Snapshots of the Queries and Outputs

1.
```
mysql> create database student;
Query OK, 1 row affected (0.26 sec)
```

2.

```
mysql> describe StudentBasicInformation;
+--------------------------+-------------+------+-----+---------+-------+
| Field                    | Type        | Null | Key | Default | Extra |
+--------------------------+-------------+------+-----+---------+-------+
| StudentName              | varchar(25) | YES  |     | NULL    |       |
| StudentRollNo            | int(11)     | NO   | PRI | NULL    |       |
| studentAddress           | varchar(50) | YES  |     | NULL    |       |
| StudentDOB               | date        | YES  |     | NULL    |       |
| StudentBloodGroup        | varchar(5)  | YES  |     | NULL    |       |
| StudentScholarshipStatus | varchar(10) | YES  |     | NULL    |       |
+--------------------------+-------------+------+-----+---------+-------+
6 rows in set (0.08 sec)
```

```
mysql> describe StudentAdmissionPaymentDetails ;
+----------------------+-------------+------+-----+---------+-------+
| Field                | Type        | Null | Key | Default | Extra |
+----------------------+-------------+------+-----+---------+-------+
| StudentRollNo        | int(11)     | NO   | PRI | NULL    |       |
| AmountPaid           | int(11)     | YES  |     | NULL    |       |
| AmountBalance        | int(11)     | YES  |     | NULL    |       |
| SCholarshipOpted     | varchar(10) | YES  |     | NULL    |       |
| StudentName          | varchar(25) | YES  |     | NULL    |       |
| StudentDepartment    | varchar(20) | YES  |     | NULL    |       |
| StudentAdmissionDate | date        | YES  |     | NULL    |       |
+----------------------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

```
mysql> describe studentsubjectinformation ;
    -> &&
+-------------------------+-------------+------+-----+---------+-------+
| Field                   | Type        | Null | Key | Default | Extra |
+-------------------------+-------------+------+-----+---------+-------+
| SubjectOpted            | varchar(50) | YES  |     | NULL    |       |
| StudentRollNo           | int(11)     | NO   | PRI | NULL    |       |
| SubjectTotalMarks       | int(11)     | YES  |     | NULL    |       |
| SubjectObtainedMarks    | int(11)     | YES  |     | NULL    |       |
| StudentMarksPercentage  | int(11)     | YES  |     | NULL    |       |
| StudentOptedScholarship | varchar(10) | YES  |     | NULL    |       |
+-------------------------+-------------+------+-----+---------+-------+
6 rows in set (2.31 sec)
```

```
mysql> describe studentscholarshipinformation ;
    -> &&
+-------------------------+-------------+------+-----+---------+-------+
| Field                   | Type        | Null | Key | Default | Extra |
+-------------------------+-------------+------+-----+---------+-------+
| StudentRollNo           | int(11)     | NO   | PRI | NULL    |       |
| ScholarshipName         | varchar(20) | YES  |     | NULL    |       |
| ScholarshipDescription  | varchar(20) | YES  |     | NULL    |       |
| ScholarshipAmount       | int(11)     | YES  |     | NULL    |       |
| ScholarshipCategory     | varchar(20) | YES  |     | NULL    |       |
| StudentName             | varchar(20) | YES  |     | NULL    |       |
| StudentPercentage       | int(11)     | YES  |     | NULL    |       |
+-------------------------+-------------+------+-----+---------+-------+
7 rows in set (0.05 sec)
```

3. & 4.

```
mysql> select * from StudentBasicInformation;
+-------------+--------------+------------------+-------------+-------------------+--------------------------+
| StudentName | StudentRollNo | studentAddress   | StudentDOB  | StudentBloodGroup | StudentScholarshipStatus |
+-------------+--------------+------------------+-------------+-------------------+--------------------------+
| Rohan       |          101 | sector 2, kanpur | 1998-10-10  | A+                | Granted                  |
| Nikhil      |          102 | sector 2, noida  | 1999-05-15  | B+                | Granted                  |
| Neha        |          103 | sector 60, noida | 1996-05-20  | AB+               | Not Gtd                  |
| Swati       |          104 | sector 11, lucknow | 1997-06-20 | A-                | Not Gtd                  |
| Shreya      |          105 | sector 40, lucknow | 1998-10-25 | A+                | Granted                  |
| Sapna       |          106 | sector 11, mumbai | 1997-06-05  | A-                | Not Gtd                  |
| Priya       |          107 | sector 06, mumbai | 1999-09-14  | B+                | Not Gtd                  |
| Jyoti       |          108 | sector 16, chennai | 1999-09-22 | B+                | Not Gtd                  |
| Avika       |          109 | sector 62, kolkata | 1998-07-18 | AB-               | Not Gtd                  |
| Rahul       |          110 | sector 62, noida | 1999-02-19  | A-                | Not Gtd                  |
+-------------+--------------+------------------+-------------+-------------------+--------------------------+
10 rows in set (0.07 sec)
```

