

```
mysql> create database assign6;  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> use assign6;  
Database changed
```

```
mysql> create table Stud_Info(RNo int(3) PRIMARY KEY, Name varchar(20), Address varchar(40));  
Query OK, 0 rows affected, 1 warning (0.01 sec)
```

```
mysql> INSERT INTO Stud_Info VALUES  
-> (1, 'Rajesh Kumar', 'Navjivan Society, Mumbai'),  
-> (2, 'Priya Gupta', 'DLF City, Delhi'),  
-> (3, 'Anjali Sharma', 'Jamli Naka, Mumbai'),  
-> (4, 'Amit Verma', 'Saligramam, Chennai'),  
-> (5, 'Sunita Singh', 'Shanti Nagar, Mumbai'),  
-> (6, 'Manish Gupta', 'Thakurdwar, Mumbai'),  
-> (7, 'Neha Patel', 'Chembur, Mumbai'),  
-> (8, 'Akash Joshi', 'Rajgor Chambers, Mumbai'),  
-> (9, 'Sapna Shah', 'Ellisbridge, Ahmedabad');
```

```
Query OK, 9 rows affected (0.00 sec)
```

```
Records: 9 Duplicates: 0 Warnings: 0
```

```
mysql> select * from Stud_Info;
```

RNo	Name	Address
1	Rajesh Kumar	Navjivan Society, Mumbai
2	Priya Gupta	DLF City, Delhi
3	Anjali Sharma	Jamli Naka, Mumbai
4	Amit Verma	Saligramam, Chennai
5	Sunita Singh	Shanti Nagar, Mumbai
6	Manish Gupta	Thakurdwar, Mumbai
7	Neha Patel	Chembur, Mumbai
8	Akash Joshi	Rajgor Chambers, Mumbai
9	Sapna Shah	Ellisbridge, Ahmedabad

```
9 rows in set (0.00 sec)
```

```
mysql> create table Stud_Marks (RNo int PRIMARY KEY, DBMS int(2), TOC int(2), CN int(2));  
Query OK, 0 rows affected, 3 warnings (0.01 sec)
```

```
mysql> insert into Stud_Marks values (1,76,81,85), (2,82,81,89), (3,88,69,90),  
(4,90,82,95), (5,85,70,65), (6,95,80,97), (7,82,66,90), (8,91,92,96), (9,89,78,88);  
Query OK, 9 rows affected (0.00 sec)
```

```
Records: 9 Duplicates: 0 Warnings: 0
```

```
mysql> select * from Stud_Marks;
```

RNo	DBMS	TOC	CN
1	76	81	85
2	82	81	89
3	88	69	90
4	90	82	95
5	85	70	65
6	95	80	97
7	82	66	90
8	91	92	96
9	89	78	88

9 rows in set (0.00 sec)

```
mysql> DELIMITER $
```

```
mysql> CREATE PROCEDURE CalculateAverageScoresImplicit()
```

```
-> BEGIN
```

```
-> DECLARE done INT DEFAULT 0;
```

```
-> DECLARE studentRNo INT;
```

```
-> DECLARE studentName VARCHAR(20);
```

```
-> DECLARE studentAddress VARCHAR(40);
```

```
-> DECLARE dbmsScore INT;
```

```
-> DECLARE tocScore INT;
```

```
-> DECLARE cnScore INT;
```

```
-> DECLARE avgScore DECIMAL(5, 2);
```

```
-> DECLARE cur CURSOR FOR SELECT SI.RNo, SI.Name, SI.Address, SM.DBMS, SM.TOC, SM.CN
```

```
-> FROM Stud_Info SI
```

```
-> JOIN Stud_Marks SM ON SI.RNo = SM.RNo;
```

```
-> DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = 1;
```

```
-> OPEN cur;
```

```
-> read_loop: LOOP
```

```
-> FETCH cur INTO studentRNo, studentName, studentAddress, dbmsScore, tocScore, cnScore;
```

```
-> IF done THEN
```

```
-> LEAVE read_loop;
```

```
-> END IF;
```

```
-> SET avgScore = (dbmsScore + tocScore + cnScore) / 3;
```

```
-> SELECT studentRNo, studentName, studentAddress, avgScore;
```

```
-> END LOOP;
```

```
-> CLOSE cur;
```

```
-> END$
```

```
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> CALL CalculateAverageScoresImplicit()$
```

studentRNo	studentName	studentAddress	avgScore
1	Rajesh Kumar	Navjivan Society, Mumbai	80.67

