**Assignment 3 ontime flight performances:**

**Data steps completd in hdfs**

mkdir AirlinesOntimeAnalysis

hdfs dfs -mkdir AirlinesOntimeAnalysis

hdfs dfs -put AirlinesOntimeAnalysis

bzip2 -dk 2003.csv.bz2

bzip2 -dk 2004.csv.bz2

bzip2 -dk 2005.csv.bz2

hdfs dfs -mkdir AirlinesOntimeAnalysis

hdfs dfs -put AirlinesOntimeAnalysis

hdfs dfs -put 2003.csv AirlinesOntimeAnalysis

hdfs dfs -put 2004.csv AirlinesOntimeAnalysis

hdfs dfs -put 2005.csv AirlinesOntimeAnalysis

hdfs dfs -mkdir rawdata/airline/flights

hdfs dfs -mkdir rawdata/airline/planeinfo

hdfs dfs -mkdir rawdata/airline/airport

hdfs dfs -mkdir rawdata/airline/carriers

hdfs dfs -cp AirlinesOntimeAnalysis/airports.csv rawdata/airline/airport

hdfs dfs -cp AirlinesOntimeAnalysis/carriers.csv rawdata/airline/carriers

hdfs dfs -cp AirlinesOntimeAnalysis/plane-data.csv rawdata/airline/planeinfo

