CS313: Lab Assignment 3

B Siddharth Prabhu 200010003@iitdh.ac.in

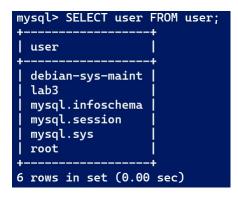
6 September 2022

1 Question 1: Creation of User and Database

Input Queries:

```
CREATE USER 'lab3'@'localhost' IDENTIFIED BY 'tumajarbisaun';
CREATE DATABASE lab3;
GRANT ALL PRIVILEGES ON lab3.* TO 'lab3'@'localhost';
```

Output Screenshots:



(a) New User 'lab3' has been created.

- (b) New Database 'lab3' has been created.

Figure 1: New User and New Database Creation from root

Figure 2: Clearly, 'lab3' database can be accessed by User 'lab3'.

2 Question 2: Creation of Tables

Input Queries:

```
USE lab3;
CREATE TABLE part(
    `part-no` INT(6) PRIMARY KEY,
    `part-name` VARCHAR(45) NOT NULL,
   color VARCHAR(7),
   weight NUMERIC(7,3)
   );
CREATE TABLE supplier(
    `supplier-no` INT(5) PRIMARY KEY,
    `sup-name` VARCHAR(45) NOT NULL,
   city VARCHAR(30) NOT NULL,
   bank VARCHAR(30)
   );
CREATE TABLE shipment(
   `shipment-no` INT(7) PRIMARY KEY,
    `part-no` INT(6) NOT NULL,
    `supplier-no` INT(5) NOT NULL,
   date DATE,
   quantity INT(5),
   price NUMERIC(7,2),
   FOREIGN KEY ('part-no') REFERENCES part('part-no'),
   FOREIGN KEY (`supplier-no`) REFERENCES supplier(`supplier-no`)
```

Output Screenshots:

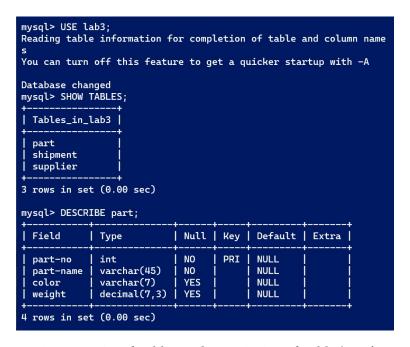


Figure 3: List of Tables and Description of Table 'part'

Field	++ Type	+ Null	+ Vov. 1	+ Default	Evtna l
1 LIECO	туре		Key		
supplier-no	l int	NO I	PRI I	NULL I	i
	varchar(45)	NO	i	NULL	i.
city	varchar(30)		j	NULL	i i
bank	varchar(30)	YES	ļ	NULL	. !
4 rows in set	(0.01 sec)			,	
mysql> DESCRIB	E shipment;	+		y)	
<u> </u>	E shipment; + Type +	+ Null +	+ Key	+ Default +	Extra
<u> </u>	+ Type 	+ Null +	+ Key +	+ Default +	+ Extra +
+	+ Type 		+	 NULL	+ Extra +
+	 Type int int	NO	PRI	; NULL NULL	+ Extra
+	 Type int int	NO NO	PRI MUL	; NULL NULL	Extra
+	Type Type int int	NO NO NO NO YES YES	PRI MUL	+ NULL NULL NULL	Extra

Figure 4: Description of Tables 'supplier' and 'shipment'

3 Question 3: Insertion of a few Tuples

Input Queries:

```
INSERT INTO part VALUES (10034, "Imager Chip", "#ed795b", 3.4);
INSERT INTO supplier VALUES (2143, "Aurora Tech.", "Bengaluru", "SBI");
INSERT INTO shipment VALUES (1000232, 10034, 2143, "2022-09-01", 3400, 35.4);
```

Output Screenshots:

```
mysql> INSERT INTO part VALUES (10034, "Imager Chip", "#ed795b", 3.4);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO supplier VALUES (2143, "Aurora Tech.", "Bengaluru", "SBI");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO shipment VALUES (1000232, 10034, 2143, "2022-09-01", 3400, 35.4);
Query OK, 1 row affected (0.01 sec)
```

