



Vidyavardhini's College of Engineering & Technology

Department of Computer Science and Engineering (Data Science)

Course: SBL: Cloud Computing

Course code: CSL605

Year: TE SEM: VI

| |
|----------------------|
| Experiment No. |
| AIM:- |
| Name: |
| Roll Number: |
| Date of Performance: |
| Date of Submission: |

Evaluation

| Performance Indicator | Max. Marks | Marks Obtained |
|-------------------------------------|------------|----------------|
| Performance | 5 | |
| Understanding | 5 | |
| Journal work and timely submission. | 10 | |
| Total | 20 | |

| Performance Indicator | Exceed Expectations (EE) | Meet Expectations (ME) | Below Expectations (BE) |
|-------------------------------------|-----------------------------|---------------------------|----------------------------|
| Performance | 5 | 3 | 2 |
| Understanding | 5 | 3 | 2 |
| Journal work and timely submission. | 10 | 8 | 4 |

Checked by

Name of Faculty : Ichhanshu Jaiswal

Signature :

Date :

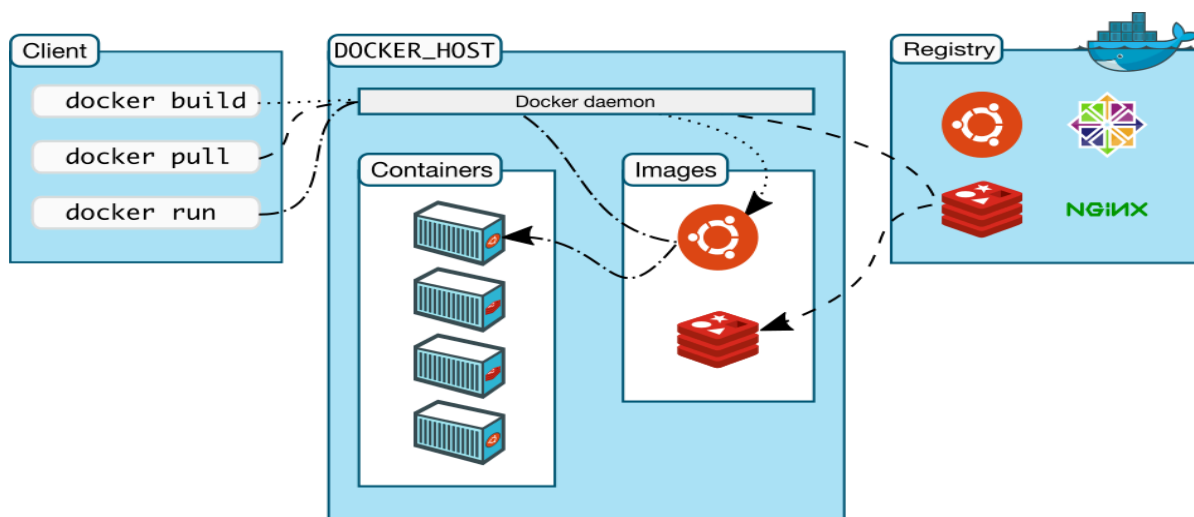


Experiment No. 9

Aim: To study and implement containerization using Docker

Theory:

- Docker is an open container management platform.
- It is a software platform for developing, shipping, and running applications based on containers --- small and lightweight execution environments that make shared use of the operating system kernel and run in isolation from one another.
- Docker enables you to separate your applications from your infrastructure so you can deliver software quickly.



Containers isolate application environments from one another, and only share the underlying OS kernel. Containers are an abstraction at the app layer that packages code and dependencies together.

By default, a container is relatively well isolated from other containers and its host machine. You can control how isolated a container's network, storage, or other underlying subsystems are from other containers or from the host machine.

Multiple containers can run on the same machine and share the OS kernel with other containers, each running as isolated processes in user space. Containers take up less space than VMs (container images are typically tens of MBs in size), can handle more applications and require fewer VMs and Operating systems.



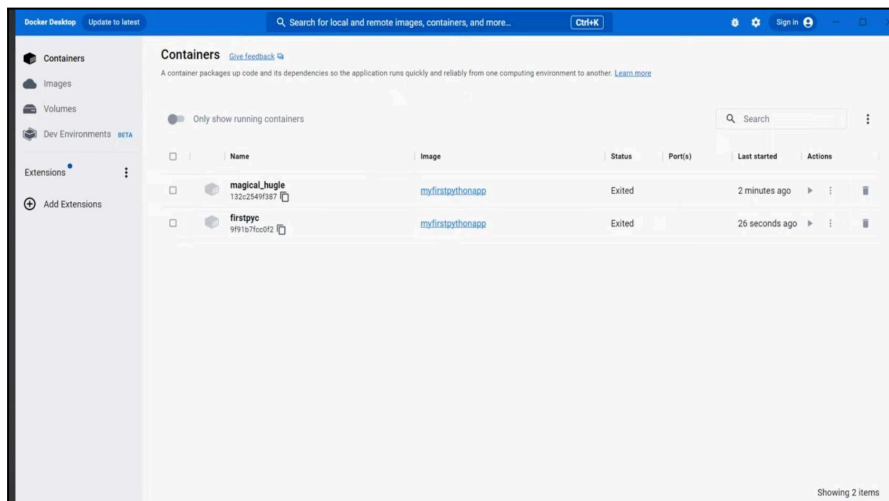
Vidyavardhini's College of Engineering & Technology

Department of Computer Science and Engineering (Data Science)

Output:

```
python-image > app.py
1 import os
2 print("This is my first image.")
3 print("Current Dir is: ",os.getcwd())
```

```
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 31B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:latest
=> [internal] load build context
=> => transferring context: 148B
=> [1/3] FROM docker.io/library/python
=> CACHED [2/3] WORKDIR /app
=> [3/3] COPY . /app
=> exporting to image
=> => exporting layers
=> => writing image sha256:2f28ea7cb846a6c151061f2136283f3feede474c3c9206cab02e6c4549f6379
=> => naming to docker.io/library/myfirstpythonapp
PS D:\15_Docker_Tutorial\python-image> docker run --name firstpyc myfirstpythonapp
This is my first image.
Current Dir is: /app
PS D:\15_Docker_Tutorial\python-image>
```





Vidyavardhini's College of Engineering & Technology

Department of Computer Science and Engineering (Data Science)

```
python-image > app.py
1 import os
2 print("This is my first image.")
3 print("Current Dir is: ",os.getcwd())
4 print(os.listdir())
5

> PS D:\15_Docker_Tutorial\python-image> docker build -t secondpyc .
=> transferring dockerfile: 31B
=> [internal] load .dockerignore
=> transferring context: 2B
=> [internal] load metadata for docker.io/library/python:latest
=> [1/3] FROM docker.io/library/python
=> [internal] load build context
=> transferring context: 212B
=> CACHED [2/3] WORKDIR /app
=> [3/3] COPY . /app
=> exporting to image
=> exporting layers
=> writing image sha256:67a9d7dea78c2d85a9a30a29054b5fb664f79a2d5c34c149531106970f29b9a8
=> naming to docker.io/library/secondpyc
[+] Building 0.0s
[+] secondpyc:latest
PS D:\15_Docker_Tutorial\python-image> docker run --name secondpyc listimage
This is my first image.
Current Dir is: /app
['Dockerfile', 'hello.txt', 'app.py']
PS D:\15_Docker_Tutorial\python-image>
```

Conclusion: Comment on the applications of Docker