hdfs dfs -cp AirlinesOntimeAnalysis/2003.csv rawdata/airline/flights

hdfs dfs -cp AirlinesOntimeAnalysis/2004.csv rawdata/airline/flights

hdfs dfs -cp AirlinesOntimeAnalysis/2005.csv rawdata/airline/flights

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A screenshot of a computer

Description automatically generated

create database aastha\_airline\_db;

use aastha\_airline\_db;

create EXTERNAL TABLE airports\_stg (iata string,airport string,city string,state string,country string,lat decimal,long decimal)

ROW FORMAT DELIMITED FIELDS TERMINATED BY ',' location '/user/mavricbdhoct05/rawdata/airline/airport';

create EXTERNAL TABLE carrier\_stg (code string,description string)

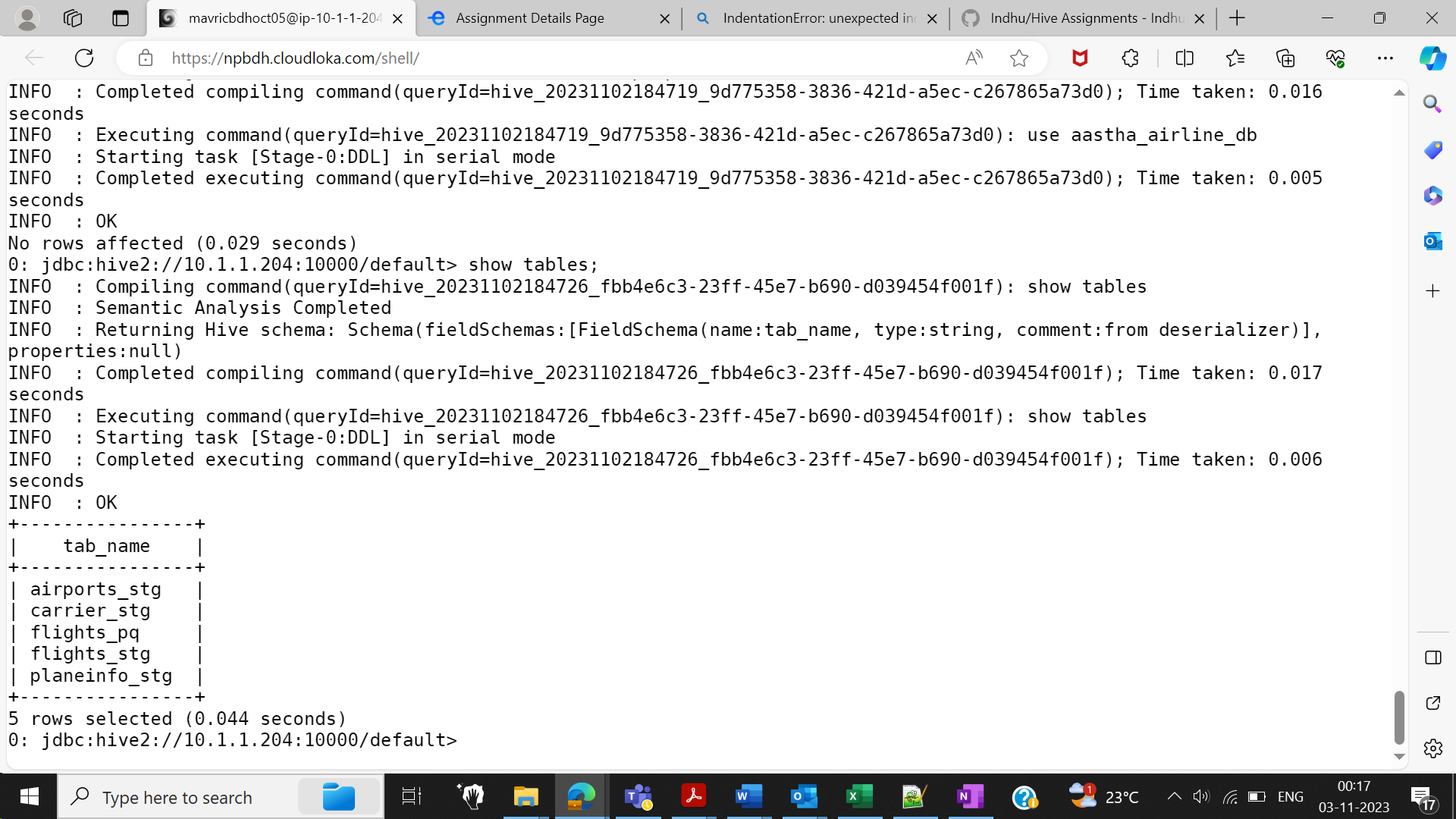
ROW FORMAT DELIMITED FIELDS TERMINATED BY ',' location '/user/mavricbdhoct05/rawdata/airline/carriers';

