Lab 7
Advanced Procedures

1)

```
create procedure fact(in x int, out result int)
begin
declare i int;
set result = 1;
set i = 1;
while i<=x do
set result = result*i;
set i = i+1;
end while;
end//
```

```
create procedure sine(in x float, in n float, out result float)
begin
declare ans,temp,sign,i float;
set ans = 0;
set i = 0;
set temp = 0;
set sign = 1;
while i<n do
call fact(2*i+1,@ans1);
set temp = sign*power(x,2*i+1)/@ans1;
set ans = ans+temp;
set sign = sign*-1;
set i = i+1;
end while;
set result = ans;
end
```

```
create procedure cos(in x float, in n float, out result float)
begin
declare ans,temp,sign,i float;
set ans = 1;
set i = 1;
set temp = 0;
set sign = -1;
while i<n do
```

```
call fact(2*i,@ans1);
set temp = sign*power(x,2*i)/@ans1;
set ans = ans+temp;
set sign = sign*-1;
set i = i+1;
end while;
set result = ans;
end

create procedure tan(in x float, in n float, out result float)
begin
call sine(x,n,@ans2);
call cos(x,n,@ans3);
set result = @ans2/@ans3;
end


create procedure log(in x float,in n float, out result float)
begin
declare ans,temp,sign,i float;
set ans = 0;
set i = 1;
set temp = 0;
set sign = 1;
while i<=n do
set temp = sign*power(x,i)/i;
set ans = ans+temp;
set sign = sign*-1;
set i = i+1;
end while;
set result = ans;
end


create procedure final(in x float,in n float, out result float)
begin
call tan(x,n,@ans2);
call log(x,n,@ans3);
set result = @ans2 + @ans3;
End
```

------------- TO CHECK ----------------------------

```
call final(0.785, 6, @ans43);//
Query OK, 0 rows affected (0.01 sec)

mysql> select @ans43;//
+--------------------+
| @ans43             |
+--------------------+
| 1.5630216598510742 |
+--------------------+
1 row in set (0.00 sec)

call final(1.05, 6, @ans43);//
Query OK, 0 rows affected (0.00 sec)

mysql> select @ans43;//
+--------------------+
| @ans43             |
+--------------------+
| 2.3559703826904297 |
+--------------------+
1 row in set (0.00 sec)
```

2)

```
create procedure fact(in x int, out result int)
begin
declare i int;
set result = 1;
set i = 1;
while i<=x do
set result = result*i;
set i = i+1;
end while;
end//
```

```
create procedure e(in x float, out result float)
begin
declare ans,i float;
```

```
set ans=1;
set i=1;
while i<=4 do
call fact(i,@ans100);
set ans=ans+power(x,i)/@ans100;
set i=i+1;
end while;
set result=ans;
end

create procedure recur(in c1 int, in c2 int, in c3 int, in c4 int, in n int, out result float)
begin
declare ans,i,t1,t2,t3,t4,v1,v2,v3,v4 float;
set t1 = 0;
set t2 = 0;
set t3 = 1;
set t4 = 1;
set i = 5;
call e(c1,v1);
call e(c2,v2);
call e(c3,v3);
call e(c4,v4);
while i<=n do
set ans = v1*t1+v2*t2+v3*t3+v4*t4;
set t1 = t2;
set t2 = t3;
set t3 = t4;
set t4 = ans;
set i = i+1;
end while;
set result = ans;
end;//
```

------------- TO CHECK ----------------------------

```
 mysql> call recur(1,1,1,1,5,@ans101);//
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> select @ans101;//
+--------------------+
| @ans101            |
+--------------------+
```

| 5.4166669845581055 |
+--------------------+
1 row in set (0.00 sec)
mysql> call recur(2,2,3,4,6,@ans101);//
Query OK, 0 rows affected (0.00 sec)

mysql> select @ans101;//
+--------------------+
| @ans101 |
+--------------------+
| 1764.3609619140625 |
+--------------------+
1 row in set (0.00 sec)