Figure 5: Insertion of Tuples, Queries OK

Figure 6: Checking the insertions

4 Question 4: Insertion of Many Records

Input Queries:

```
INSERT INTO part VALUES (30034, "Unknown Chip", "red", 3.56);
INSERT INTO part VALUES (30134, "Breadboard", "white", 50.4);
INSERT INTO part VALUES (12154, "Processed Graphite", "black", 2.1);
INSERT INTO part VALUES (10023, "Cushion Piece", "red", 100.3);
INSERT INTO part VALUES (23044, "Bobbin", "black", 2.3);
INSERT INTO supplier VALUES (4122, "Horizon Systems", "Pune", "MSC Bank");
INSERT INTO supplier VALUES (9162, "Ikea", "Stockholm", "Swedbank");
INSERT INTO supplier VALUES (4518, "MPQMDSPH Ltd.", "Philadelphia", "Bank of America");
INSERT INTO supplier VALUES (4590, "Weno Mech", "Philadelphia", "Bank of America");
INSERT INTO supplier VALUES (7800, "Ainsama Motors", "Bengaluru", "State Bank of Karnataka")
INSERT INTO shipment VALUES(1100232, 10034, 4518, "2022-09-05", 1000, 32.8);
INSERT INTO shipment VALUES(1100233, 10034, 9162, "2022-09-15", 3000, 35.4);
INSERT INTO shipment VALUES(1100234, 10034, 4590, "2022-08-25", 5000, 50.5);
INSERT INTO shipment VALUES(2200232, 10034, 4590, "2022-07-05", 6700, 20.3);
INSERT INTO shipment VALUES(2200233, 30034, 7800, "2022-05-04", 5600, 20.4);
INSERT INTO shipment VALUES(2200234, 30034, 4590, "2022-07-12", 5000, 10.9);
INSERT INTO shipment VALUES(3300232, 30034, 9162, "2022-08-23", 100, 12.4);
INSERT INTO shipment VALUES(3300233, 30034, 4122, "2022-05-06", 4560, 7.8);
INSERT INTO shipment VALUES(3300234, 12154, 4518, "2022-02-21", 1003, 300.4);
INSERT INTO shipment VALUES(4400232, 12154, 2143, "2022-02-23", 1040, 212.4);
INSERT INTO shipment VALUES(4400233, 12154, 7800, "2022-02-07", 2000, 222.4);
INSERT INTO shipment VALUES(4400234, 12154, 9162, "2022-01-03", 1033, 195.4);
INSERT INTO shipment VALUES(5500232, 10023, 4518, "2022-09-02", 220, 5000);
INSERT INTO shipment VALUES(5500234, 10023, 4122, "2022-08-19", 300, 5990);
INSERT INTO shipment VALUES(5500235, 10023, 7800, "2022-08-14", 700, 7400);
INSERT INTO shipment VALUES(5500237, 10023, 9162, "2022-08-23", 750, 7410);
INSERT INTO shipment VALUES(6600232, 23044, 4518, "2022-08-30", 5200, 1.8);
INSERT INTO shipment VALUES(6600233, 23044, 2143, "2021-12-12", 9600, 2.4);
INSERT INTO shipment VALUES(6600230, 30134, 9162, "2020-02-20", 5000, 5.6);
INSERT INTO shipment VALUES(6600236, 23044, 9162, "2020-02-29", 5050, 3.4);
```

