SQL (Major)

22-05-23

1. Create a table “Station” to store information about weather observation stations:

Ans.

CREATE TABLE STATION (

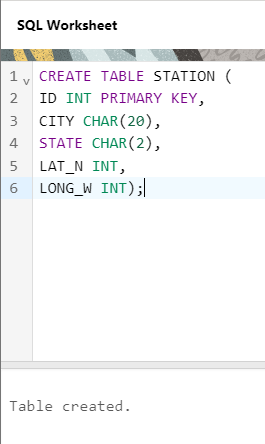
ID INT PRIMARY KEY,

CITY CHAR(20),

STATE CHAR(2),

LAT\_N INT,

LONG\_W INT);



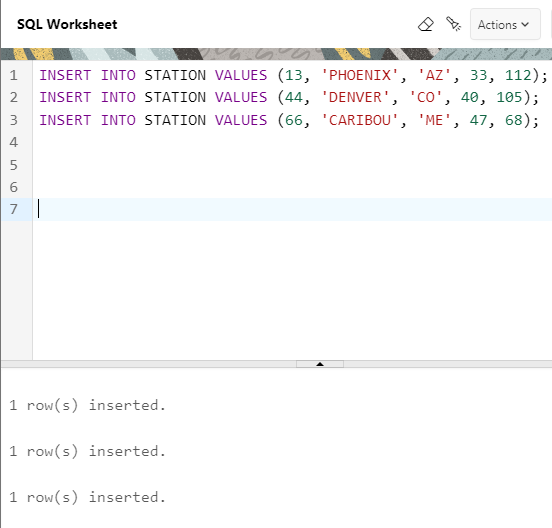
1. Insert the following records into the table:

Ans.

INSERT INTO STATION VALUES (13, 'PHOENIX', 'AZ', 33, 112);

INSERT INTO STATION VALUES (44, 'DENVER', 'CO', 40, 105);

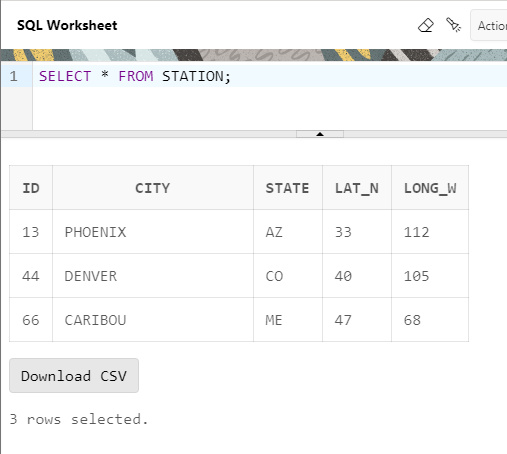
INSERT INTO STATION VALUES (66, 'CARIBOU', 'ME', 47, 68);



1. Execute a query to look at table STATION in undefined order.

Ans.

SELECT \* FROM STATION;

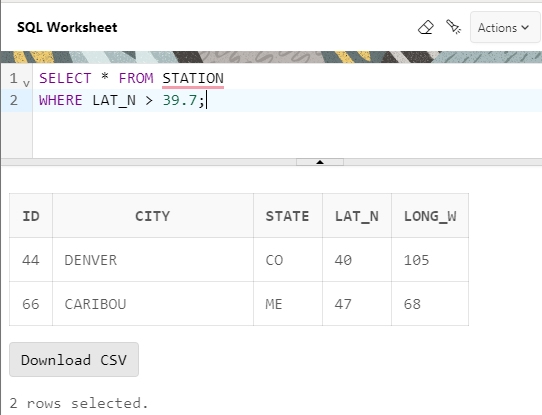


1. Execute a query to select Northern stations (Northern latitude > 39.7).

Ans.

SELECT \* FROM STATION

WHERE LAT\_N > 39.7;



1. Create another table, ‘STATS’, to store normalized temperature and precipitation data:

Ans.

