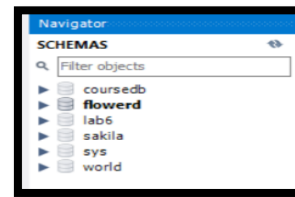


SQL command

Create new schema

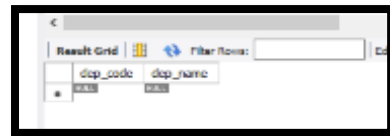
```
1 • CREATE SCHEMA `flowerd` ;
```

Result

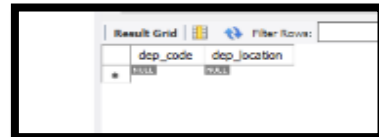


Create tabels

```
2
3 • CREATE TABLE Department (
4   dep_code    VARCHAR(10),
5   dep_name    VARCHAR(20),
6   CONSTRAINT Department_PK PRIMARY KEY (dep_code,dep_name)
7 );
```



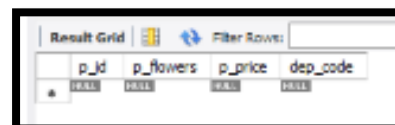
```
8
9 • CREATE TABLE DepartmentLocation (
10  dep_code    VARCHAR(10),
11  dep_location VARCHAR(30),
12  CONSTRAINT DepartmentLocation_PK PRIMARY KEY (dep_code,dep_location),
13  CONSTRAINT DepartmentLocation_FK FOREIGN KEY (dep_code) REFERENCES Department(dep_code)
14 );
15
16
```



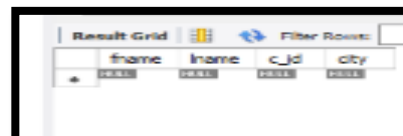
```
17
18 • CREATE TABLE Employee(
19  e_id        VARCHAR(10),
20  fname       VARCHAR(15),
21  lname       VARCHAR(15),
22  e_gander    VARCHAR(10),
23  e_salary    INT,
24  e_emile     VARCHAR(30),
25  dep_code    VARCHAR(10),
26  CONSTRAINT Employee_PK PRIMARY KEY (e_id),
27  CONSTRAINT Employee_FK FOREIGN KEY (dep_code) REFERENCES Department(dep_code)
28 );
```



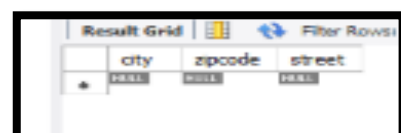
```
29
30 • CREATE TABLE Product(
31  p_id        VARCHAR(10),
32  p_flowers   VARCHAR(20),
33  p_price     INT,
34  dep_code    VARCHAR(10),
35  CONSTRAINT Product_PK PRIMARY KEY (p_id),
36  CONSTRAINT Product_FK FOREIGN KEY (dep_code) REFERENCES Department(dep_code)
37 );
```



```
38
39 • CREATE TABLE client_info (
40  fname       VARCHAR(15),
41  lname       VARCHAR(15),
42  c_id        VARCHAR(10),
43  city        VARCHAR(10),
44  CONSTRAINT Client_PK PRIMARY KEY (c_id,city)
45 );
```



```
46
47 • CREATE TABLE ClientAddress(
48  city        VARCHAR(10),
49  zipcode     INT(6),
50  street      VARCHAR(10),
51  CONSTRAINT Client_PK PRIMARY KEY (city)
52 );
```



```

3 CREATE TABLE OrderOnline(
4   order_code   VARCHAR(10),
5   order_pay    INT,
6   o_new       VARCHAR(5),
7   shipped      VARCHAR(5),
8   hold        VARCHAR(5),
9   derived      VARCHAR(5),
10  e_id         VARCHAR(10),
11  c_id         VARCHAR(10),
12  CONSTRAINT OrderOnline_PK PRIMARY KEY (order_code),
13  CONSTRAINT OrderOnline_FK1 FOREIGN KEY (e_id) REFERENCES Employee(e_id)
14  CONSTRAINT OrderOnline_FK2 FOREIGN KEY (c_id) REFERENCES client_info(c_id)
15 );