Output Screenshots:

```
mysql> source 200010003_2.sql
Query OK, 1 row affected (0.00 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.00 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.00 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.02 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.00 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.02 sec)
Query OK, 1 row affected (0.00 sec)
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Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.01 sec)
Query OK, 1 row affected (0.00 sec)
```

	art-name	color weig		t
10023 C	ıshion Piece	red 100.3		-
10034 I	mager Chip	#ed795b	3.4	00
12154 P:	12154 Processed Graphite		2.1	00
23044 Bobbin 30034 Unknown Chip		black	2.3	00
		red	3.5	60
30134 B:	readboard	white	50.4	00
	+			bank
supplier-no	sup-name	city		Dank
	sup-name -+ Aurora Tech.	CITY + Bengalu	i	SBI
	Aurora Tech.	Bengalu	i	
2143 4122 4518	Aurora Tech. Horizon Systems MPQMDSPH Ltd.	+ Bengalum Pune Philade	ru lphia	SBI MSC Bank Bank of America
2143 4122 4518 4590	Aurora Tech. Horizon Systems MPQMDSPH Ltd. Weno Mech	Bengalu Pune Philade Philade	ru lphia lphia	SBI MSC Bank Bank of America Bank of America
4122 4518	Aurora Tech. Horizon Systems MPQMDSPH Ltd. Weno Mech Ainsama Motors	+ Bengalum Pune Philade	ru lphia lphia ru	SBI MSC Bank Bank of America

(b) All contents of tables 'part' and 'supplier'

(a) Insertions, Queries OK

hipment-no	part-no	supplier-no	date	quantity	price
1100232	10034	4518	2022-09-05	1000	32.80
1100233	10034	9162	2022-09-15	3000	35.40
1100234	10034	4590	2022-08-25	5000	50.50
2200232	10034	4590	2022-07-05	6700	20.30
2200233	30034	7800	2022-05-04	5600	20.40
2200234	30034	4590	2022-07-12	5000	10.90
3300232	30034	9162	2022-08-23	100	12.40
3300233	30034	4122	2022-05-06	4560	7.80
3300234	12154	4518	2022-02-21	1003	300.40
4400232	12154	2143	2022-02-23	1040	212.40
4400233	12154	7800	2022-02-07	2000	222.40
4400234	12154	9162	2022-01-03	1033	195.40
5500232	10023	4518	2022-09-02	220	5000.00
5500234	10023	4122	2022-08-19	300	5990.00
5500235	10023	7800	2022-08-14	700	7400.00
5500237	10023	9162	2022-08-23	750	7410.00
6600232	23044	4518	2022-08-30	5200	1.80
6600233	23044	2143	2021-12-12	9600	2.40
6600234	23044	4122	2020-02-20	5000	5.60
6600236	23044	9162	2020-02-29	5050	3.40

(c) All contents of tables 'shipment'

Figure 7: Insertion using source 200010003_2.sql

5 Question 5: SQL Queries for given questions

Input Queries:

```
-- (a) List suppliers who have supplied red parts.
SELECT DISTINCT `sup-name`
FROM (part NATURAL JOIN shipment) NATURAL JOIN supplier
WHERE color = "red";
-- (b) Get the total cost of shipments for all suppliers for making payments to them.
SELECT `supplier-no`, `sup-name`, SUM(quantity*price)
FROM shipment NATURAL JOIN supplier
GROUP BY shipment.`supplier-no`;
-- (c) List suppliers who have supplied all parts
SELECT supplier.`supplier-no`, supplier.`sup-name`
FROM (part NATURAL JOIN shipment) NATURAL JOIN supplier
GROUP BY supplier. `supplier-no`
HAVING COUNT(distinct part.`part-no`) = (
    SELECT COUNT(DISTINCT part.`part-no`)
    FROM part
);
```

Output Screeenshots:

Figure 8: All suppliers who have supplied red parts

```
mysql> SELECT `supplier-no`, `sup-name`, SUM(quantity*price) FROM shipment NATURAL JOIN supplier GROUP BY shipment.`supplier-no`;
 supplier-no | sup-name
                                 | SUM(quantity*price)
         2143
                                             364296.00
                Aurora Tech.
         4122
                Horizon Systems
                MPQMDSPH Ltd.
                                            1443461.20
                                            443010.00
5739040.00
         4590
                Weno Mech
         7800
                Ainsama Motors
               Ikea
                                            5911958.20
         9162
orows in set (0.01 sec)
```

Figure 9: Total cost of shipments for all suppliers

Figure 10: All suppliers who have supplied red parts