1 row in set (0.00 sec)

studentRNo	studentName	studentAddress	avgScore
2	Priya Gupta	DLF City, Delhi	84.00

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
3	Anjali Sharma	Jamli Naka, Mumbai	82.33

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
4	Amit Verma	Saligramam, Chennai	89.00

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
5	Sunita Singh	Shanti Nagar, Mumbai	73.33

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
6	Manish Gupta	Thakurdwar, Mumbai	90.67

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
7	Neha Patel	Chembur, Mumbai	79.33

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
8	Akash Joshi	Rajgor Chambers, Mumbai	93.00

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
9	Sapna Shah	Ellisbridge, Ahmedabad	85.00

1 row in set (0.01 sec)

Query OK, 0 rows affected (0.01 sec)

```
mysql> CREATE PROCEDURE CalculateAverageScoresExplicit()
-> BEGIN
-> DECLARE done INT DEFAULT 0;
-> DECLARE studentRNo INT;
-> DECLARE studentName VARCHAR(20);
-> DECLARE studentAddress VARCHAR(40);
-> DECLARE dbmsScore INT;
-> DECLARE tocScore INT;
-> DECLARE cnScore INT;
-> DECLARE avgScore DECIMAL(5, 2);
-> DECLARE cur CURSOR FOR SELECT SI.RNo, SI.Name, SI.Address, SM.DBMS, SM.TOC, SM.CN
-> FROM Stud_Info SI
-> JOIN Stud_Marks SM ON SI.RNo = SM.RNo;
-> DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = 1;
-> OPEN cur;
-> read_loop: LOOP
-> FETCH cur INTO studentRNo, studentName, studentAddress, dbmsScore, tocScore, cnScore;
-> IF done THEN
-> LEAVE read_loop;
-> END IF;
-> SET avgScore = (dbmsScore + tocScore + cnScore) / 3;
```

```
-> SELECT studentRNo, studentName, studentAddress, avgScore;
-> END LOOP;
-> CLOSE cur;
-> END$
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> CALL CalculateAverageScoresExplicit()$
```

studentRNo	studentName	studentAddress	avgScore
1	Rajesh Kumar	Navjivan Society, Mumbai	80.67

1 row in set (0.00 sec)

studentRNo	studentName	studentAddress	avgScore
2	Priya Gupta	DLF City, Delhi	84.00

1 row in set (0.00 sec)

studentRNo	studentName	studentAddress	avgScore
3	Anjali Sharma	Jamli Naka, Mumbai	82.33

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
4	Amit Verma	Saligramam, Chennai	89.00

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
5	Sunita Singh	Shanti Nagar, Mumbai	73.33

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
6	Manish Gupta	Thakurdwar, Mumbai	90.67

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
7	Neha Patel	Chembur, Mumbai	79.33

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
8	Akash Joshi	Rajgor Chambers, Mumbai	93.00

1 row in set (0.01 sec)

studentRNo	studentName	studentAddress	avgScore
9	Sapna Shah	Ellisbridge, Ahmedabad	85.00

1 row in set (0.01 sec)

Query OK, 0 rows affected (0.01 sec)

```
mysql> CREATE PROCEDURE CalculateAverageScoresUsingCursorForLoop()
```

```
-> BEGIN
```

```
-> DECLARE done INT DEFAULT 0;
```

```
-> DECLARE studentRNo INT;
```

```
-> DECLARE studentName VARCHAR(20);
```

```
-> DECLARE studentAddress VARCHAR(40);
```

```
-> DECLARE avgScore DECIMAL(5, 2);
```

```
-> DECLARE cur CURSOR FOR SELECT RNo, Name, Address FROM
```

```
-> Stud_Info;
```

```
-> DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = 1;
```

```
-> OPEN cur;
```

```
-> read_loop: LOOP
```

```
-> FETCH cur INTO studentRNo, studentName, studentAddress;
```

```
-> IF done THEN
```

```
-> LEAVE read_loop;
```

```

-> END IF;
-> SELECT studentRNo, studentName, studentAddress;
-> SELECT AVG((DBMS + TOC + CN) / 3) INTO avgScore
-> FROM Stud_Marks
-> WHERE RNo = studentRNo;
-> SELECT avgScore;
-> END LOOP;
-> CLOSE cur;
-> END$