CREATE TABLE STATS(

ID INT,

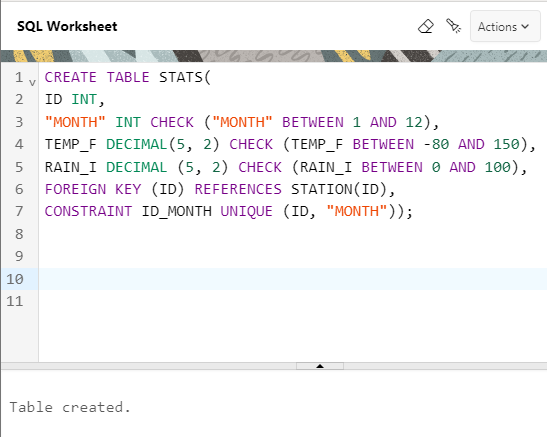
"MONTH" INT CHECK ("MONTH" BETWEEN 1 AND 12),

TEMP\_F DECIMAL(5, 2) CHECK (TEMP\_F BETWEEN -80 AND 150),

RAIN\_I DECIMAL (5, 2) CHECK (RAIN\_I BETWEEN 0 AND 100),

FOREIGN KEY (ID) REFERENCES STATION(ID),

CONSTRAINT ID\_MONTH UNIQUE (ID, "MONTH"));



1. Populate the table STATS with some statistics for January and July:

Ans.

INSERT INTO STATS VALUES

(13, 1, 57.4, .31);

INSERT INTO STATS VALUES

(13, 7, 91.7, 5.15);

INSERT INTO STATS VALUES

(44, 1, 27.3, .18);

INSERT INTO STATS VALUES

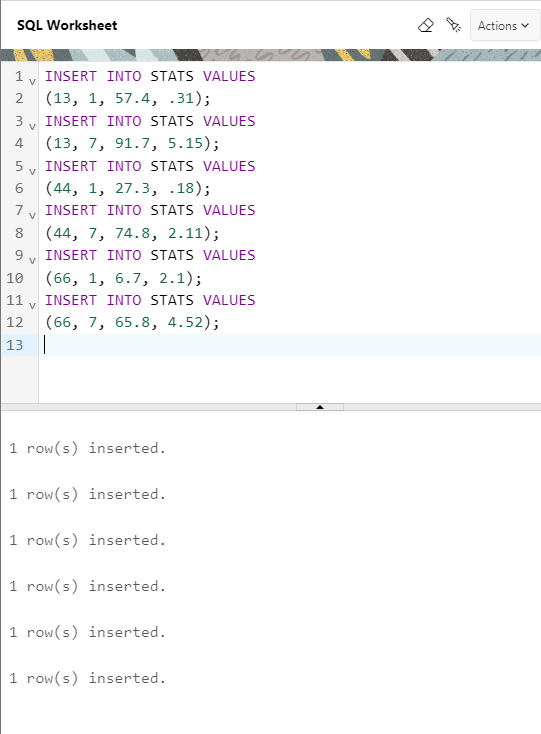
(44, 7, 74.8, 2.11);

INSERT INTO STATS VALUES

(66, 1, 6.7, 2.1);

INSERT INTO STATS VALUES

(66, 7, 65.8, 4.52);



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

Ans.

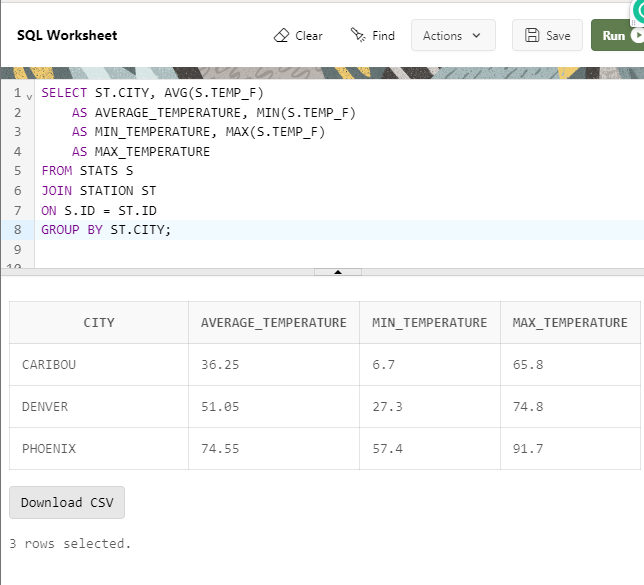
SELECT ST.CITY, AVG(S.TEMP\_F) AS AVERAGE\_TEMPERATURE, MIN(S.TEMP\_F) AS MIN\_TEMPERATURE, MAX(S.TEMP\_F) AS MAX\_TEMPERATURE

FROM STATS S

JOIN STATION ST

ON S.ID = ST.ID

GROUP BY ST.CITY;



1. 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.

