

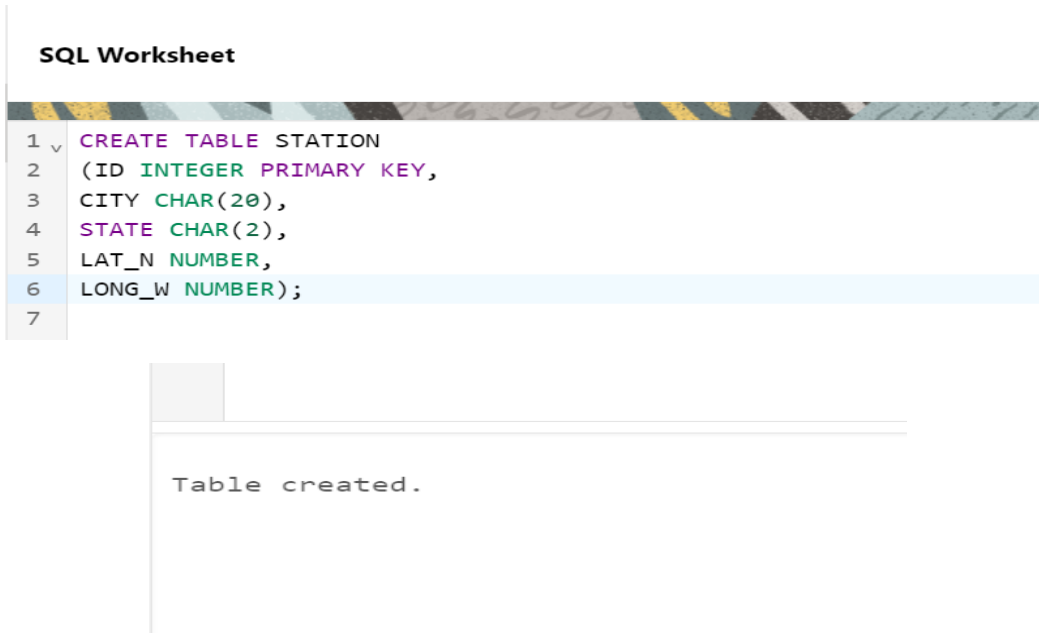
NAME- DIVYA STUTI

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COURSE NAME- Data Science with Python Career Program (ChatGPT Included)

ASSIGNMENT- SQL [Major]

Q1) Create a table “STATION” to store information about weather observation stations.



```
SQL Worksheet

1  CREATE TABLE STATION
2  (ID INTEGER PRIMARY KEY,
3   CITY CHAR(20),
4   STATE CHAR(2),
5   LAT_N NUMBER,
6   LONG_W NUMBER);
7

Table created.
```

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ASSIGNMENT- SQL [Major]

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

```
7
8
9  INSERT INTO STATION VALUES (13, 'Phoenix', 'AZ', 33, 112);
10 INSERT INTO STATION VALUES (44, 'Denver', 'CO', 40, 105);
11 INSERT INTO STATION VALUES (66, 'Caribou', 'ME', 47, 68);
```

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

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

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

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

SQL Worksheet

```
13
14 SELECT * FROM STATION;
15
16
17
18
```

ID	CITY	STATE	LAT_N	LONG_W
13	Phoenix	AZ	33	112
44	Denver	CO	40	105
66	Caribou	ME	47	68

Download CSV

3 rows selected.

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ASSIGNMENT- SQL [Major]

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

SQL Worksheet

```
15
16 ✓ SELECT * FROM STATION
17 WHERE LAT_N > 39.7;
18
19
```

ID	CITY	STATE	LAT_N	LONG_W
44	Denver	CO	40	105
66	Caribou	ME	47	68

Download CSV

2 rows selected.

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ASSIGNMENT- SQL [Major]

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

Column	Data Type	Remarks
ID	NUMBER	ID must match with some ID from the STATION table (so name & location will be known).
MONTH	NUMBER	The range of months is between (1 and 12)
TEMP_F	NUMBER	Temperature is in Fahrenheit degrees, Ranging between (80 and 150)
RAIN_I	NUMBER	Rain is in inches, Ranging between (0 and 100)

SQL Worksheet

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

Table created.