```

order_code	order_pay	o_new	shipped	hold	derived	e_id	c_id
1	1000	000	000	000	000	000	000

```

3 CREATE TABLE productANDOrder (
4   order_code   VARCHAR(10) NOT NULL,
5   p_id         VARCHAR(10) NOT NULL,
6   CONSTRAINT productANDOrder_FK1 FOREIGN KEY (order_code) REFERENCES OrderOnline(order_code) ON DELETE CASCADE,
7   CONSTRAINT productANDOrder_FK2 FOREIGN KEY (p_id) REFERENCES Product(p_id) ON DELETE CASCADE
8 );

```

order_code	p_id
------------	------

```

4 CREATE TABLE schedulee (
5   DataShipment VARCHAR(10) NOT NULL,
6   DataDelivery  VARCHAR(10) ,
7   order_code    VARCHAR(10),
8   CONSTRAINT schedulee_PK PRIMARY KEY (DataShipment),
9   CONSTRAINT schedulee_FK1 FOREIGN KEY (order_code) REFERENCES OrderOnline(order_code) ON DELETE CASCADE
10 );

```

DataShipment	DataDelivery	order_code
1000	1000	1000

```

3 CREATE TABLE WorkSON (
4   order_code   VARCHAR(10) NOT NULL,
5   e_id         VARCHAR(10) NOT NULL,
6   CONSTRAINT WorkSON_FK1 FOREIGN KEY (order_code) REFERENCES OrderOnline(order_code) ON DELETE CASCADE,
7   CONSTRAINT WorkSON_FK2 FOREIGN KEY (e_id) REFERENCES Employee(e_id) ON DELETE CASCADE
8 );

```

order_code	e_id
------------	------

```

3 CREATE TABLE ClientNumber (
4   c_id         VARCHAR(10) NOT NULL,
5   c_number     VARCHAR(20) NOT NULL,
6   CONSTRAINT ClientNumber_FK1 FOREIGN KEY (c_id) REFERENCES client_info(c_id) ON DELETE CASCADE,
7   CONSTRAINT ClientNumber_PK PRIMARY KEY (c_number)
8 );

```

c_id	c_number
1000	1000

```

96 CREATE TABLE payment (
97   pay_code     VARCHAR(10) NOT NULL,
98   Amount       VARCHAR(10),
99   pay_type     VARCHAR(10),
100  c_id         VARCHAR(10) NOT NULL,
101  CONSTRAINT payment_PK PRIMARY KEY (pay_code),
102  CONSTRAINT payment_FK1 FOREIGN KEY (c_id) REFERENCES client_info(c_id) ON DELETE CASCADE
103 );

```

pay_code	Amount	pay_type	c_id
1000	1000	1000	1000

Insert into tables

```

106 • INSERT INTO Department
107 VALUES (102,'DEP1');
108 • INSERT INTO Department
109 VALUES (105,'DEP2');
110 • INSERT INTO Department
111 VALUES (109,'DEP3');
112 • INSERT INTO Department
113 VALUES (112,'DEP4');
114 • INSERT INTO Department
115 VALUES (131,'DEP5');
116
117 • SELECT*
118 FROM department;

```

	dep_code	dep_name
▶	102	DEP 1
	105	DEP 2
	109	DEP 3
	112	DEP 4
	131	DEP 5
*	NULL	NULL

```

120 • INSERT INTO DepartmentLocation
121 VALUES (102,'street3');
122 • INSERT INTO DepartmentLocation
123 VALUES (105,'street7');
124 • INSERT INTO DepartmentLocation
125 VALUES (109,'street5');
126 • INSERT INTO DepartmentLocation
127 VALUES (112,'street3');
128 • INSERT INTO DepartmentLocation
129 VALUES (131,'street3');
130
131 • SELECT*
132 FROM departmentlocation;

```

	dep_code	dep_location
▶	102	street3
	105	street7
	109	street5
	112	street3
	131	street3
*	NULL	NULL

```

135 • INSERT INTO Employee
136 VALUES ('E1942','Mohammed','omar','male',250,'mohomar@hotmail.com',102);
137 • INSERT INTO Employee
138 VALUES ('E2356','norah','ali','female',300,'noraali@hotmail.com',105);
139 • INSERT INTO Employee
140 VALUES ('E6732','sami','bader','male',350,'samibader@hotmail.com',109);
141 • INSERT INTO Employee
142 VALUES ('E2938','sarah','abdullah','female',250,'sarahabdul@hotmail.com',112);
143 • INSERT INTO Employee
144 VALUES ('E1098','fahad','saleh','male',300,'fahadsaleh@hotmail.com',131);
145
146 • SELECT*
147 FROM employee;

