

DevOps Assignment : 3 Docker

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Q.1. Create a directory by name myapp. Go to the directory. Create a simple java program by name calc.java which will take 2 numbers from the user and display the result of addition and multiplication. Create a file by name Dockerfile. Type following in the file.

```
FROM ubuntu
RUN apt update -y
RUN apt install default-jre -y
RUN mkdir /myapp
COPY calc.java /myapp/
CMD [ "/bin/java" , "/myapp/calc.java" ]
```

Save the file.

Now create image of your application by using following command.

```
docker build -t myapp . # Don't forget dot at the end.
```

Once the process finishes. Check if the image is created using command - docker images.

Now run the container using your image.

```
docker run --rm -ti myapp
```

```
dai@pgdai: ~/Desktop/myapp
(base) dai@pgdai:~/Desktop$ mkdir myapp
(base) dai@pgdai:~/Desktop$ cd myapp/
(base) dai@pgdai:~/Desktop/myapp$ nano calc.java
(base) dai@pgdai:~/Desktop/myapp$ cat calc.java
import java.util.Scanner;

public class calc {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter the first number: ");
        int num1 = scanner.nextInt();
        System.out.println("Enter the second number: ");
        int num2 = scanner.nextInt();

        int sum = num1 + num2;
        int product = num1 * num2;

        System.out.println("Sum: " + sum);
        System.out.println("Product: " + product);
    }
}
(base) dai@pgdai:~/Desktop/myapp$ vim Dockerfile
```

```
dai@pgdai: ~/Desktop/myapp
/bin/bash: line 1: javac: command not found
(base) dai@pgdai:~/Desktop/myapp$ vim Dockerfile
(base) dai@pgdai:~/Desktop/myapp$ docker build -t myapp .

[+] Building 255.3s (10/10) FINISHED                                docker:default
=> [internal] load build definition from Dockerfile                 0.1s
=> => transferring dockerfile: 210B                                0.0s
=> [internal] load metadata for docker.io/library/ubuntu:latest    0.0s
=> [internal] load .dockerignore                                    0.1s
=> => transferring context: 2B                                       0.0s
=> [1/5] FROM docker.io/library/ubuntu:latest                     0.0s
=> [internal] load build context                                    0.2s
=> => transferring context: 31B                                       0.0s
=> CACHED [2/5] RUN apt update -y                                   0.0s
=> [3/5] RUN apt install default-jdk -y                           245.1s
=> [4/5] RUN mkdir /myapp                                          1.6s
=> [5/5] COPY calc.java /myapp/                                    1.2s
=> exporting to image                                              6.0s
=> => exporting layers                                              5.6s
=> => writing image sha256:4f3b20f481fc3758ce7a6372ed34c9784e7d4bc859def 0.0s
=> => naming to docker.io/library/myapp                             0.1s

(base) dai@pgdai:~/Desktop/myapp$ docker run --rm -ti myapp

Enter the first number:
1
Enter the second number:
2
Sum: 3
Product: 2
(base) dai@pgdai:~/Desktop/myapp$
```

Q.2. Create a directory. Go to that directory. Create your index.html file that will display your name and PRN number. Create a dockerfile as in question1. Add following to the file.

```
FROM httpd
COPY index.html /usr/local/apache2/htdocs/
```

Save the file. Use docker build command to build your application image.
docker build -t webapp1 . # Don't forget dot at the end.

Now run the container using above image and verify.

```
docker run --name web3 -p 8000:80 -d webapp1
```

Now go to the browser and check by typing <http://localhost:8000>

```
dai@pgdai: ~/Desktop/webapp
(base) dai@pgdai:~/Desktop$ mkdir webapp
(base) dai@pgdai:~/Desktop$ cd webapp/
(base) dai@pgdai:~/Desktop/webapp$ vim index.html
(base) dai@pgdai:~/Desktop/webapp$ cat index.html
<html><body><h1>
Nmae : Rajesh Singh
</br>
PRN : 240840128028
</h1></body></html>

(base) dai@pgdai:~/Desktop/webapp$ vim Dockerfile
(base) dai@pgdai:~/Desktop/webapp$ cat Dockerfile
FROM httpd
COPY index.html /usr/local/apache2/htdocs/
(base) dai@pgdai:~/Desktop/webapp$ docker build -t webapp1 .
[+] Building 3.2s (7/7) FINISHED
=> [internal] load build definition from Dockerfile 0.1s
=> => transferring dockerfile: 95B 0.0s
=> [internal] load metadata for docker.io/library/httpd:latest 0.0s
=> [internal] load .dockerignore 0.1s
=> => transferring context: 2B 0.0s
=> [internal] load build context 0.3s
=> => transferring context: 120B 0.0s
=> CACHED [1/2] FROM docker.io/library/httpd:latest 0.0s
=> [2/2] COPY index.html /usr/local/apache2/htdocs/ 1.0s
=> exporting to image 0.8s
=> => exporting layers 0.5s
=> => writing image sha256:0159c70ac0972fe4071e74e7199e5905bfd54a92cf24c32c19828a2e1647051b 0.0s
=> => naming to docker.io/library/webapp1 0.1s
53820be2d119e73cdacf643f6fa5b65aa65a52b825895d6a32dc73c93417d7b2
(base) dai@pgdai:~/Desktop/webapp$ docker run --name web3 -p 8000:80 -d webapp1
(base) dai@pgdai:~/Desktop/webapp$
```

