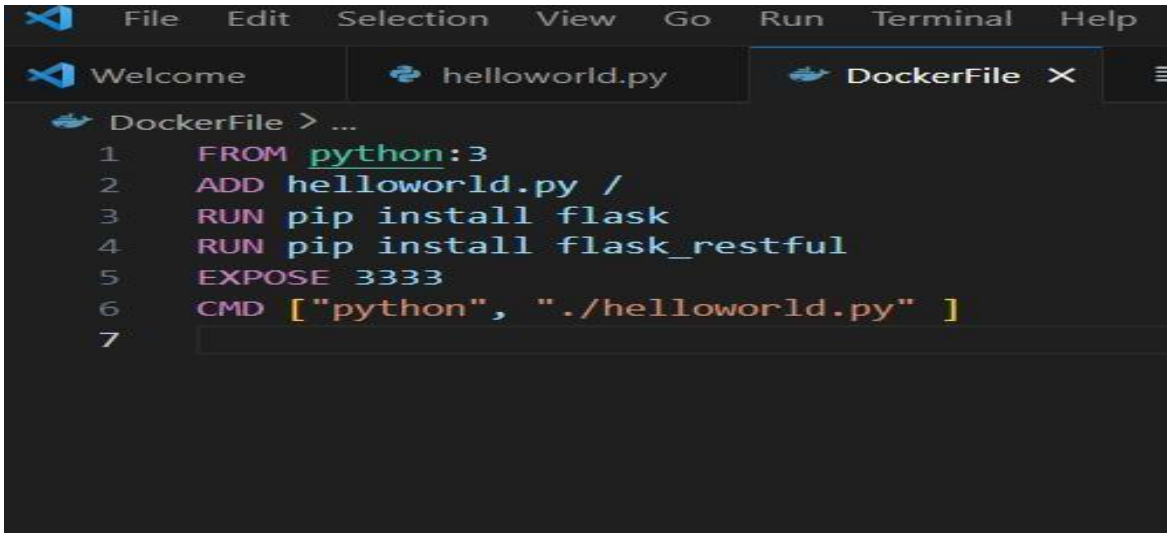
Create one Dockerfile. Using this Dockerfile create and build and image.

2. Steps for experiment/practical:

Step 1: Open the installed **Docker Desktop** in your local machine.

Step 2: Now, you need to open the **Visual Studio Code** while make sure that the Docker Desktop must be ON in background.