create EXTERNAL TABLE planeinfo\_stg (tailNum string, type string, manufacturer string, issue\_date string, model string, status string,aircraft\_type string , engine\_type string , year int)

ROW FORMAT DELIMITED FIELDS TERMINATED BY ',' location '/user/mavricbdhoct05/rawdata/airline/planeinfo';

create EXTERNAL TABLE flights\_stg ( Year int ,Month int,DayofMonth int,DayOfWeek int, DepTime int,CRSDepTime int,ArrTime int ,CRSArrTime int, UniqueCarrier string, FlightNum string,TailNum string, ActualElapsedTime int, CRSElapsedTime int, AirTime int, ArrDelay int, DepDelay int, Origin string, Dest string, Distance int, TaxiIn string, TaxiOut string, Cancelled string,CancellationCode string, Diverted string, CarrierDelay int, WeatherDelay int, NASDelay int,SecurityDelay int,LateAircraftDelay int)

ROW FORMAT DELIMITED FIELDS TERMINATED BY ',' location '/user/mavricbdhoct05/rawdata/airline/flights';



Select \* from airports\_stg limit 10;

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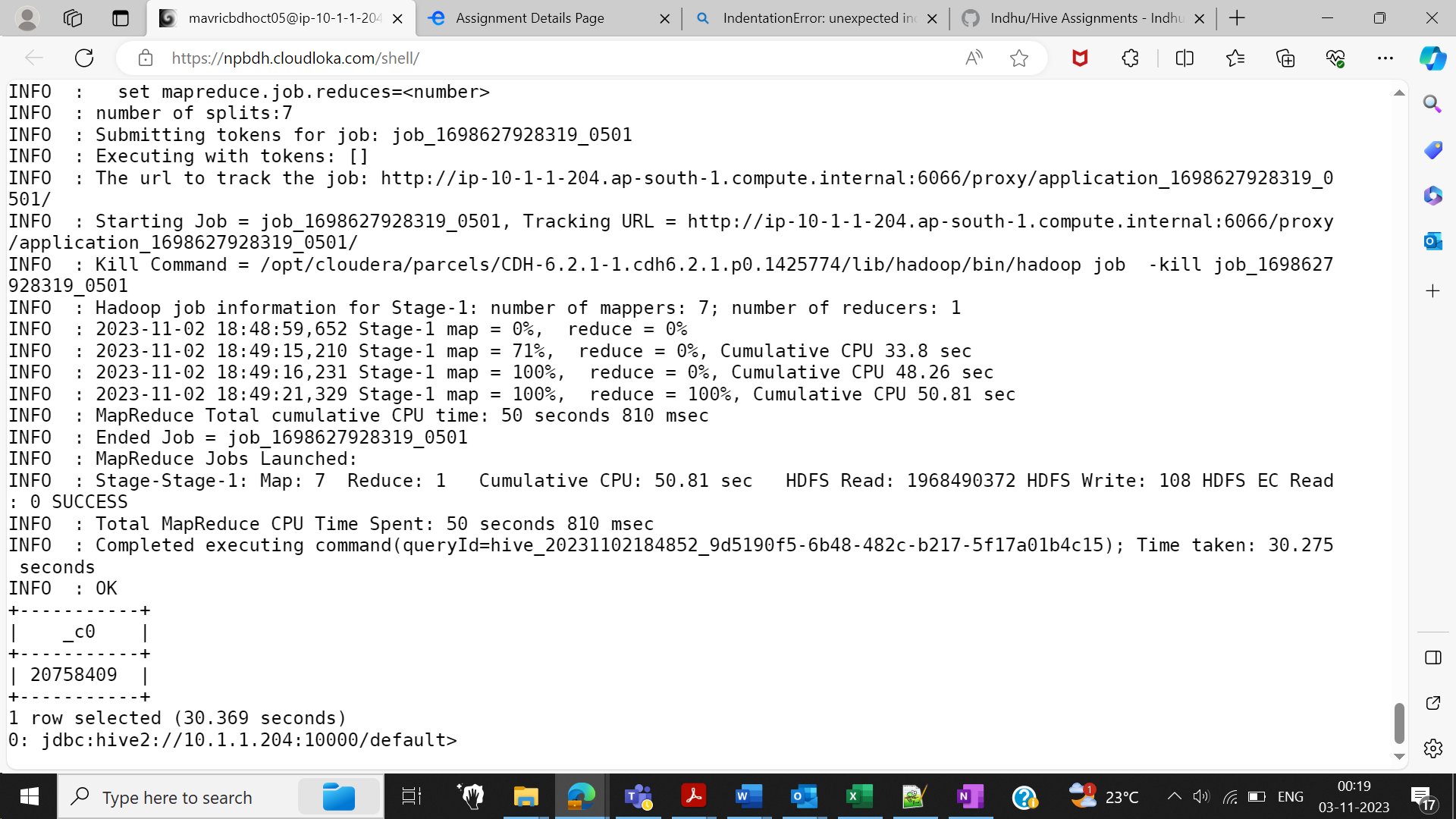
Description automatically generated

Select \* from carrier\_stg limit 10;

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Description automatically generated

Select count(\*) from flights\_stg ;



**What is the average arrival delay and average departure delay in each month of the year 2004?**

select Month,avg(ArrDelay) as arrival\_delay, avg(DepDelay) as depature\_delay from flights\_stg where year=2004 group by month;

Time taken(57.077 seconds)