```

e_id	fname	lname	e_gender	e_salary	e_email	dep_code
E1098	fahad	saleh	male	300	fahadsaleh@hotmail.com	131
E1942	Mohammed	omar	male	250	mohomar@hotmail.com	102
E2356	norah	ali	female	300	noraali@hotmail.com	105
E2938	sarah	abdullah	female	250	sarahabdul@hotmail.com	112
E6732	sami	bader	male	350	samibader@hotmail.com	109
NULL	NULL	NULL	NULL	NULL	NULL	NULL

```

149 • INSERT INTO Product
150 VALUES ('P087','aster',200,102);
151 • INSERT INTO Product
152 VALUES ('P234','daisy',250,105);
153 • INSERT INTO Product
154 VALUES ('P324','Rose',300,109);
155 • INSERT INTO Product
156 VALUES ('P123','Tulip',350,112);
157 • INSERT INTO Product
158 VALUES ('P746','Lily',400,131);
159 • INSERT INTO Product
160 VALUES ('P063','lotus (red)',150,102);
161 • INSERT INTO Product
162 VALUES ('P047','lotus (blue)',150,102);
163
164 • SELECT*
165 FROM product;

```

	p_id	p_flowers	p_price	dep_code
▶	P047	lotus (blue)	150	102
	P063	lotus (red)	150	102
	P087	aster	200	102
	P123	Tulip	350	112
	P234	daisy	250	105
	P324	Rose	300	109
	P746	Lily	400	131
*	NULL	NULL	NULL	NULL

```

7 • INSERT INTO client_info
8 VALUES ('ahmed','yousef','C345','makkah');
9 • INSERT INTO client_info
10 VALUES ('faisal','hamad','C765','riyadh');
11 • INSERT INTO client_info
12 VALUES ('reem','anas','C123','jeddah');
13 • INSERT INTO client_info
14 VALUES ('majed','ayman','C546','makkah');
15 • INSERT INTO client_info
16 VALUES ('dana','mohammed','C098','Qassim');
17
18 • SELECT*
19 FROM client_info;

```

	fname	lname	c_id	city
▶	dana	mohammed	C098	Qassim
	reem	anas	C123	jeddah
	ahmed	yousef	C345	makkah
	majed	ayman	C546	makkah
	faisal	hamad	C765	riyadh
*	NULL	NULL	NULL	NULL

```

1 • INSERT INTO ClientAddress
2   VALUES ('makkah',675466,'street6');
3 • INSERT INTO ClientAddress
4   VALUES ('riyadh',24567,'street1');
5 • INSERT INTO ClientAddress
6   VALUES ('jeddah',23566,'street9');
7 • INSERT INTO ClientAddress
8   VALUES ('taif',23676,'street0');
9 • INSERT INTO ClientAddress
10  VALUES ('Qassim',250677,'street4');
11
12 • SELECT*
13 FROM ClientAddress;

```

	city	zipcode	street
▶	jeddah	23566	street9
	makkah	675466	street6
	Qassim	250677	street4
	riyadh	24567	street1
	taif	23676	street0
✱	NULL	NULL	NULL

```

5 • INSERT INTO 'flowerd'.OrderOnline ('order_code', 'order_pay', 'o_new', 'e_id', 'c_id')
6   VALUES ('076564', '321', 'Check', 'E1098', 'C098');
7 • INSERT INTO 'flowerd'.OrderOnline ('order_code', 'order_pay', 'shipped', 'e_id', 'c_id')
8   VALUES ('063829', '654', 'Check', 'E1942', 'C123');
9 • INSERT INTO 'flowerd'.OrderOnline ('order_code', 'order_pay', 'hold', 'e_id', 'c_id')
10  VALUES ('062538', '289', 'Check', 'E2356', 'C345');
11 • INSERT INTO 'flowerd'.OrderOnline ('order_code', 'order_pay', 'derived', 'e_id', 'c_id')
12  VALUES ('098937', '378', 'Check', 'E2938', 'C546');
13 • INSERT INTO 'flowerd'.OrderOnline ('order_code', 'order_pay', 'hold', 'e_id', 'c_id')
14  VALUES ('028398', '198', 'Check', 'E6732', 'C765');
15
16 • SELECT*
17 FROM OrderOnline;

