❖ EXERCISE-1

1) Write a program that computes the perimeter and the area of a rectangle. Define your own values for the length and width. (Assuming that L and W are the length and width of the rectangle, Perimeter = 2*(L+W) and Area = L*W.

⟹ DELIMITER //

create procedure Rectangle()

-> BEGIN

-> DECLARE L INT DEFAULT 5;

-> DECLARE W INT DEFAULT 3;
-> DECLARE PERIMETER INT;

-> DECLARE AREA INT;

-> SET PERIMETER = 2 * (L+W);

-> SET AREA = L*W;

-> SELECT L as LENGTH,W as WIDTH,PERIMETER as Perimeter,AREA as Area;

-> END //
DELIMITER ;
call Rectangle();

2) Write a program that declares an integer variable called num, assigns a value to it, and computes and inserts into the tempp table the value of the variable itself, its square, and its cube.

⟹ DELIMITER //
CREATE PROCEDURE Rectangle(IN input INT)
-> BEGIN
-> DECLARE sq INT;
-> DECLARE cb INT;
-> SET sq = input * input;

```sql
    -> SET cb = input * input * input;
    -> INSERT INTO tempp(num,square,`cube`) VALUES
(input,sq,cb);
    -> END //
DELIMITER ;
call Rectangle();
```

3) Convert a temperature in Fahrenheit (F) to its equivalent in Celsius (C) and vice versa. The required formulae are:- C= (F-32)*5/9 F= 9/5*C + 32

$\Rightarrow$
```sql
DELIMITER //
CREATE PROCEDURE TEMPCAL( IN pval
DECIMAL(10,2),IN punit CHAR(2),OUT presl
DECIMAL(10,2))
    -> BEGIN
    -> IF punit = 'F' THEN
    -> SET presl = (pval - 32) * 5 / 9;
    -> ELSEIF punit = 'C' THEN
    -> SET presl = (9 / 5) * pval + 32;
    -> ELSE
    -> SIGNAL SQLSTATE '45000'
    -> SET MESSAGE_TEXT = 'Invalid temperature';
    -> END IF;
    -> END //
DELIMITER ;
SET @resl = 0;
CALL TEMPCAL(100,'F',@resl);
SELECT @resl as CELSIUS;
CALL TEMPCAL(40,'C',@resl);
SELECT @resl as FARENHEIT;
```

4) Convert a number of inches into yards, feet, and inches. For example, 124 inches equals 3 yards, 1 foot, and 4 inches.

```
⇒ DELIMITER //
  CREATE PROCEDURE Converting( IN total INT,OUT yards
  INT,OUT feet INT,OUT inch INT)
    -> BEGIN
    -> DECLARE remain INT;
    -> SET yards = total DIV 36;
    -> SET remain = total MOD 36;
    -> SET feet = remain DIV 12;
    -> SET inch = remain MOD 12;
    -> END //
DELIMITER ;
SET @yards = 0;
SET @feet = 0;
SET @inch = 0;
call Converting(124,@yards,@feet,@inch);
SELECT @yards as YARDS,@feet as FEET,@inch as INCHES;
```

5) Write a program that enables a user to input an integer. The program should then state whether the integer is evenly divisible by 5.

```
⇒ DELIMITER //
  CREATE PROCEDURE CheckDiv(IN input INT,OUT result
  VARCHAR(100))
    BEGIN
    IF input % 5 = 0 THEN
    SET result = CONCAT(input, 'is evenly divisible by 5');
     ELSE
     SET result = CONCAT(input, ' is not evenly divisible by 5');
     END IF;
     END //
```

DELIMITER ;
SET @resmsg = '';
CALL CheckDiv(10,@resmsg);
SELECT @resmsg as RESULT;
CALL CheckDiv(12,@resmsg);
SELECT @resmsg as RESULT;

6) Your block should read in two real numbers and tell whether the product of the two numbers is equal to or greater than 100.

⇒ DELIMITER //
CREATE PROCEDURE CheckProd(IN num1 DECIMAL(10,2),IN num2 DECIMAL(10,2),OUT resmsg VARCHAR(50))
-> BEGIN
-> DECLARE p DECIMAL(10,2);
-> SET p = num1 * num2;
-> IF p >= 100 THEN
-> SET resmsg = CONCAT('The product (', p ,') is greater than equal to 100');
-> ELSE
-> SET resmsg = CONCAT('The product (', p ,') is not greater than equal to 100');
-> END IF;
-> END //
DELIMITER ;
SET @resmsg = '';
CALL CheckProd(5.5,20,@resmsg);