Data Science with Python Career Program

Assignment – Advance SQL [Major]

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Assignment - SQL [Major]

Q1) Create a table "Station" to store information about weather observation stations:

ID	Number	Primary key
CITY	CHAR(20)	
STATE	CHAR(2)	
LAT_N	Number	
LONG_W	Number	

ANS.1:-

CREATE TABLE STATION (ID NUMBER PRIMARY KEY, CITY CHAR(20), STATE CHAR(2), LAT_N REAL, LONG_W REAL);

```
SQL Worksheet

1 CREATE TABLE STATION
2 (ID NUMBER PRIMARY KEY,
3 CITY CHAR(20),
4 STATE CHAR(2),
5 LAT_N REAL,
6 LONG_W REAL);

Table created.
```

Q2) Insert the following records into the table:

ID	CITY	STATE	LAT_N	LONG_W
13	PHOENIX	AZ	33	112
44	DENVER	CO	40	105
66	CARIBOU	ME	47	68



ANS.2:-

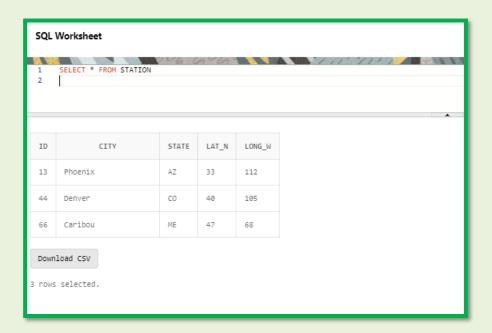
INSERT INTO STATION VALUES (13,'Phoenix','AZ',33,112); INSERT INTO STATION VALUES (44,'Denver','CO',40,105); INSERT INTO STATION VALUES (66,'Caribou','ME',47,68);

```
Insert into station values(13, 'Phoenix', 'AZ', 33, 112);
INSERT INTO STATION values(44, 'Denver', 'CO', 40, 105);
INSERT INTO STATION values(66, 'Caribou', 'ME', 47, 68);

1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
```

Q3) Execute a query to look at table "STATION" in undefined order:

ANS.3:- SELECT * FROM STATION

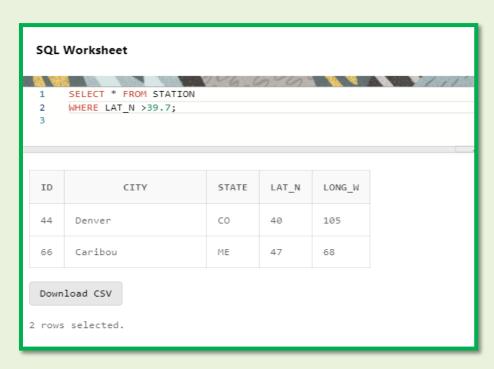




Q4) Execute a query to select Northern stations (Northern latitude >39.7):

ANS.4:-

SELECT * FROM STATION WHERE LAT_N>39.7;



Q5) Create another table, "STATS", to store normalized temperature and precipitation data:

Column	Data type	Remark	
ID	Number	must match some STATION table ID(soname & location will be known).	
MONTH	Number	Range between 1 and12	
TEMP_F	Number	in Fahrenheit degrees,Range between -80 and 150	
RAIN_I	Number	in inches, Range between 0 and 100	

(Note:-There will be no Duplicate ID and MONTH combination.)



ANS.5:-

CREATE TABLE STATS
(ID NUMBER REFERENCES STATION(ID),
MONTH NUMBER CHECK(MONTH BETWEEN 1 AND 12),
TEMP_F REAL CHECK(TEMP_F BETWEEN -80 AND 150),
RAIN_I REAL CHECK(RAIN_I BETWEEN 0 AND 100),
PRIMARY KEY (ID, MONTH));

```
I CREATE TABLE STATS
2 (ID NUMBER REFERENCES STATION(ID),
3 MONTH NUMBER CHECK(MONTH BETWEEN 1 AND 12),
4 TEMP_F REAL CHECK(TEMP_F BETWEEN -80 AND 150),
5 RAIN_I REAL CHECK(RAIN_I BETWEEN 0 AND 100),
6 PRIMARY KEY(ID, MONTH));

Table created.
```

Q6) Populate the table STATS with some statistics for January and July:

ID	MONTH	TEMP_F	RAIN_I
13	1	57.4	.31
13	7	91.7	5.15
44	1	27.3	.18
44	7	74.8	2.11
66	1	6.7	2.1
66	7	65.8	4.52



ANS.6:-

```
INSERT INTO STATS VALUES(13, 1, 57.4, 0.31);
INSERT INTO STATS VALUES(13, 7, 91.7, 5.15);
INSERT INTO STATS VALUES(44, 1, 27.3, 0.18);
INSERT INTO STATS VALUES(44, 7, 74.8, 2.11);
INSERT INTO STATS VALUES(66, 1, 6.7, 2.10);
INSERT INTO STATS VALUES(66, 7, 65.8, 4.52);
```

```
I INSERT INTO STATS VALUES(13, 1, 57.4, 0.31);
2 INSERT INTO STATS VALUES(13, 7, 91.7, 5.15);
3 INSERT INTO STATS VALUES(44, 1, 27.3, 0.18);
4 INSERT INTO STATS VALUES(44, 7, 74.8, 2.11);
5 INSERT INTO STATS VALUES(66, 1, 6.7, 2.10);
6 INSERT INTO STATS VALUES(66, 7, 65.8, 4.52);
7

I row(s) inserted.
1 row(s) inserted.
```

