Exercise 5

1. Write a stored function to take three parameters, the sides of a triangle. The sides of the triangle should be accepted from the user. The function should return a Boolean value:- true if the triangle is valid, false otherwise. A triangle is valid if the length of each side is less than the sum of the lengths of the other two sides. Check if the dimensions entered can form a valid triangle.

Ans:

```
DELIMITER //
CREATE FUNCTION isValidTriangle(a INT, b INT, c INT)
RETURNS BOOLEAN
DETERMINISTIC
BEGIN
  DECLARE result BOOLEAN;
  IF a + b > c AND b + c > a AND c + a > b THEN
    SET result = TRUE;
  ELSE
    SET result = FALSE;
  END IF;
  RETURN result;
END //
DELIMITER ;
```

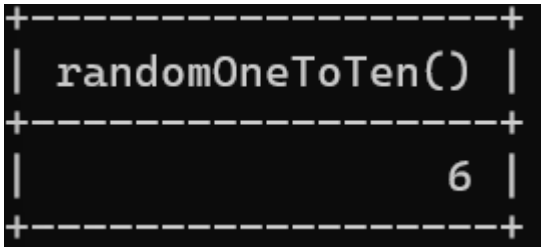
```
+--------------------------+
| isValidTriangle(3, 4, 5) |
+--------------------------+
|                        1 |
+--------------------------+
```

2. Write a function that generates a random number between 1 and 10. Use any logic of your choice to achieve this.

Ans:

```
CREATE FUNCTION randomOneToTen()
    -> RETURNS INT
```

```
-> DETERMINISTIC
-> BEGIN
->   RETURN FLOOR(1 + RAND() * 10);
-> END //
```



3. Create a function that accepts a string of n characters and exchanges the first character with the last, the second with the next – to – last, and so forth until n exchanges have been made. What will the final string look like? Write the function to verify your conclusion.

Ans:

```
DELIMITER //
CREATE FUNCTION reverseSwap(s VARCHAR(100))
RETURNS VARCHAR(100)
DETERMINISTIC
BEGIN
  DECLARE i INT DEFAULT 1;
  DECLARE j INT;
  DECLARE temp CHAR(1);
  DECLARE result VARCHAR(100);
  SET result = s;
  SET j = CHAR_LENGTH(s);
  WHILE i < j DO
    SET result = INSERT(result, i, 1, SUBSTRING(s, j, 1));
    SET result = INSERT(result, j, 1, SUBSTRING(s, i, 1));
    SET i = i + 1;
    SET j = j - 1;
  END WHILE;
```

```
  RETURN result;

END //

DELIMITER ;
```

```
+----------------------+
| reverseSwap('abcde') |
+----------------------+
| edcba                |
+----------------------+
```