```

	order_code	order_pay	o_new	shipped	hold	derived	e_id	c_id
▶	O28398	198	NULL	NULL	Check	NULL	E6732	C765
	O62538	289	NULL	NULL	Check	NULL	E2356	C345
	O63829	654	NULL	Check	NULL	NULL	E1942	C123
	O76564	321	Check	NULL	NULL	NULL	E1098	C098
	O98937	378	NULL	NULL	Check	NULL	E2938	C546
✱	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```

9 • INSERT INTO schedulee
10  VALUES ('14NOV2021', '30NOV2021', 'O28398');
11 • INSERT INTO schedulee
12  VALUES ('20DEC2021', '30DEC2021', 'O62538');
13 • INSERT INTO schedulee
14  VALUES ('23JAN2022', '23JAN2022', 'O63829');
15 • INSERT INTO schedulee
16  VALUES ('22NOV2021', '2DEC2021', 'O76564');
17 • INSERT INTO schedulee
18  VALUES ('30NOV2021', '10DEC2021', 'O98937');
19
20 • SELECT*
21 FROM schedulee;

```

	DataShipment	DataDelivery	order_code
▶	14NOV2021	30NOV2021	O28398
	20DEC2021	30DEC2021	O62538
	22NOV2021	2DEC2021	O76564
	23JAN2022	23JAN2022	O63829
	30NOV2021	10DEC2021	O98937
✱	NULL	NULL	NULL

```

3 • INSERT INTO ClientNumber
4   VALUES ('C765', '+9665332125678');
5 • INSERT INTO ClientNumber
6   VALUES ('C345', '+966345654345');
7 • INSERT INTO ClientNumber
8   VALUES ('C123', '+966502354327');
9 • INSERT INTO ClientNumber
10  VALUES ('C098', '+9665376845629');
11 • INSERT INTO ClientNumber
12  VALUES ('C546', '+96650231267894');
13
14 • SELECT*
15 FROM ClientNumber;
16

```

	c_id	c_number
▶	C098	+9665376845629
	C123	+966502354327
	C345	+966345654345
	C546	+96650231267894
	C765	+9665332125678
✱	NULL	NULL

```

8 • INSERT INTO payment
9   VALUES ('Q3432', '500', 'Visa', 'C765');
10 • INSERT INTO payment
11  VALUES ('Q4576', '900', 'Visa', 'C345');
12 • INSERT INTO payment
13  VALUES ('Q8723', '799', 'Visa', 'C123');
14 • INSERT INTO payment
15  VALUES ('Q1289', '400', 'Visa', 'C098');
16 • INSERT INTO payment
17  VALUES ('Q2365', '432', 'Cash', 'C546');
18
19 • SELECT*
20 FROM payment;
21

```

	pay_code	Amount	pay_type	c_id
▶	Q1289	400	Visa	C098
	Q2365	432	Cash	C546
	Q3432	500	Visa	C765
	Q4576	900	Visa	C345
	Q8723	799	Visa	C123
✱	NULL	NULL	NULL	NULL


```

53 • INSERT INTO WorksON
54 VALUES ('O28398', 'E6732');
55 • INSERT INTO WorksON
56 VALUES ('O62538', 'E2356');
57 • INSERT INTO WorksON
58 VALUES ('O63829', 'E1942');
59 • INSERT INTO WorksON
60 VALUES ('O76564', 'E1098');
61 • INSERT INTO WorksON
62 VALUES ('O98937', 'E2938');
63
64 • SELECT*
65 FROM WorksON;
66

```

Result Grid			Filter
	order_code	e_id	
▶	O28398	E6732	
	O62538	E2356	
	O63829	E1942	
	O76564	E1098	
	O98937	E2938	

```

7 • INSERT INTO productANDorder
8 VALUES ('O28398', 'P087');
9 • INSERT INTO productANDorder
10 VALUES ('O62538', 'P123');
11 • INSERT INTO productANDorder
12 VALUES ('O63829', 'P234');
13 • INSERT INTO productANDorder
14 VALUES ('O76564', 'P324');
15 • INSERT INTO productANDorder
16 VALUES ('O98937', 'P746');
17
18 • SELECT*
19 FROM productANDorder;
20

```

Result Grid			Filter R
	order_code	p_id	
▶	O28398	P087	
	O62538	P123	
	O63829	P234	
	O76564	P324	
	O98937	P746	

Update..