3)

```
mysql> CREATE PROCEDURE LOAN_INFO()
-> BEGIN
-> DECLARE n INT DEFAULT 0;
-> DECLARE i INT DEFAULT 0;
-> DECLARE LOAN_NO VARCHAR(20);
-> SELECT COUNT(*) INTO n FROM PAYMENT;
-> SET i = 0;
-> WHILE i < n DO
-> SELECT L_NO INTO LOAN_NO FROM PAYMENT LIMIT i,1;
-> IF LOCATE('car',LOAN_NO) > 0 THEN
-> SELECT 'CAR LOAN' AS LOAN_TYPE ;

-> ELSEIF LOCATE('hou',LOAN_NO) > 0 THEN
-> SELECT 'HOUSE LOAN' AS LOAN_TYPE;
-> ELSE
-> SELECT 'PERSONAL LOAN' AS LOAN_TYPE;
-> END IF;
-> SELECT B.CITY FROM BRANCH B INNER JOIN LOAN L ON
B.BRN_NAME = L.BR_NAME WHERE L.LN_NO = LOAN_NO;
-> SET i = i+1;
-> END WHILE;
-> END$$
Query OK, 0 rows affected (0.00 sec)
```

mysql> CALL LOAN_INFO()$$
+-----------+
| LOAN_TYPE |

```
+-----------+
| CAR LOAN  |
+-----------+
1 row in set (0.00 sec)
+---------------+
| CITY          |
+---------------+
| Vijayanagaram |
+---------------+
1 row in set (0.00 sec)
+-----------+
| LOAN_TYPE |
+-----------+
| CAR LOAN  |
+-----------+
1 row in set (0.00 sec)
+---------------+
| CITY          |
+---------------+
| Vijayanagaram |
+---------------+
1 row in set (0.00 sec)
+-----------+
| LOAN_TYPE |
+-----------+
| CAR LOAN  |

+-----------+
1 row in set (0.00 sec)
+---------------+
| CITY          |
+---------------+
| Vijayanagaram |
+---------------+
1 row in set (0.00 sec)
+-----------+
| LOAN_TYPE |
+-----------+
| CAR LOAN  |
+-----------+
1 row in set (0.00 sec)
+------------+
| CITY       |
+------------+
```

```
| Srikakulam |
+------------+
1 row in set (0.00 sec)
+------------+
| LOAN_TYPE |
+------------+
| HOUSE LOAN |
+------------+
1 row in set (0.00 sec)
+------------+
| CITY |
+------------+
| Vijayawada |
+------------+
1 row in set (0.00 sec)
+------------+
| LOAN_TYPE |
+------------+
| HOUSE LOAN |
+------------+
1 row in set (0.00 sec)
+------------+

| CITY |
+------------+
| Vijayawada |
+------------+
1 row in set (0.00 sec)
+------------+
| LOAN_TYPE |
+------------+
| HOUSE LOAN |
+------------+
1 row in set (0.00 sec)
+------------+
| CITY |
+------------+
| Vijayawada |
+------------+
1 row in set (0.00 sec)
+---------------+
| LOAN_TYPE |
+---------------+
| PERSONAL LOAN |
```

```
+---------------+
1 row in set (0.00 sec)
+-------+
| CITY  |
+-------+
| Eluru |
+-------+
1 row in set (0.00 sec)
+---------------+
| LOAN_TYPE     |
+---------------+
| PERSONAL LOAN |
+---------------+
1 row in set (0.01 sec)
+-------+
| CITY  |
+-------+
| Eluru |
+-------+

1 row in set (0.01 sec)
+---------------+
| LOAN_TYPE     |
+---------------+
| PERSONAL LOAN |
+---------------+
1 row in set (0.01 sec)
+----------+
| CITY     |
+----------+
| Kakinada |
+----------+
1 row in set (0.01 sec)
```