```
mysql> select * from StudentAdmissionPaymentDetails;
+--------------+------------+--------------+-----------------+-------------+-------------------+---------------------+
| StudentRollNo | AmountPaid | AmountBalance | SCholarshipOpted | StudentName | StudentDepartment | StudentAdmissionDate |
+--------------+------------+--------------+-----------------+-------------+-------------------+---------------------+
|          101 |      10000 |         2000 | Yes             | Rohan       | Computer          | 2017-07-20          |
|          102 |      10000 |            0 | Yes             | Nikhil      | Computer          | 2017-07-20          |
|          103 |      20000 |        10000 | Yes             | Neha        | Maths             | 2017-05-10          |
|          104 |      10000 |            0 | NO              | Swati       | Maths             | 2017-05-10          |
|          105 |      10000 |            0 | Yes             | Shreya      | Maths             | 2017-05-10          |
|          106 |      10000 |         3000 | Yes             | Sapna       | Computer          | 2017-07-20          |
|          107 |      10000 |            0 | No              | Priya       | Computer          | 2017-07-20          |
|          108 |      10000 |            0 | No              | Jyoti       | English           | 2016-06-15          |
|          109 |      10000 |            0 | Yes             | Avika       | English           | 2016-06-15          |
|          110 |      10000 |            0 | Yes             | Rahul       | English           | 2016-06-15          |
+--------------+------------+--------------+-----------------+-------------+-------------------+---------------------+
10 rows in set (0.09 sec)
```

```
mysql> select * from StudentSubjectInformation;
+-------------+--------------+------------------+---------------------+-----------------------+-------------------------+
| SubjectOpted | StudentRollNo | SubjectTotalMarks | SubjectObtainedMarks | StudentMarksPercentage | StudentOptedScholarship |
+-------------+--------------+------------------+---------------------+-----------------------+-------------------------+
| Computer    |          101 |              100 |                  98 |                    98 | Yes                     |
| Computer    |          102 |              100 |                  99 |                    99 | Yes                     |
| Maths       |          103 |              100 |                  91 |                    91 | Yes                     |
| Maths       |          104 |              100 |                  88 |                    88 | No                      |
| Maths       |          105 |              100 |                  99 |                    99 | Yes                     |
| Computer    |          106 |              100 |                  92 |                    92 | Yes                     |
| Computer    |          107 |              100 |                  91 |                    91 | No                      |
| English     |          108 |              100 |                  86 |                    86 | No                      |
| English     |          109 |              100 |                  89 |                    89 | Yes                     |
| English     |          110 |              100 |                  93 |                    93 | Yes                     |
+-------------+--------------+------------------+---------------------+-----------------------+-------------------------+
10 rows in set (0.00 sec)
```

```
mysql> select * from StudentScholarshipInformation;
+--------------+----------------+-----------------------+------------------+--------------------+-------------+------------------+
| StudentRollNo | ScholarshipName | ScholarshipDescription | ScholarshipAmount | ScholarshipCategory | StudentName | StudentPercentage |
+--------------+----------------+-----------------------+------------------+--------------------+-------------+------------------+
|          101 | BPL            | For BPL students      |            20000 | B                  | Rohan       |               98 |
|          102 | DSS            | For deserving stds    |            15000 | A                  | Nikhil      |               99 |
|          103 | Ns             | No scholarship        |                0 | C                  | Neha        |               91 |
|          104 | Ns             | No scholarship        |                0 | C                  | Swati       |               88 |
|          105 | DSS            | For deserving stds    |            15000 | A                  | Shreya      |               99 |
|          106 | Ns             | No scholarship        |                0 | C                  | Sapna       |               92 |
|          107 | Ns             | No scholarship        |                0 | C                  | Priya       |               91 |
|          108 | Ns             | No scholarship        |                0 | C                  | Jyoti       |               86 |
|          109 | Ns             | No scholarship        |                0 | C                  | Avika       |               89 |
|          110 | Ns             | No scholarship        |                0 | C                  | Rahul       |               93 |
+--------------+----------------+-----------------------+------------------+--------------------+-------------+------------------+
10 rows in set (0.00 sec)
```

5. & 6.