```

1 -- Giving employees 10% of their salary if the salary is less than 300
2 • UPDATE employee
3 SET e_salary = (e_salary * 1.1)
4 WHERE e_salary < 300;
5 • SELECT *
6 FROM employee;
7

```

Result Grid							Filter Rows:	Edits	Export/Import:
e_id	fname	lname	e_gender	e_salary	e_email	dep_code			
▶ E1098	fahad	saleh	male	300	fahadsaleh@hotmail.com	131			
E1942	Mohammed	omar	male	275	mohomar@hotmail.com	102			
E2356	norah	ali	female	300	noraal@hotmail.com	105			
E2938	sarah	abdullah	female	275	sarahabdul@hotmail.com	112			
E6732	sami	bader	male	350	sambader@hotmail.com	109			
•	NULL	NULL	NULL	NULL	NULL	NULL			

```

288 -- A 5% tax is added to all products
289 • UPDATE product
290 SET p_price= (p_price * 1.05);
291 • SELECT*
292 FROM product;
293

```

Result Grid					Filter Rows:
	p_id	p_flowers	p_price	dep_code	
▶	P047	lotus (blue)	158	102	
	P063	lotus (red)	158	102	
	P087	aster	210	102	
	P123	Tulip	368	112	
	P234	daisy	263	105	
	P324	Rose	315	109	
	P746	Lily	420	131	
•	NULL	NULL	NULL	NULL	

Delete..

```

4 -- Delete client id of "C546"
5 • DELETE FROM client_info
6 WHERE c_id = 'C546';
7 • SELECT *
8 FROM client_info;
9

```

	fname	lname	c_id	city
▶	dana	mohammed	C098	Qassim
	reem	anas	C123	jeddah
	ahmed	yousef	C345	makkah
	faisal	hamad	C765	riyadh
•	NULL	NULL	NULL	NULL

```

1 -- Delete Department code of "109"
2 • DELETE FROM department
3 WHERE dep_code = '109';
4 • SELECT *
5 FROM department;
6

```

Result Grid			Filter Rows:
	dep_code	dep_name	
▶	102	DEP 1	
	105	DEP 2	
	112	DEP 4	
	131	DEP 5	
•	NULL	NULL	

Where(RANGE SEARCH CONDITION)

```
7 -- List the product ID and price of the product which have a price between $300.00 and $400.00.
8 SELECT p_id,p_price
9 FROM product
10 WHERE p_price BETWEEN 300 AND 400;
```

	p_id	p_price
▶	P 123	368
●	NULL	NULL

ORDER BY..

```
2 -- List all details of all client info, with first in descending order of client id, and then in ascending order of city
3 * SELECT *
4 FROM client_info
5 ORDER BY c_id DESC,city;
```

Result Grid		Filter Rows:		
	fname	lname	c_id	city
▶	faisal	hamad	C765	riyadh
	ahmed	yousef	C345	makkah
	reem	anas	C123	jeddah
	dana	mohammed	C098	Qassim
•	NULL	NULL	NULL	NULL

GROUP BY..

```
-- the total number of employee in each department and the sum of their salary
• select dep_code,count(e_id) as count ,SUM(e_salary) AS SumSalary
  from employee
 group by dep_code
 order by dep_code ;
```

	dep_code	count	SumSalary
▶	102	1	275
	105	1	300
	112	1	275
	131	1	300

HAVING..

