Answer Sheet - SQL

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1. 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	

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```
Create table Station
(
ID number Primary Key,
CITY Char(20),
STATE char(20),
LAT_N Number,
LONG_W Number
);
```

SQL Worksheet

```
1  Create table Station
2  (
3  ID number Primary Key,
4  CITY Char(20),
5  STATE char(20),
6  LAT_N Number,
7  LONG_W Number
8  );
```

```
Table created.
```

2. 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

```
INSERT INTO STATION VALUES (13,'PHONEIX', 'AZ', 33,112);
INSERT INTO STATION VALUES (44,'DENVER', 'CO', 40,105);
INSERT INTO STATION VALUES (66,'CARIBOU', 'ME',47,68);
```

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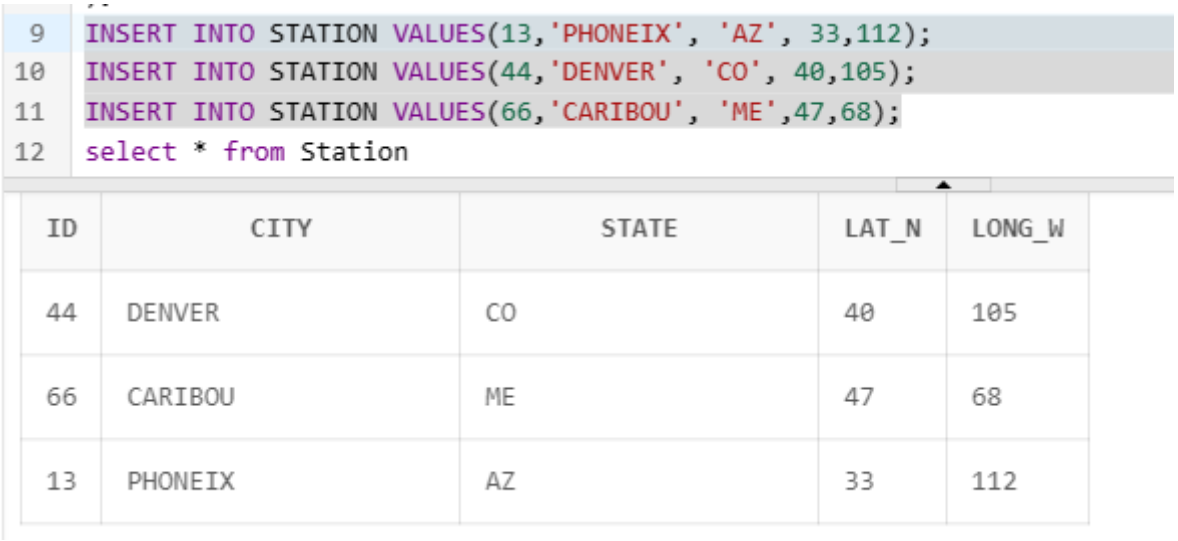

```
9  INSERT INTO STATION VALUES(13,'PHONEIX', 'AZ', 33,112);
10 INSERT INTO STATION VALUES(44,'DENVER', 'CO', 40,105);
11 INSERT INTO STATION VALUES(66,'CARIBOU', 'ME',47,68);
12 select * from Station
```

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

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

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```
Select * from Station
```

```
11  INSERT INTO STATION VALUES(66,'CARIBOU', 'ME',47,68);
12  Select * from Station;
13
```

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

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3 rows selected.

Q.4. Execute a query to select Northern stations (Northern latitude >39.7).

```
Select * from Station
   where LAT_N >39.7;
```

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```
1
2   Select * from Station
3       where LAT_N >39.7;
```

ID	CITY	STATE	LAT_N	LONG_W
44	DENVER	CO	40	105
66	CARIBOU	ME	47	68

Download CSV

2 rows selected.

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

Column	Data type	Remark
ID	Number	must match some STATION table ID(so name & location will be known).
MONTH	Number	Range between 1 and 12
TEMP_F	Number	in Fahrenheit degrees,Range between -80 and 150
RAIN_I	Number	in inches, Range between 0 and 100

```
Create table STATS
    (
    ID number references STATION(ID),
    MONTH number,
    TEMP_F number,
    RAIN_I number
        );
```

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SQL Worksheet

