Experiment 9

Aim: Write PL/SQL code block to calculate the area of circle for a value of radius varying from 1 to 10. Store the radius and the corresponding values of calculated area in a table named areas (radius, area)

Resources required: P-IV and above, Oracle

Theory:

```
BEGIN
    DECLARE pi float(5,4) DEFAULT 3.14;
    DECLARE r int(5);
    DECLARE a float(7,2);
    SET r = 1;
    WHILE r<=10 DO
            SET a = pi*r*r;
        INSERT INTO area values(r,a);
        SET r = r+1;
        END WHILE;
END
```

Conclusion: We have Successfully calculated area of circle for radius varying from 1 to 10 using code block in MySQL Command Line and Work Bench

Code and Output:

```
MySQL 8.0 Command Line Client - Unicode
mysql> use practical3;
Database changed
mysql> SHOW CREATE PROCEDURE area_of_circle;
+----------------+----------------------------------------------+--------------------...
+--------------------------------------------------------------------------------...
| Procedure      | sql_mode                                     | Create Procedure
                                        | character_set_client | collation_connection | Database Collation |
+----------------+----------------------------------------------+--------------------...
+--------------------------------------------------------------------------------...
| area_of_circle | STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION | CREATE DEFINER=`root`@`localhost` PROCEDURE `area_of_circle`()
BEGIN
    DECLARE pi float(5,4) DEFAULT 3.14;
    DECLARE r int(5);
    DECLARE a float(7,2);
    SET r = 1;
    WHILE r<=10 DO
            SET a = pi*r*r;
        INSERT INTO area values(r,a);
        SET r = r+1;

        END WHILE;

END | utf8mb4              | utf8mb4_0900_ai_ci   | utf8mb4_0900_ai_ci |
+----------------+----------------------------------------------+--------------------...
+--------------------------------------------------------------------------------...
1 row in set (0.00 sec)

mysql> CALL area_of_circle();
Query OK, 1 row affected (0.05 sec)

mysql> SELECT * from area;
+------+--------+
| r    | a      |
+------+--------+
|    1 |   3.14 |
|    2 |  12.56 |
|    3 |  28.26 |
|    4 |  50.24 |
|    5 |  78.50 |
|    6 | 113.04 |
|    7 | 153.86 |
|    8 | 200.96 |
|    9 | 254.34 |
|   10 | 314.00 |
+------+--------+
```