```
23 -- For each gender type employee, find the total the number of employees and the sum of their salary.
24 • select e_gender,count(e_id) as count ,SUM(e_salary) AS SumSalary
25 from employee
26 group by e_gender
27 HAVING count(e_id)>1;
```

	e_gander	count	SumSalary
▶	male	2	575
	female	2	575

SUBQUERIES

```
29 -- List the product IDs of products which prices are greater than the average prices, and show their prices
30 • select p_id,p_price
31 from product
32 where p_price > (select avg(p_price) from product);
33
```

	p_id	p_price
▶	P123	368
	P234	263
	P746	420
✱	NULL	NULL

JOIN OPERATION

```
-- We have listed employee IDs, names, department name, department code, order results by employee IDs (ASC), Department name (ASC), and department code (DESC)
SELECT e_id,fname,lname,dep_name,E.dep_code
FROM employee E, department D
WHERE E.dep_code=D.dep_code
ORDER BY e_id ASC ,dep_name ASC,E.dep_code DESC;
```

e_id	fname	lname	dep_name	dep_code
E1098	fahad	saleh	DEP5	131
E1942	Mohammed	omar	DEP1	102
E2356	norah	ali	DEP2	105
E2938	sarah	abdullah	DEP4	112

Where(NULL SEARCH CONDITION)

```
1 SELECT *
2 FROM orderonline
3 WHERE shipped IS NULL
```

[illegible]

```
SELECT *
FROM orderonline
WHERE o_new IS NULL AND hold IS NOT NULL ;
```

[illegible]

```

9 • UPDATE product
0   SET p_price = 250
1   WHERE p_ID = 'P234';
2

```

```

• SELECT fname , lname
  FROM client_info
 WHERE c_id IN ( SELECT c_id
                  FROM OrderOnline
                  WHERE c_id = 'C123' );

```

```

• SELECT fname , lname
  FROM employee
 WHERE e_id IN ( SELECT e_id
                  FROM workson
                  WHERE order_code = '062538' );

```

```

SELECT SUM(order_pay) AS sum_pay
FROM OrderOnline
WHERE e_id IN ( SELECT e_id
                 FROM employee
                 WHERE dep_code IN ( SELECT dep_code
                                     FROM Department
                                     WHERE dep_name = 'DEP1' ) );

```

```

75 • SELECT SUM(order_pay)/12 AS sum_pay
76   FROM OrderOnline
77  WHERE order_code IN ( SELECT order_code
78                        FROM productandorder
79                        WHERE p_id IN ( SELECT p_id
80                                       FROM product
81                                       WHERE dep_code = 112 ) );
82

```

```

383 • SELECT *
384   FROM product
385  GROUP BY dep_code
386  HAVING p_price > 350 ;

```

```

• SELECT SUM(p_price) AS priceSum , dep_code
  FROM Product
 GROUP BY dep_code
 HAVING dep_code > 100 ;

```

```

33 • SELECT c.c_id , fname , lname , order_code , order_pay , o_new , shipped , hold , derived
34   FROM client_info c , OrderOnline o
35  WHERE c.c_id = o.c_id
36  ORDER BY c.c_id ASC ;
37

```

```

38 • SELECT p.p_id , p.flowers , p.price , o.order_code , order_pay , o_new , shipped , hold , derived
39   FROM productandorder pao , OrderOnline o , product p
40  WHERE p.p_id = pao.p_id and o.order_code = pao.order_code
41  ORDER BY p.p_id , o.order_code DESC ;
42

```

	p_id	p_flowers	p_price	dep_code
▶	P047	lotus (blue)	158	102
	P063	lotus (red)	158	102
	P087	aster	210	102
	P123	Tulip	368	112
	P234	daisy	250	105
	P746	Lily	420	131
•	NULL	NULL	NULL	NULL

	fname	lname
▶	reem	anas

	fname	lname
▶	norah	ali

	sum_pay
▶	654

	sum_pay
▶	24.0833

	p_id	p_flowers	p_price	dep_code
▶	P123	Tulip	368	112
	P746	Lily	420	131
•	NULL	NULL	NULL	NULL

	priceSum	dep_code
▶	526	102
	250	105
	368	112
	420	131

c_id	fname	lname	order_code	order_pay	o_new	shipped	hold	derived
▶ C098	dana	mohammed	076564	321	Check	NULL	NULL	NULL
C123	reem	anas	063829	654	NULL	Check	NULL	NULL
C345	ahmed	yousef	062538	289	NULL	NULL	Check	NULL

p_id	p_flowers	p_price	order_code	order_pay	o_new	shipped	hold	derived
▶ P123	Tulip	368	062538	289	NULL	NULL	Check	NULL
P234	daisy	250	063829	654	NULL	Check	NULL	NULL