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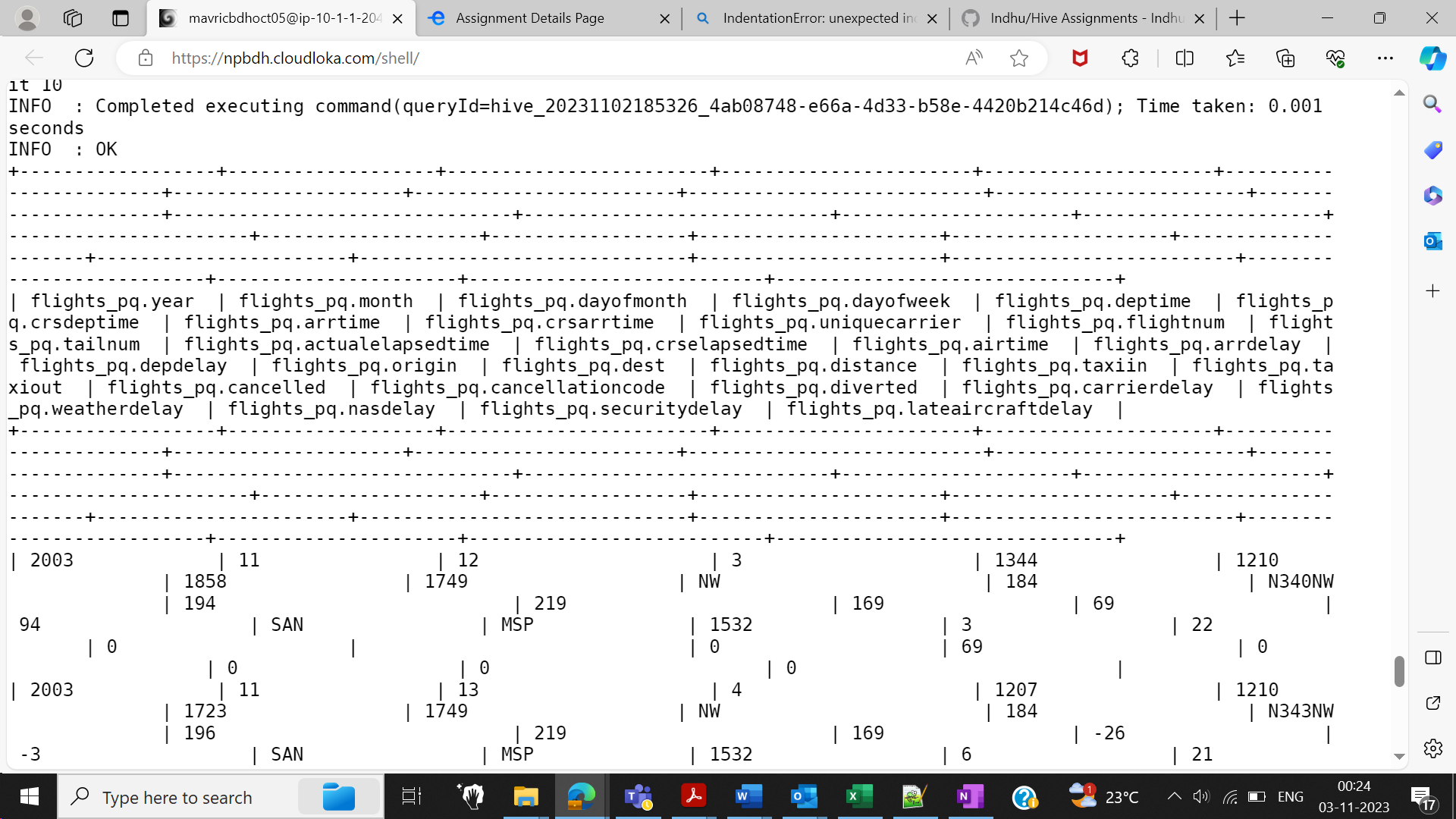
Description automatically generated

**PARQUET External TABLE CREATION:**

create EXTERNAL TABLE flights\_pq ( Year int ,Month int,DayofMonth int,DayOfWeek int,DepTime int,CRSDepTime int,ArrTime int ,CRSArrTime int, UniqueCarrier string, FlightNum string,TailNum string, ActualElapsedTime int, CRSElapsedTime int, AirTime int, ArrDelay int, DepDelay int, Origin string, Dest string, Distance int, TaxiIn string, TaxiOut string, Cancelled string,CancellationCode string, Diverted string, CarrierDelay int, WeatherDelay int,NASDelay int,SecurityDelay int,LateAircraftDelay int) STORED AS PARQUET location'/user/mavricbdhoct08/output/airline/pq\_flights';

insert overwrite table flights\_pq select \* from flights\_stg;

**select \* from flights\_pq limit 10;**



select Month,avg(ArrDelay) as arrival\_delay, avg(DepDelay) as depature\_delay from flights\_pq where year=2004 group by month;

Time Taken (35.239 seconds)