```
1  Create table STATS
2      (
3      ID number references STATION(ID),
4      MONTH number,
5      TEMP_F number,
6      RAIN_I number
7      );
```

```
Table created.
```

6.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

```
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 (66,1,6.7,2.1);
insert into STATS values (66,7,65.8,4.52);
select * from stats;
```

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

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

```
Select stats.id, stats.temp_f, station.city
from stats
join station
on station.ID = stats.id;
```

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```
1  Select stats.id,stats.temp_f,station.city
2  from stats
3  join station
4  on station.ID = stats.id;
```

ID	TEMP_F	CITY
13	57.4	PHONEIX
13	91.7	PHONEIX
44	27.3	DENVER
44	74.8	DENVER
66	6.7	CARIBOU
66	65.8	CARIBOU

.

8.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.

```
Select s.month, s.RAIN_I, st.city
From STATS s
   join STATION st
 ON s.ID = st.ID
Order by Month, RAIN_I Desc;
```

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SQL Worksheet

```
1  Select s.month,s.RAIN_I, st.city
2  From STATS s
3      join STATION st
4   ON s.ID = st.ID
5  Order by Month, RAIN_I Desc;
```

MONTH	RAIN_I	CITY
1	2.1	CARIBOU
1	.31	PHONEIX
1	.18	DENVER
7	5.15	PHONEIX
7	4.52	CARIBOU
7	2.11	DENVER

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

```
Select s.month, s.RAIN_I, st.city
From STATS s
   join STATION st
 ON s.ID = st.ID
Order by Month, RAIN_I Desc;
```

10. Execute a query to show MAX and MIN temperatures

as well as the average rainfall for each city

select st.city, min(s.TEMP_F)as MIN_Temperature,max(s.TEMP_F) as MAX_Temperature, avg(s.RAIN_I) as AVG_Rain

```
select st.city, min(s.TEMP_F)as MIN_Temperature,max(s.TEMP_F) as MAX_Temperature, avg(s.RAIN_I) as AVG_Rain

From stats s

join STATION st

on s.ID =st.Id

Group by st.city;
```

```
1  select st.city, min(s.TEMP_F)as MIN_Temperature,max(s.TEMP_F) as MAX_Temperature, avg(s.RAIN_I) as AVG_Rain
2  From stats s
3  join STATION st
4  on s.ID =st.Id
5  Group by st.city;
```

CITY	MIN_TEMPERATURE	MAX_TEMPERATURE	AVG_RAIN
CARIBOU	6.7	65.8	3.31
PHONEIX	57.4	91.7	2.73
DENVER	27.3	74.8	1.145

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3 rows selected.

11. Execute a query to display each city'smonthly temperature in Celcius and rainfall in Centimeters

select st.city, month,Round(((temp_F-32)*5/9),2) as temp_celsius,(Rain_I-2.54) as rainfall_in_Centimeter

From stats s

join STATION st

on s.ID =st.Id

```
1  select st.city, month,Round(((temp_F-32)*5/9),2) as temp_celsius,(Rain_I-2.54) as rainfall_in_Centimeter
2  From stats s
3  join STATION st
4  on s.ID =st.Id
```

CITY	MONTH	TEMP_CELSIUS	RAINFALL_IN_CENTIMETER
PHONEIX	1	14.11	-2.23
PHONEIX	7	33.17	2.61
DENVER	1	-2.61	-2.36
DENVER	7	23.78	-.43
CARIBOU	1	-14.06	-.44
CARIBOU	7	18.78	1.98

12. Update All Rows of table STATS to compensate for faulty rain gauges known to read 0.01 inches low.

To update all rows of the table "STATS" and compensate for faulty rain gauges known to read 0.01 inches low, you can use the following SQL statement

UPDATE STATS

SET rainfall = rainfall + 0.01;

13. Update Denver's July temperature reading as 74.9

To update the July temperature reading for Denver to 74.9, you can use the following SQL statement assuming there is a table called "STATS" with columns for the city and temperature:

```
UPDATE STATS
SET temperature = 74.9
WHERE city = 'Denver' AND month = 'July';
```

This query will update the temperature value to 74.9 for the specific row where the city is "Denver" and the month is "July" in the "STATS" table.