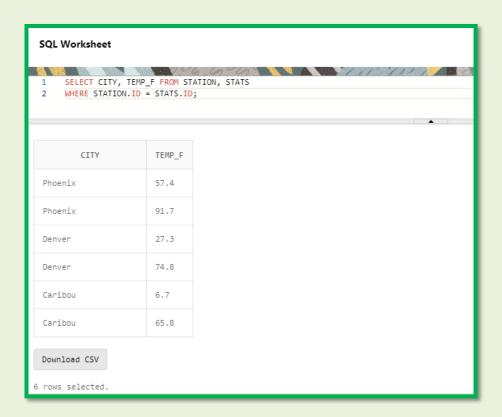
Q7) Execute a query to display temperature stats (from STATS table) for each city (from Station table).

ANS.7:-

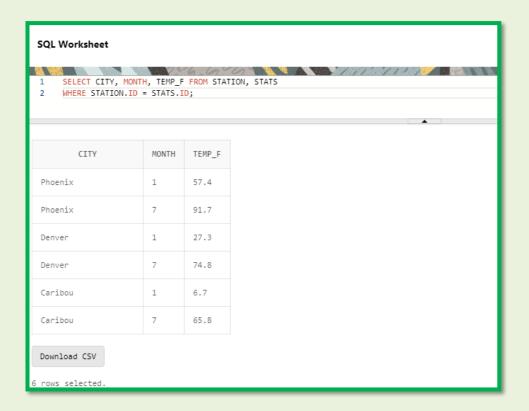
1)Display Temperature in Fahrenheit For each city.

(Temp_F Stands for Temperature in Fahrenheit.)





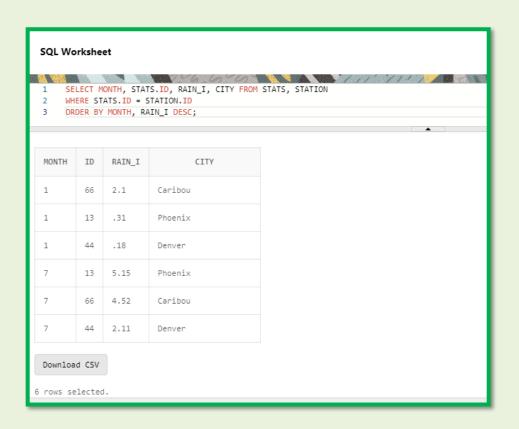
2) Display Temperature in Fahrenheit For each city Monthwise.





Q8) Execute a query to look at the table STATS, ordered by month and greatest rainfall, with columns rearranged. It should also show the corresponding cities.

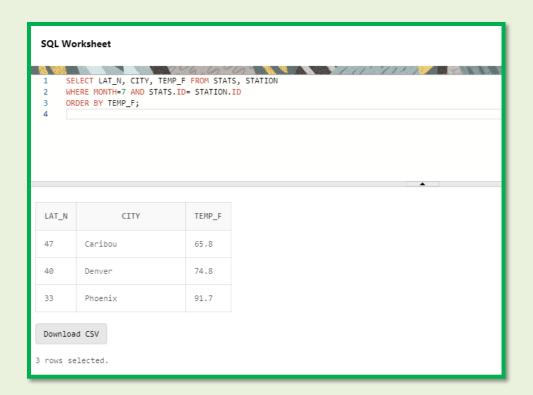
ANS.8:-



Q9) Execute a query to look at temperatures for July from table STATS, lowest temperatures first, picking up city name and latitude:



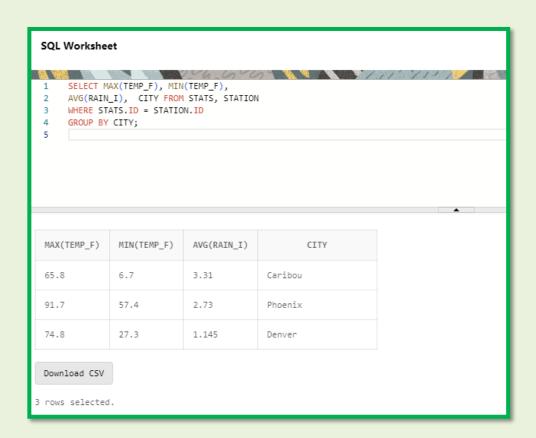
ANS.9:-



Q10) Execute a query to show MAX and MIN temperatures as well as average rainfall for each city.