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ASSIGNMENT- SQL [Major]

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

```
8
9  INSERT INTO STATS VALUES (13, 1, 57.4, .31);
10 INSERT INTO STATS VALUES (13, 7, 91.7, 5.15);
11 INSERT INTO STATS VALUES (44, 1, 27.3, .18);
12 INSERT INTO STATS VALUES (44, 7, 74.8, 2.11);
13 INSERT INTO STATS VALUES (66, 1, 6.7, 2.1);
14 INSERT INTO STATS VALUES (66, 7, 65.8, 4.52);
15
16
17
```

```
1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.
```

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ASSIGNMENT- SQL [Major]

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

```
15
16
17 v SELECT CITY,TEMP_F
18 FROM Station
19 INNER JOIN STATS
20 ON Station.ID = STATS.ID;|
21
22
23
```

CITY	TEMP_F
Phoenix	57.4
Phoenix	91.7
Denver	27.3
Denver	74.8
Caribou	6.7
Caribou	65.8

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ASSIGNMENT- SQL [Major]

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.

SQL Worksheet

```
21
22 v SELECT STATS.*,CITY
23 FROM STATS
24 JOIN Station
25 ON STATS.ID = Station.ID
26 ORDER BY MONTH,RAIN_I DESC;|
27
28
29
30
31
32
```

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

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ASSIGNMENT- SQL [Major]

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

```
27
28
29 v SELECT TEMP_F, CITY, LAT_N
30 FROM STATS, Station
31 WHERE MONTH = 7
32 AND STATS.ID = Station.ID
33 ORDER BY TEMP_F;
34
35
36
```

TEMP_F	CITY	LAT_N
65.8	Caribou	47
74.8	Denver	40
91.7	Phoenix	33

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3 rows selected.

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ASSIGNMENT- SQL [Major]

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

SQL Worksheet

```
1 v SELECT CITY, MAX(TEMP_F), MIN(TEMP_F), AVG(RAIN_I)
2 FROM Station
3 JOIN STATS
4 ON Station.ID = STATS.ID
5 GROUP BY CITY;
```

CITY	MAX(TEMP_F)	MIN(TEMP_F)	AVG(RAIN_I)
Caribou	65.8	6.7	3.33
Denver	74.9	27.3	1.165
Phoenix	91.7	57.4	2.75

Download CSV

3 rows selected.

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ASSIGNMENT- SQL [Major]

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

```
WITH STATS_METRIC_CTE AS
(SELECT ID, MONTH, ROUND((TEMP_F - 32) * 5/9,4) AS "TEMP_C", ROUND((RAIN_I * 0.39370079),4) AS "RAIN_CM"
FROM STATS)
SELECT STATS_METRIC_CTE.*, CITY
FROM STATS_METRIC_CTE,Station
WHERE STATS_METRIC_CTE.ID = Station.ID;
```

ID	MONTH	TEMP_C	RAIN_CM	CITY
13	1	14.1111	.122	Phoenix
13	7	33.1667	2.0276	Phoenix
44	1	-2.6111	.0709	Denver
44	7	23.7778	.8307	Denver
66	1	-14.0556	.8268	Caribou
66	7	18.7778	1.7795	Caribou

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ASSIGNMENT- SQL [Major]

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

SQL Worksheet

```
15
16 v UPDATE STATS
17 SET RAIN_I = RAIN_I + 0.01;
18 v SELECT *
19 FROM STATS;
20
21
22
```

6 row(s) updated.

ID	MONTH	TEMP_F	RAIN_I
13	1	57.4	.32
13	7	91.7	5.16
44	1	27.3	.19
44	7	74.8	2.12
66	1	6.7	2.11
66	7	65.8	4.53

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ASSIGNMENT- SQL [Major]

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

SQL Worksheet

```
20
21
22 v UPDATE STATS SET TEMP_F = 74.9
23 WHERE ID = 44
24 AND MONTH = 7;
25
26
27
28
29
```

1 row(s) updated.

SQL Worksheet

```
20
21
22 v /*UPDATE STATS SET TEMP_F = 74.9
23 WHERE ID = 44
24 AND MONTH = 7;*/
25
26
27 SELECT * FROM STATS;
28
29
```

ID	MONTH	TEMP_F	RAIN_I
13	1	57.4	.33
13	7	91.7	5.17
44	1	27.3	.2
44	7	74.9	2.13
66	1	6.7	2.12
66	7	65.8	4.54

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