```
mysql> update StudentBasicInformation set StudentAddress="sector 1,noida" where StudentRollNo=101 ;
Query OK, 1 row affected (0.23 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update StudentBasicInformation set StudentAddress="sector 2,noida" where StudentRollNo=102 ;
Query OK, 1 row affected (0.11 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update StudentBasicInformation set StudentAddress="sector 9,noida" where StudentRollNo=104 ;
Query OK, 1 row affected (0.19 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update StudentBasicInformation set StudentAddress="sector 55,noida" where StudentRollNo=106 ;
Query OK, 1 row affected (0.17 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update StudentBasicInformation set StudentAddress="sector 59,noida" where StudentRollNo=110 ;
Query OK, 1 row affected (0.08 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from StudentBasicInformation;
+-------------+--------------+-------------------+------------+------------------+--------------------------+
| StudentName | StudentRollNo | studentAddress     | StudentDOB | StudentBloodGroup | StudentScholarshipStatus |
+-------------+--------------+-------------------+------------+------------------+--------------------------+
| Rohan       |          101 | sector 1,noida     | 1998-10-10 | A+                | Granted                  |
| Nikhil      |          102 | sector 2,noida     | 1999-05-15 | B+                | Granted                  |
| Neha        |          103 | sector 60, noida   | 1996-05-20 | AB+               | Not Gtd                  |
| Swati       |          104 | sector 9,noida     | 1997-06-20 | A-                | Not Gtd                  |
| Shreya      |          105 | sector 40, lucknow | 1998-10-25 | A+                | Granted                  |
| Sapna       |          106 | sector 55,noida    | 1997-06-05 | A-                | Not Gtd                  |
| Priya       |          107 | sector 06, mumbai  | 1999-09-14 | B+                | Not Gtd                  |
| Jyoti       |          108 | sector 16, chennai | 1999-09-22 | B+                | Not Gtd                  |
| Avika       |          109 | sector 62, kolkata | 1998-07-18 | AB-               | Not Gtd                  |
| Rahul       |          110 | sector 59,noida    | 1999-02-19 | A-                | Not Gtd                  |
+-------------+--------------+-------------------+------------+------------------+--------------------------+
10 rows in set (0.00 sec)
```

7.

```
mysql> update StudentScholarshipInformation set ScholarshipAmount=4000 where StudentRollNo=105;
Query OK, 1 row affected (0.10 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from StudentScholarshipInformation where ScholarshipAmount>5000;
+--------------+----------------+-----------------------+------------------+--------------------+-------------+------------------+
| StudentRollNo | ScholarshipName | ScholarshipDescription | ScholarshipAmount | ScholarshipCategory | StudentName | StudentPercentage |
+--------------+----------------+-----------------------+------------------+--------------------+-------------+------------------+
|          101 | BPL            | For BPL students      |            20000 | B                  | Rohan       |               98 |
|          102 | DSS            | For deserving stds    |            15000 | A                  | Nikhil      |               99 |
+--------------+----------------+-----------------------+------------------+--------------------+-------------+------------------+
2 rows in set (0.00 sec)

mysql>
```

8.

```
mysql> Select distinct t1.studentname from studentbasicinformation t1, studentadmissionpaymentdetails t2 Where t1.studentscholarshipstatus='Not Gtd' and t1.studentrolln
o in (select studentrollno from studentadmissionpaymentdetails where scholarshipopted='Yes');
+-------------+
| studentname |
+-------------+
| Neha        |
| Sapna       |
| Avika       |
| Rahul       |
+-------------+
4 rows in set (0.00 sec)

mysql> Select distinct t1.studentname,t1.studentrollno from studentbasicinformation t1, studentadmissionpaymentdetails t2 Where t1.studentscholarshipstatus='Not Gtd' an
d t1.studentrollno in (select studentrollno from studentadmissionpaymentdetails where scholarshipopted='Yes');
+-------------+--------------+
| studentname | studentrollno |
+-------------+--------------+
| Neha        |          103 |
| Sapna       |          106 |
| Avika       |          109 |
| Rahul       |          110 |
+-------------+--------------+
4 rows in set (0.00 sec)

mysql>
```

9.

