EX:10 Install Hadoop single node cluster and run simple applications like wordcount.

IN cmd Prompt:

- ssh-keygen
- paste ssh id

IN DOCKER COMMAD:

- docker pull sequenceiq/hadoop-docker:latest
- docker run -it -p 50070:50070 -p 8088:8088 -p 8042:8042 sequenceiq/hadoop-docker:latest /etc/bootstrap.sh -bash
- cd usr/local/hadoop/
- vi input/data.txt
- bin/hadoop fs -mkdir /input
- bin/hadoop fs -put input/data.txt /input
- bin/hadoop jar share/hadoop/mapreduce/hadoop-mapreduce-example-2.7.0.jar wordcount /input/data.txt /output
- bin/hdfs dfs -cat /output/*

EX:9 Implement PaaS-Mobile sensor based IoT application hosted via PaaS environment

```
#define BLYNK_TEMPLATE_ID "TMPL3gzv7xkjV"
#define BLYNK_TEMPLATE_NAME "PAAS"
#define BLYNK_AUTH_TOKEN "aJ_KsN6wGmbZ7s2GnBc1opWwCuKdp4zS"
#define BLYNK_PRINT Serial
#define LED 26
#include <WiFi.h>
#include <BlynkSimpleEsp32.h>
#include <DHTesp.h>

char auth[] = BLYNK_AUTH_TOKEN ;

char ssid[] = "Wokwi-GUEST";
char pass[] = "";

const int DHT_PIN = 15;
DHTesp dht;

BlynkTimer timer;



void sendSensor()
{
 TempAndHumidity  data = dht.getTempAndHumidity();



Serial.print("Temperature: ");
Serial.print(data.temperature);
Serial.println(" C ");
Serial.print("Humidity: ");
Serial.print(data.humidity);
Serial.println(" % ");

Blynk.virtualWrite(V0, data.temperature);
Blynk.virtualWrite(V1, data.humidity);
}
```

```
int SW_State=0;

BLYNK_WRITE (V2)
{
  SW_State = param.asInt();
  if (SW_State == 1)
  {
    digitalWrite(LED, HIGH);
    Serial.println("LAMP ON");
    Blynk.virtualWrite(V1, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
    Serial.println("LAMP OFF");
    Blynk.virtualWrite(V1, LOW);
  }
}

void setup()
{
// Debug console
Serial.begin(115200);
dht.setup(DHT_PIN, DHTesp::DHT22);

Blynk.begin(auth, ssid, pass);
timer.setInterval(1000, sendSensor);
pinMode(LED, OUTPUT);
}
void loop()
{

Blynk.run();
timer.run();
}
```

- gcloud auth login
- gcloud projects list
- gcloud config set project project-ID
- google-cloud-sdk\bin\dev_appserver.py " folder_path"
- gcloud projects create project_name

EX:4 Install Google App Engine. Create hello world app and other web applications using python/java

- gcloud auth login
- gcloud projects create project_name
- gcloud projects list
- gcloud config set project project_ID
- gcloud app create
- 6
- gcloud app deploy
- git clone https://github.com/GoogleCloudPlatform/python-docs-sample
- cd python-docs-samples/appengine/standard/hello_world/
- dev_appserver.py app.yaml

ex 5,ex 7

```
#!/bin/bash
yum update -y
yum -y install httpd
systemctl enable httpd
systemctl start httpd
echo '<html><h1>Hello World!</h1></html>' > /var/www/html/index.html
```

ex 6

```
{
   "Version":"2012-10-17",
   "Statement":[
      {
         "Sid":"PublicReadGetObject",
         "Effect":"Allow",
         "Principal":"*",
```

```
        "Action":[
           "s3:GetObject"
        ],
        "Resource":[
           "arn:aws:s3:::example-bucket/*"
        ]
      }
   ]
}
```