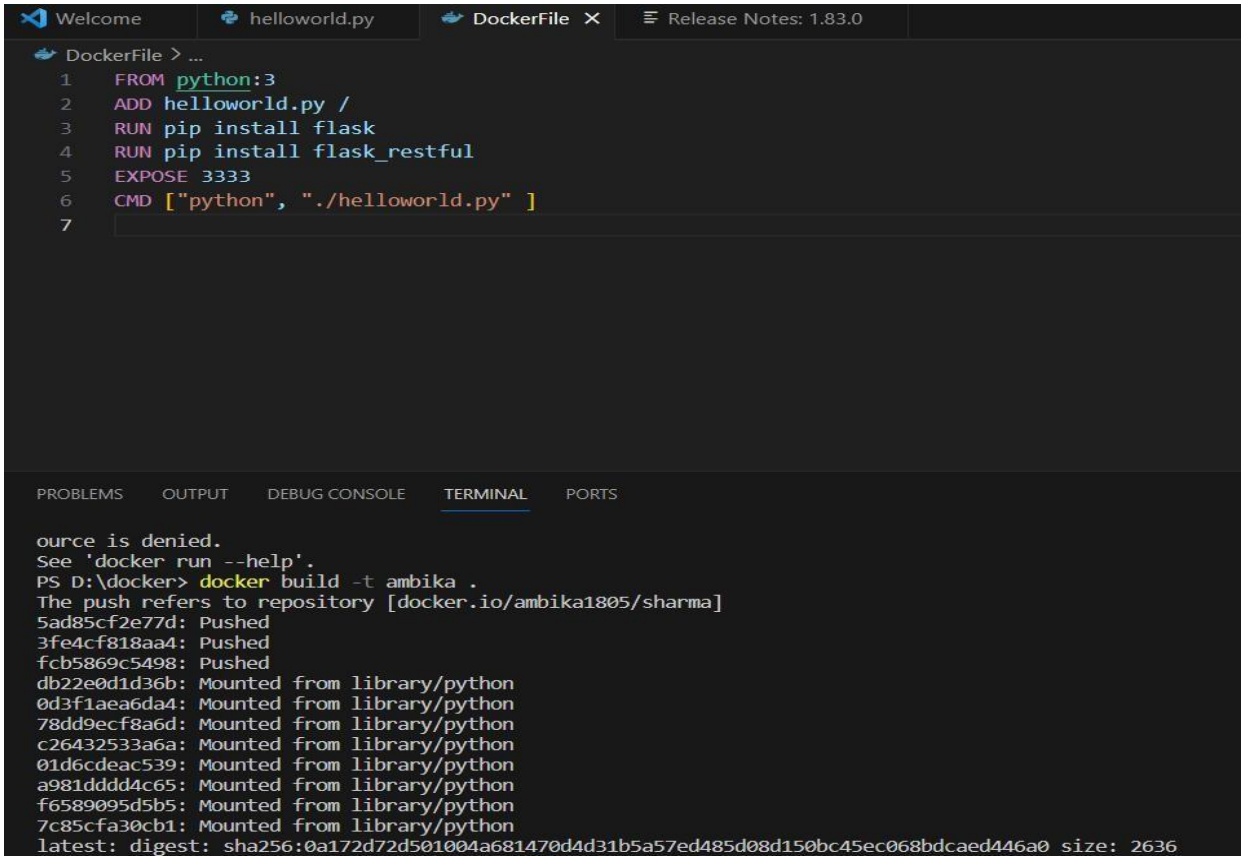
Step 3: Now the task is to **create one Dockerfile** and **one python file** in Visual Studio Code. Make sure that both these files need to be created in separate one folder only. While creating the Dockerfile, use the Predefined Instructions/Commands. Must remember that these commands or instructions should be in **CAPITAL FORM.**
The instructions that you can use are:
FROM: For base image. This command should be on top of the Dockerfile.
COPY: This will copy files from local system. We need to provide source and destination.
ADD: It is similar to COPY but, it provided features to download files from internet.
EXPOSE: To expose ports such as port 8080 for tomcat, port 80 for nginx etc.
WORKDIR: To set the working directory for a container.
CMD: Execute commands but during container creation.
ENTRYPOINT: Similar to CMD, but has higher priority over CMD, first commands will be executed by ENTRYPOINT only.
RUN: To execute commands, it will create a layer in image.



Step 4: In Python file, you have to write all the content that you want to show while running the image that you are creating. And use this python file in Dockerfile while writing the command for CMD.

Step 5: After creating both the files (Dockerfile and Python file), you have to open the terminal so that you can write the command of building the image.

The command to build an image is: docker build –t imagename .



Step 6: If the above command is run successfully, then the image has been created of the given configuration. You can check the created image in Docker Desktop.
Step 7: The command to run an image using CLI is : **docker run imagename**