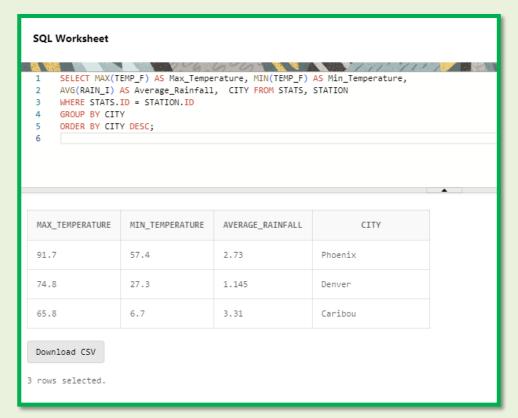


ANS.10:- 1)



1) Max and Min Temperatures as well as Average Rainfall for each city in proper manner.



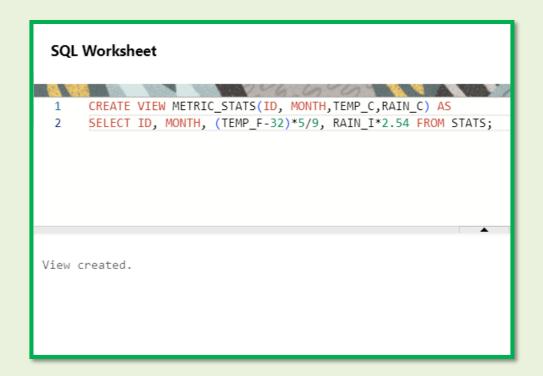


Q11) Execute a query to display each city's monthly temperature in Celcius and rainfall in Centimeter.

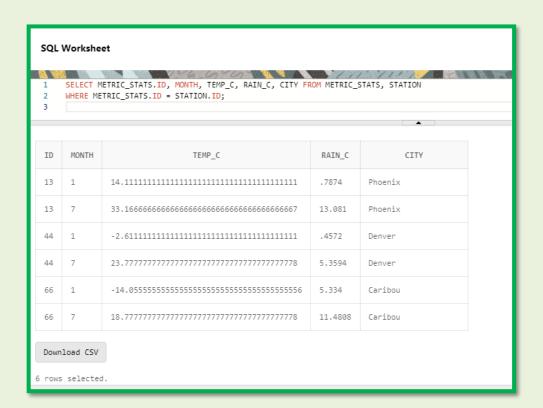
ANS.11:-

1)Create a view (derived table or persistent query) to convert Fahrenheit to Celsius and inches to centimeters.





2) Query to look at Table 'STATS' in metric light(Through the new view).

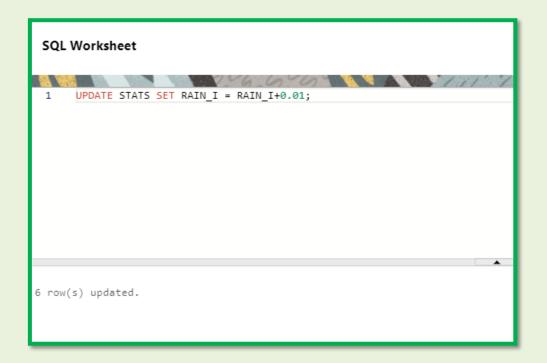




Q12) Update all rows of table STATS to compensate for faulty rain gauges known to read 0.01 inches low.

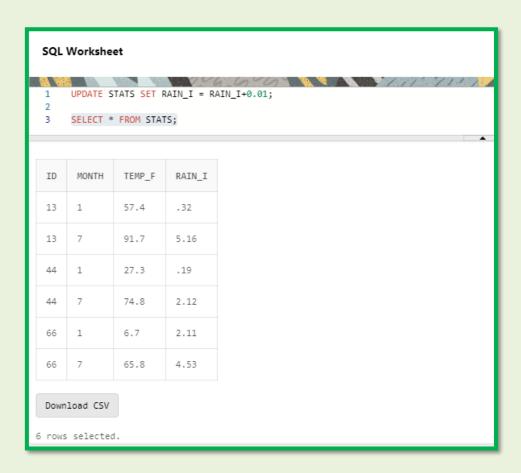
ANS.12:-

1) Update all rows of table 'STATS' to compensate for faulty rain gauges.





2) Now take a look:



Q13) Update Denver's July temperature reading as 74.9:

ANS.13:-

1)Update one row, Denver's July Temperature reading.



```
SQL Worksheet

1  UPDATE STATS SET TEMP_F = 74.9
2  WHERE ID = 44
3  AND MONTH = 7;
4

1 row(s) updated.
```

2)Now take a look:

```
SQL Worksheet
      UPDATE STATS SET TEMP_F = 74.9
     WHERE ID = 44
    AND MONTH = 7;
SELECT * FROM STATS;
       MONTH
                TEMP_F
                          RAIN_I
 13
                57.4
                          .32
                91.7
 44
                27.3
                          .19
 44
                74.9
                          2.12
 66
                65.8
                          4.53
 Download CSV
6 rows selected.
```