NOTE-

( The order for month and Rai\_I has to be same since both follow same trend)

WORKING-

TABLES USED

FROM STATS; - MONTH, RAIN\_I, (ID)

FROM STATION; - CITY, (ID)

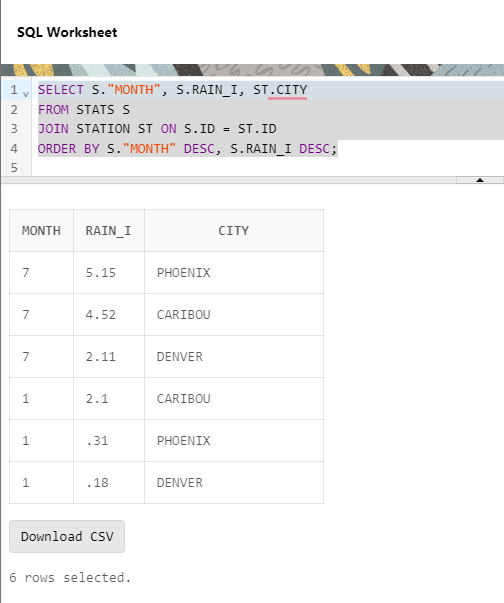
CODE-

SELECT S."MONTH", S.RAIN\_I, ST.CITY

FROM STATS S

JOIN STATION ST ON S.ID = ST.ID

ORDER BY S."MONTH" DESC, S.RAIN\_I DESC;



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

Ans.

WORKING-

TABLES USED

FROM STATS; - TEMP\_F, MONTH -7, (ID)

FROM STATION; - CITY, LAT\_N, (ID)

CODE-

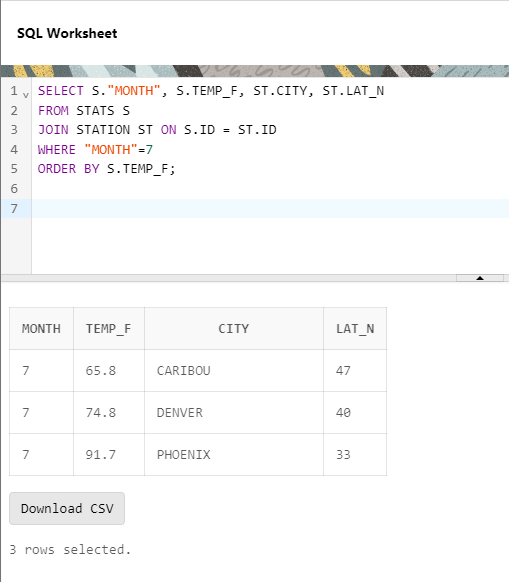
SELECT S."MONTH", S.TEMP\_F, ST.CITY, ST.LAT\_N

FROM STATS S

JOIN STATION ST ON S.ID = ST.ID

WHERE "MONTH"=7

ORDER BY S.TEMP\_F;



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

Ans.

WORKING-

TABLES USED

FROM STATS; - TEMP\_F, RAIN\_I, (ID)

FROM STATION; - CITY, (ID)

CODE-

SELECT ST.CITY,

MAX(S.TEMP\_F) AS MAX\_TEMP,

MIN(S.TEMP\_F) AS MIN\_TEMP,

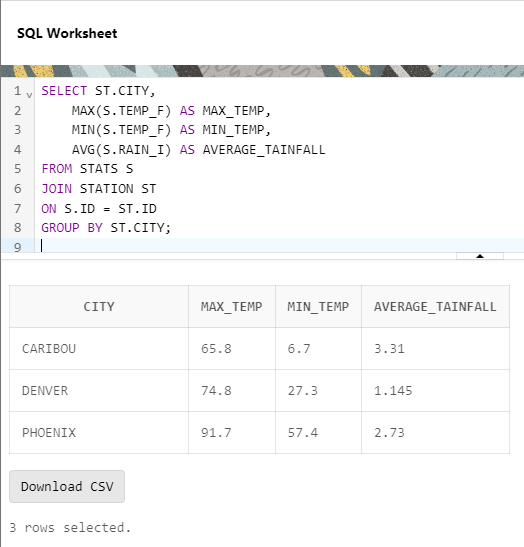
AVG(S.RAIN\_I) AS AVERAGE\_TAINFALL

FROM STATS S

JOIN STATION ST

ON S.ID = ST.ID

GROUP BY ST.CITY;



1. Execute a query to display each city’s monthly temperature in Celcius and rainfall in Centimeter.

Ans.