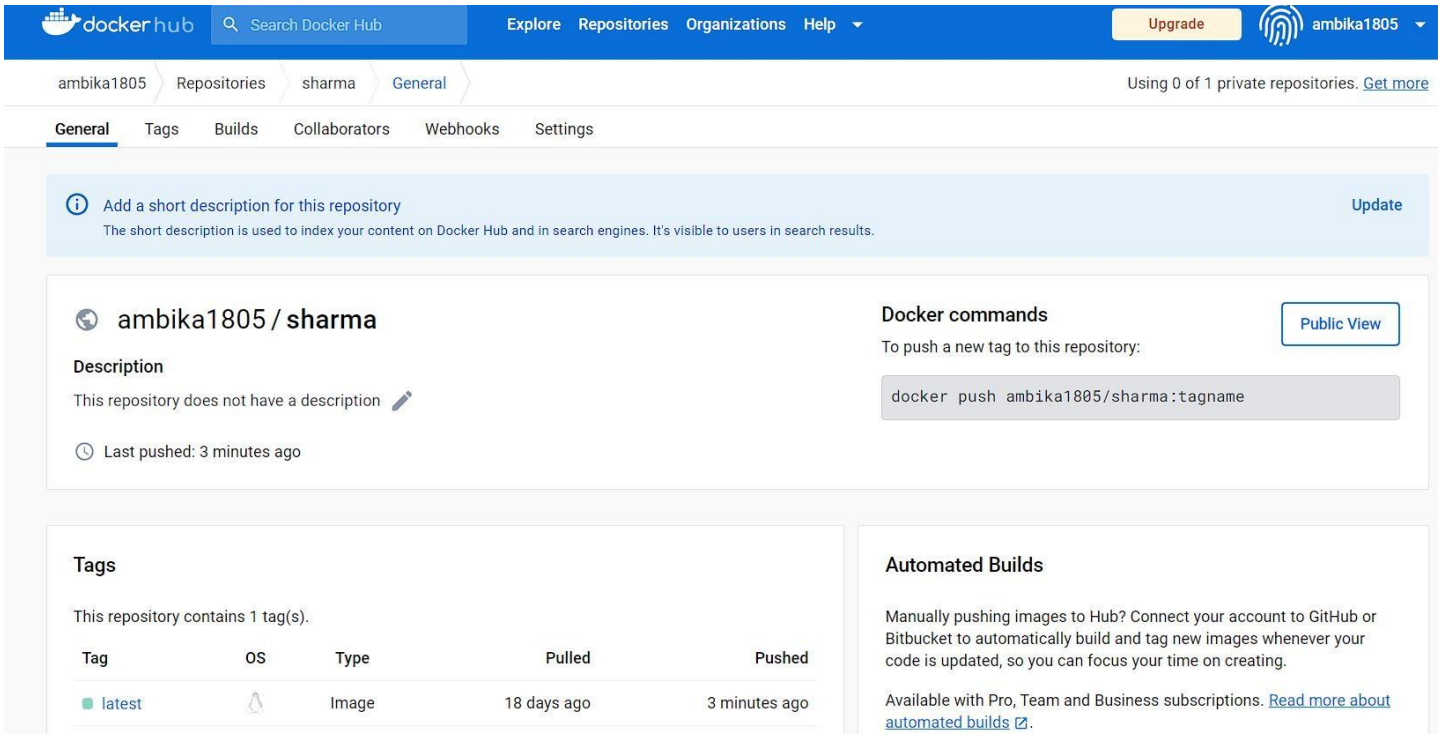
Step 8: Now, the other task is to push this image into Docker Hub. For that you have to give the tag to the image otherwise a default tag is assigned to the image.
Command to give tag to image : docker tag imagename:latest username/tag

Step 9: After assigning the tag to image, you can push this image to Docker Hub successfully.
Command to push the image: docker push username/tagname

```
PS D:\docker> docker run ambika
hello Ambika
PS D:\docker> docker tag ambika:latest ambika1805/sharma
PS D:\docker> docker push ambika1805/sharma
Using default tag: latest
The push refers to repository [docker.io/ambika1805/sharma]
5ad85cf2e77d: Layer already exists
3fe4cf818aa4: Layer already exists
fcb5869c5498: Layer already exists
db22e0d1d36b: Layer already exists
0d3f1aea6da4: Layer already exists
78dd9ecf8a6d: Layer already exists
c26432533a6a: Layer already exists
01d6cdeac539: Layer already exists
a981dddd4c65: Layer already exists
f6589095d5b5: Layer already exists
7c85cfa30cb1: Layer already exists
latest: digest: sha256:0a172d72d501004a681470d4d31b5a57ed485d08d150bc45ec068bdcaed446a0 size: 2636
```

Step 10: If successful, you will notice that the image is pushed to the docker hub with the given tagnameonly.

3. Result/Output/Writing Summary



4. Learning outcomes (What I have learnt):

a) I have learnt to create Dockerfile with proper instructions.

b) I have learnt to build the image from Dockerfile, further learnt to push it into docker hub.