```
mysql> delimiter &&
mysql> create procedure fillin()
    -> begin
    -> update studentsubjectinformation
    -> set studentmarkspercentage=(subjectobtainedmarks*100)/subjecttotalmarks;
    -> end &&
Query OK, 0 rows affected (0.49 sec)
```

10.

```
mysql> delimiter ;
mysql> create procedure scholarcat()
   -> begin
   -> update studentscholarshipinformation
   -> case when studentrollno in(select studentrollno from studentscholarshipinformation where studentpercentage between 95 and 100 ) then "Deserved"
   -> else "Not Deserved"
   -> end;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'case when stu
dentrollno in(select studentrollno from studentscholarshipinformati' at line 4
```

11.

```
mysql> delimiter ??
mysql> create view balanceamt as
    -> select a.studentrollno,a.studentname,b.amountbalance
    -> from studentbasicinformation a join studentadmissionpaymentdetails b
    -> where a.studentrollno=b.studentrollno;
    -> end ??
Query OK, 0 rows affected (2.67 sec)
```

12.

```
mysql> select a.studentrollno, a.studentname from studentscholarshipinformation a join studentbasicinformation b where a.studentrollno=b.studentrollno and b.studentscho
larshipstatus="Not Gtd";
   -> delimiter ;
   -> select a.studentrollno, a.studentname from studentscholarshipinformation a join studentbasicinformation b where a.studentrollno=b.studentrollno and b.studentscho
larshipstatus="Not Gtd";
   -> end;
   -> describe &&
+--------------+-------------+
| studentrollno | studentname |
+--------------+-------------+
|          103 | Neha        |
|          104 | Swati       |
|          106 | Sapna       |
|          107 | Priya       |
|          108 | Jyoti       |
|          109 | Avika       |
|          110 | Rahul       |
+--------------+-------------+
```

13.

records

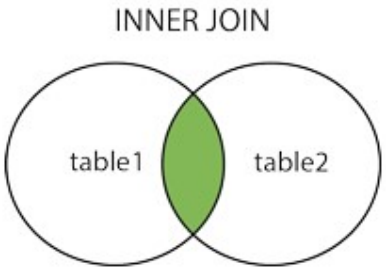
```
mysql> delimiter &&
mysql> create procedure showbalance(in rollno int , out balance int)
    -> begin
    -> select amountbalance from studentadmissionpaymentdetails
    -> where studentrollno=rollno;
    -> end&&
Query OK, 0 rows affected (0.22 sec)

mysql> delimiter;
    -> ^C
mysql> call showbalance(101,@balance&&
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '' at line 1
mysql> call showbalance(101,@balance) &&
+---------------+
| amountbalance |
+---------------+
|          2000 |
+---------------+
1 row in set (0.08 sec)

Query OK, 0 rows affected (0.08 sec)
```

14.

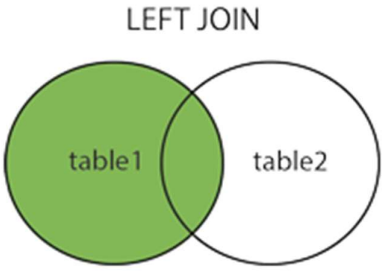
```
mysql> select a.studentrollno , a.studentname from studentbasicinformation a , studentsubjectinformation b order by b.studentmarkspercentage desc limit 5 ;
   -> &&
+--------------+-------------+
| studentrollno | studentname |
+--------------+-------------+
|          103 | Neha        |
|          107 | Priya       |
|          102 | Nikhil      |
|          106 | Sapna       |
|          110 | Rahul       |
+--------------+-------------+
5 rows in set (0.10 sec)
```

15. The three types of joins are :

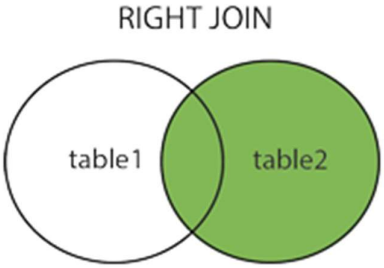
a) Inner Join – Used when we want records that have matching values in both the tables.



b) Left Join - Used when we want records from the left table and matched records from the right table.



c) Right Join- Used when we want records from the right table matched with records from the left table.