WORKING-

from stats- TEMP\_F {FAHRENHEIT TO CELCIUS} ,

RAIN\_I {INCHES TO CENTIMETER} (ID),

MONTH

from station- CITY (ID)

CODE-  
SELECT ST.CITY,

S."MONTH",

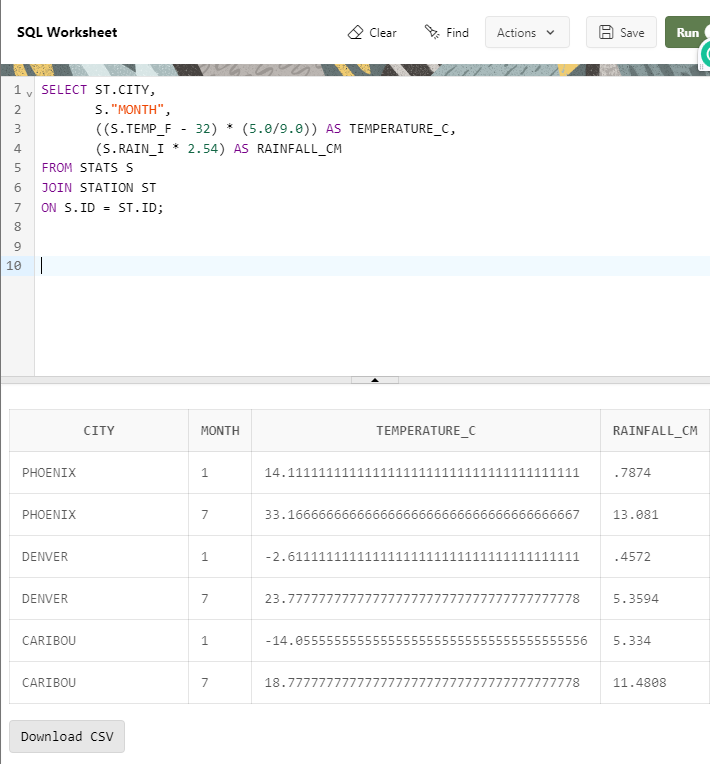
((S.TEMP\_F - 32) \* (5.0/9.0)) AS TEMPERATURE\_C,

(S.RAIN\_I \* 2.54) AS RAINFALL\_CM

FROM STATS S

JOIN STATION ST

ON S.ID = ST.ID;

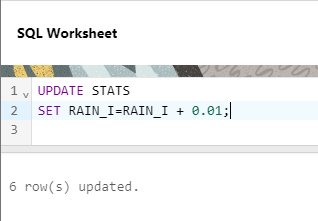


1. Update all rows of table STATS to compensate for faulty rain gauges known to read 0.01 inches low.

Ans.

UPDATE STATS

SET RAIN\_I=RAIN\_I + 0.01;





1. Update Denver's July temperature reading as 74.9

Ans.

NOTE-  
NEED TO UPDATE TEMP\_F OF DENVER (7) FROM 74.8 TO 74.9

CODE-

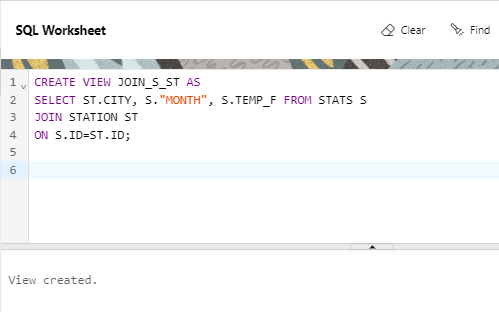
STEP 1.

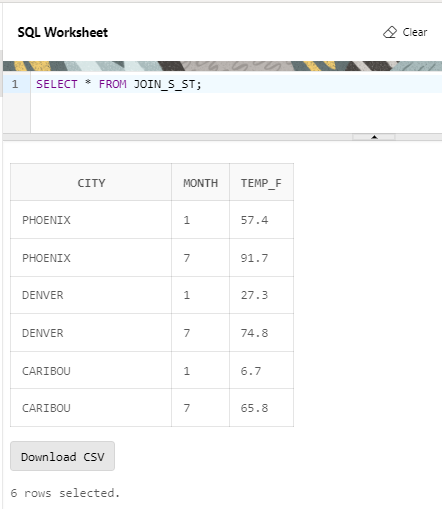
CREATE VIEW JOIN\_S\_ST AS

SELECT ST.CITY, S."MONTH", S.TEMP\_F FROM STATS S

JOIN STATION ST

ON S.ID=ST.ID;





STEP 2.

UPDATE JOIN\_S\_ST

SET TEMP\_F = 74.9

WHERE CITY = 'DENVER' AND "MONTH"=7;

