

**OPERATING SYSTEMS REPORT**

**STEPS FOR DOCKERIZING A PROJECT**

**Non CIE Component Report**

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Semester 5

**SUBMITTED BY**

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As part of the Course **Operating Systems– CS51**

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**STEPS TO DOCKERIZE A STUDENT DATABASE MANAGEMENT SYSTEM**

* We create a separate folder called MySQL for storing the sql file and the Dockerfile.
* In the MySQL directory, we create a Dockerfile which contains the following commands:

//Build an image starting from mysql:8 and python:3.9

FROM mysql:8

FROM python:3.9

// Setting the working directory to student\_management

WORKDIR /student\_management

// Adding the folder to the current directory

ADD . /student\_management/

// Installing the requirements

RUN pip install mysql-connector-python

RUN pip install -r requirements.txt

CMD ["python","main.py"]

// Connecting to SQL database

ENV MYSQL\_ROOT\_PASSWORD pass

COPY ./data.sql /docker-entrypoint-initdb.d/data.sql

* We create a docker-compose.yml file in the same directory and type the following code:

version: "3.9"

services:

database:

build: .

ports:

- "3306:3306"

This specifies the version of python and port no of SQL server.

* We open a terminal and enter the following commands:

1. docker-compose build: This is used to create the image in docker hub.
2. docker images: To see the build image.
3. docker exec -it 7630debedd27 /bin/bash: This command is used to create a new container. The command runs the docker file having port ‘8080’ and we provide the container id.
4. docker container ls: To list the containers created.
5. docker-compose up: To aggregate all the containers and to see if our container has been connected to sql.
6. Docker login: This command lets us log in to docker hub.
7. Docker tag osproject dockers/student: To tag whatever image has been downloaded.
8. Docker push dockers/student: To push our image onto docker hub.

* When we login to docker hub website, or if we already have Dockers desktop installed, we find the files that we have pushed. There we type the command:
* Docker pull dockers/student
* Finally, we navigate to localhost:8080 to see where our project is running.