```
mysql> select studentbasicinformation.studentrollno ,studentbasicinformation.studentname from studentbasicinformation inner join studentadmissionpaymentdetails on stude
ntbasicinformation.studentrollno=studentadmissionpaymentdetails.studentrollno where amountbalance=0 ;
    -> &&
+--------------+-------------+
| studentrollno | studentname |
+--------------+-------------+
|          102 | Nikhil      |
|          104 | Swati       |
|          105 | Shreya      |
|          107 | Priya       |
|          108 | Jyoti       |
|          109 | Avika       |
|          110 | Rahul       |
+--------------+-------------+
7 rows in set (0.00 sec)
```

```
mysql> select studentbasicinformation.studentrollno ,studentbasicinformation.studentname from studentbasicinformation left join studentadmissionpaymentdetails on studen
tbasicinformation.studentrollno=studentadmissionpaymentdetails.studentrollno where amountbalance=0 ;
    -> &&
+--------------+-------------+
| studentrollno | studentname |
+--------------+-------------+
|          102 | Nikhil      |
|          104 | Swati       |
|          105 | Shreya      |
|          107 | Priya       |
|          108 | Jyoti       |
|          109 | Avika       |
|          110 | Rahul       |
+--------------+-------------+
7 rows in set (0.05 sec)
```

```
mysql> select studentbasicinformation.studentrollno ,studentbasicinformation.studentname from studentbasicinformation right join studentadmissionpaymentdetails on stude
ntbasicinformation.studentrollno=studentadmissionpaymentdetails.studentrollno where amountbalance=0 ;
    -> &&
+--------------+-------------+
| studentrollno | studentname |
+--------------+-------------+
|          102 | Nikhil      |
|          104 | Swati       |
|          105 | Shreya      |
|          107 | Priya       |
|          108 | Jyoti       |
|          109 | Avika       |
|          110 | Rahul       |
+--------------+-------------+
7 rows in set (0.00 sec)
```

16. Truncate -It is a data definition language operation. It is used to delete all the records from the table but not the table.

Drop – It is a data definition language operation. It is used to delete the entire structure of table.

Delete – It is a data manipulation language operation. It is used to delete the records of an existing table.

17.

```
mysql> select scholarshipcategory, count(scholarshipcategory) from studentscholarshipinformation group by scholarshipcategory;
    -> &&
+--------------------+--------------------------+
| scholarshipcategory | count(scholarshipcategory) |
+--------------------+--------------------------+
| B                  |                        1 |
| A                  |                        2 |
| C                  |                        7 |
+--------------------+--------------------------+
3 rows in set (0.09 sec)
```

18.

```
mysql> select scholarshipcategory, count(scholarshipcategory) from studentscholarshipinformation group by scholarshipcategory order by count(scholarshipcategory) desc l
imit 1;
    -> &&
+--------------------+--------------------------+
| scholarshipcategory | count(scholarshipcategory) |
+--------------------+--------------------------+
| C                  |                        7 |
+--------------------+--------------------------+
1 row in set (0.08 sec)

mysql>
```

20.

a) Executable

Store procedure: We can execute the stored procedures when required.

Function: We can call a function whenever required. Function can't be executed because a function is not in pre-compiled form.

Trigger: Trigger can be executed automatically on specified action on a table like, update, delete, or update.

b) Calling

Stored procedure: Stored Procedures can't be called from a function because functions can be called from a select statement and Stored Procedures can't be called from. But you can call Store Procedure from Trigger.

Function: Function can be called from Store Procedure or Trigger.

Trigger: Trigger can’t be called from Store Procedure or Function.

c) Parameter

Store procedure: Stored Procedures can accept any type of parameter. Stored Procedures also accept out parameter.

Function: Function can accept any type of parameter. But function can’t accept out parameter.

Trigger: We can’t pass a parameter to trigger.

d) Return

Store procedure: Stored Procedures may or may not return any values (Single or table) on execution.

Function: Function must return any value.

Trigger: Trigger never return value on execution.