Exercise 2

1. Select from any table a number and determine whether it is within a given range (for example, between 1 and 10).

Ans:

```
create procedure check_range(in num int,in inrange int ,in outrange int, out is_in_range
boolean)
    -> begin
    -> if num between inrange and outrange then
    -> set is_in_range=true;
    -> else
    -> set is_in_range=false;
    -> end if;
    -> end//
```

```
+-------------+
| is_in_range |
+-------------+
|           1 |
+-------------+
```

2. Select from any table three positive integers representing the sides of a triangle, and determine whether they form a valid triangle. Hint: In a triangle, the sum of any two sides must always be greater than the third side.

Ans:

```
create procedure triangle(s1 int,s2 int,s3 int)
    -> begin
    -> declare result varchar(50);
    -> if s1+s2>s3 and s2+s3>s1 and s1+s3>s2 then
    -> set result = 'It is valid triangle';
    -> else
    -> set result = 'It is not a valid triangle';
    -> end if;
    -> select s1 as `side 1`,s2  as `side 2`,s3 as `side 3`,result as is_valid;
```

-> end//

```
mysql> call triangle(3,4,5);
+--------+--------+--------+--------------------+
| side 1 | side 2 | side 3 | is_valid           |
+--------+--------+--------+--------------------+
|      3 |      4 |      5 | It is valid triangle |
+--------+--------+--------+--------------------+
```

3. Check if a given a year is a leap year. The condition is:- year should be (divisible by 4 and not divisible by 100) or (divisible by 4 and divisible by 400.). The year should be Selected from some table.

Ans: DELIMITER //

mysql> CREATE PROCEDURE isleapyear(in_year INT)

-> BEGIN

-> DECLARE result BOOLEAN;

-> IF (in_year MOD 4 = 0 AND in_year MOD 100 != 0) OR (in_year MOD 400 = 0) THEN

-> SET result = TRUE;

-> ELSE

-> SET result = FALSE;

-> END IF;

-> SELECT in_year AS 'Entered Year', result AS 'Is Leap Year';

-> END//

```
+--------------+--------------+
| Entered Year | Is Leap Year |
+--------------+--------------+
|         2024 |            1 |
+--------------+--------------+
```

4. Write a program that Selects from any table two character strings. Your program should then determine if one character string exists inside another character string.

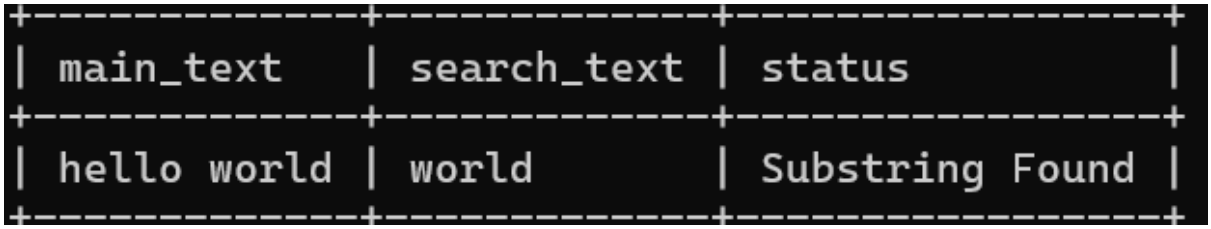
Ans:

DELIMITER //

CREATE PROCEDURE checkSubstring()

BEGIN

```
    DECLARE text1 VARCHAR(100);
    DECLARE text2 VARCHAR(100);
    DECLARE result VARCHAR(50);
    SELECT str1, str2 INTO text1, text2 FROM strings_table LIMIT 1;
    IF LOCATE(text2, text1) > 0 THEN
        SET result = 'Substring Found';
    ELSE
        SET result = 'Substring Not Found';
    END IF;
    SELECT text1 AS main_text, text2 AS search_text, result AS status;
END//
DELIMITER ;
```



main_text	search_text	status
hello world	world	Substring Found