```

Query OK, 0 rows affected (0.00 sec)

```

mysql> CALL CalculateAverageScoresUsingCursorForLoop()$
+-----+-----+-----+
| studentRNo | studentName | studentAddress |
+-----+-----+-----+
|          1 | Rajesh Kumar | Navjivan Society, Mumbai |
+-----+-----+-----+
1 row in set (0.00 sec)

```

```

+-----+
| avgScore |
+-----+
|    80.67 |
+-----+
1 row in set (0.00 sec)

```

```

+-----+-----+-----+
| studentRNo | studentName | studentAddress |
+-----+-----+-----+
|          2 | Priya Gupta | DLF City, Delhi |
+-----+-----+-----+
1 row in set (0.00 sec)

```

```

+-----+
| avgScore |
+-----+
|    84.00 |
+-----+
1 row in set (0.00 sec)

```

```

+-----+-----+-----+
| studentRNo | studentName | studentAddress |
+-----+-----+-----+
|          3 | Anjali Sharma | Jamli Naka, Mumbai |
+-----+-----+-----+
1 row in set (0.00 sec)

```

```
+-----+
| avgScore |
```

```
+-----+
|      82.33 |
```

```
+-----+
```

```
1 row in set (0.01 sec)
```

```
+-----+-----+-----+
| studentRNo | studentName | studentAddress |
```

```
+-----+-----+-----+
|          4 | Amit Verma | Saligramam, Chennai |
```

```
+-----+-----+-----+
```

```
1 row in set (0.01 sec)
```

```
+-----+
| avgScore |
```

```
+-----+
|      89.00 |
```

```
+-----+
```

```
1 row in set (0.01 sec)
```

```
+-----+-----+-----+
| studentRNo | studentName | studentAddress |
```

```
+-----+-----+-----+
|          5 | Sunita Singh | Shanti Nagar, Mumbai |
```

```
+-----+-----+-----+
```

```
1 row in set (0.01 sec)
```

```
+-----+
| avgScore |
```

```
+-----+
|      73.33 |
```

```
+-----+
```

```
1 row in set (0.01 sec)
```

```
+-----+-----+-----+
| studentRNo | studentName | studentAddress |
```

```
+-----+-----+-----+
|          6 | Manish Gupta | Thakurdwar, Mumbai |
```

```
+-----+-----+-----+
```

```
1 row in set (0.01 sec)
```

```
+-----+
| avgScore |
```

```
+-----+
|      90.67 |
```

```
+-----+
```

```
1 row in set (0.01 sec)
```



```

+-----+
| studentRNo | studentName | studentAddress |
+-----+
|          7 | Neha Patel  | Chembur, Mumbai |
+-----+
1 row in set (0.01 sec)

```

```

+-----+
| avgScore |
+-----+
|    79.33 |
+-----+
1 row in set (0.01 sec)

```

```

+-----+
| studentRNo | studentName | studentAddress |
+-----+
|          8 | Akash Joshi | Rajgor Chambers, Mumbai |
+-----+
1 row in set (0.01 sec)

```

```

+-----+
| avgScore |
+-----+
|    93.00 |
+-----+
1 row in set (0.01 sec)

```

```

+-----+
| studentRNo | studentName | studentAddress |
+-----+
|          9 | Sapna Shah  | Ellisbridge, Ahmedabad |
+-----+
1 row in set (0.01 sec)

```

```

+-----+
| avgScore |
+-----+
|    85.00 |
+-----+
1 row in set (0.01 sec)

```

Query OK, 0 rows affected (0.01 sec)

```
mysql> CREATE PROCEDURE CalculateAverageScoresWithParameters(IN studentId INT)
-> BEGIN
-> DECLARE avgScore DECIMAL(5, 2);
-> SELECT AVG((DBMS + TOC + CN) / 3) INTO avgScore
-> FROM Stud_Marks
-> WHERE RNo = studentId;
-> SELECT avgScore;
-> END$
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> CALL CalculateAverageScoresWithParameters(1)$
```

```
+-----+
| avgScore |
+-----+
|    80.67 |
+-----+
```

1 row in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

```
mysql> DELIMITER ;
```
