RAMAIAH
Institute of Technology

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

# Operating Systems (OS) - CS51

# Uploading a project file using Docker

## Report

## Semester 5

Submitted by


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## INTRODUCTION:

Docker is an open platform for developing, shipping, and running applications. Docker enables you to separate your applications from your infrastructure so you can deliver software quickly. With Docker, you can manage your infrastructure in the same ways you manage your applications.

Docker is an open source containerization platform. It enables developers to package applications into containers—standardized executable components combining application source code with the operating system (OS) libraries and dependencies required to run that code in any environment.

A Docker container image is a lightweight, standalone, executable package of software that includes everything needed to run an application: code, runtime, system tools, system libraries and settings.

A Docker image is a file used to execute code in a Docker container. Docker images act as a set of instructions to build a Docker container, like a template. Docker images also act as the starting point when using Docker. An image is comparable to a snapshot in virtual machine (VM) environments.

Ubuntu is a Linux distribution based on Debian and composed mostly of free and open-source software.

## Steps involved in uploading the project:

The project files are made in Ubuntu operating system, we have used ‘terminal’ to upload the project files in Docker.

1. First step is to install docker in your Ubuntu system. Therefore, open terminal and make sure that all the software in your system is in latest state by using the command:

   → sudo apt-get update

   Next, type the command to install Docker:

   → sudo apt-get install docker-ce

   Sometimes due to the environment of your particular machine this command may not work and might show an error, in which case use this another command:

→ docker install

This command will give you the commands that can be used on your system to install Docker. In most cases it will give this command to install Docker:

→ sudo apt install docker.io

2. After this install the snap package which is required by docker to function properly.It is a dependency package.

   → sudo snap install docker

   You can check if your docker is successfully installed my checking its version by the command:

   → docker - - version

3. Next we create a text file in our project folder , we named it as ‘Dockerfile’, which includes the text given below inside it.

   → FROM httpd

   → COPY . /user/local/apache2/htdocs/

   We have put our project folder named: website on the desktop as it is much easier to navigate from there.

4. Open new terminal and do root access using command:

   → sudo su

   And enter your user password.

5. After entering root access open your project file location, we had it on Desktop and the file name is ‘website’.

   → cd Desktop/

   → cd website/

6. Now we build Docker image by using the command:

   → docker built -t website .

7. After the ‘Pulling from library/httpd’ and ‘COPY . /user/local/apache2/htdocs/’ is completed successfully you will get a comment saying: Successfully built ‘some value’ and Successfully tagged website:latest; Which means that your image is successfully created and has been assigned to an ID. Check the image details using the command:

   → docker images

8. Now we will run this image so that a container is assigned to it by command:

   → docker run -itd -p 81:81 –name website website

   This will run and then show your Container ID.

9. You can check all the instance that are running using the command:

   → docker ps

   This will show the CONTAINER ID, IMAGE ,COMMAND,STATUS,PORTS and NAMES of the running instances. In this project's case it shows website, 81->81/tcp, website in IMAGE, PORTS, NAMES respectively other values may vary depending on the PC you work on.

10. Next, Open your browser and go to Docker Hub. Register or Login. After this go back to the 'terminal' and type the command:

    → docker login

    Type your user name and password for Docker Hub and you will get a prompt saying 'Login Succeeded'.

11. Now write the command to push the tag:

    → docker tag website Username/website:latest

    Type your Docker Username in place of 'Username' above.

12. Insert the command:

    → docker image

    It will show you a new repository as your Username/Image that you have input.

13. Login once again just to make sure you are logged in or not.

    → docker login

    It will prompt Authenticating with existing credentials… and you will login again.

14. Now, we are going to push our project which is a repository itself.

    → docker push Username/website:latest

    It will prepare to push and mount all the library/httpd. And after it is done, it will show the digest and size.

    You have successfully uploaded the project. Go to Docker Hub and login and the video can be found in the Repositories.