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DBMS LAB ENDSEM

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SET: ROLL NUMBERS ENDING WITH 1, 5,9

QUESTION A:-

Consider the employee data.
Employee (employee-id, employee-name, street, city)
Works (employee-name, company-name, salary)
Company (company-name, city)
Manages (employee-name, manager-name)

EMPLOYEE:-

```
MySQL  localhost:33060+ ssl  lab3  SQL > select * from employeee;
+-------+---------+----------+-------+
| empid | empname | street   | city  |
+-------+---------+----------+-------+
|     1 | ali     | street 1 | kochi |
|     2 | kumar   | street 2 | kochi |
|     3 | manav   | street 3 | delhi |
+-------+---------+----------+-------+
```

WORKS:-

```
MySQL  localhost:33060+ ssl  lab3  SQL > select * from works;
+-------+----------+--------+
| name  | compname | salary |
+-------+----------+--------+
| ali   | sbi bank |  60600 |
| kumar | uco bank |  40000 |
| manav | sbi bank |  23000 |
+-------+----------+--------+
```

COMPANY:-

```
MySQL  localhost:33060+ ssl  lab3  SQL > select * from company;
+----------+-----------+
| compname | city      |
+----------+-----------+
| sbi bank | hyderabad |
| uco bank | bangalore |
+----------+-----------+
```

MANAGES:-

```
MySQL  localhost:33060+ ssl  lab3  SQL > select * from manages;
+---------+---------+
| empname | manager |
+---------+---------+
| ali     | singh   |
| kumar   | jacob   |
| manav   | suraj   |
+---------+---------+
```

(i) Find the name of all employees who work for State Bank of India

```
MySQL  localhost:33060+ ssl  lab3  SQL > select empname from employeee as e inner join works as w on e.empname = w.name where compname ='sbi bank';
+---------+
| empname |
+---------+
| ali     |
| manav   |
+---------+
2 rows in set (0.0006 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

(ii) Find the names and cities of residence of all employees who work for State Bank of India

```
MySQL  localhost:33060+ ssl  lab3  SQL > select empname, city from employeee as e inner join works as w on e.empname = w.name where compname ='sbi bank';
+---------+-------+
| empname | city  |
+---------+-------+
| ali     | kochi |
| manav   | delhi |
+---------+-------+
2 rows in set (0.0006 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

(iii) Create a view for employee based on salary in ascending order

```
MySQL  localhost:33060+ ssl  lab3  SQL > create view q3View as select e.* from employeee as e inner join works as w on w.name = e.empname order by salary;
Query OK, 0 rows affected (0.0178 sec)
MySQL  localhost:33060+ ssl  lab3  SQL > select * from q3View;
+-------+---------+----------+-------+
| empid | empname | street   | city  |
+-------+---------+----------+-------+
|     3 | manav   | street 3 | delhi |
|     2 | kumar   | street 2 | kochi |
|     1 | ali     | street 1 | kochi |
+-------+---------+----------+-------+
3 rows in set (0.0016 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

(DO SCROLL DOWN)

(iv) Find all employees in the database who earn more than every employee of UCO Bank

```
MySQL  localhost:33060+ ssl  lab3  SQL > select name from works where salary > (select max(salary) from works as w inner join employeee as e on w.name = e.empname wher
e compname = 'uco bank' );
+------+
| name |
+------+
| ali  |
+------+
1 row in set (0.0006 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

(v) Find the employee in the database who earn minimum in state bank of India

```
MySQL  localhost:33060+ ssl  lab3  SQL > select empid, e.empname from employeee as e inner join works as w on w.name = e.empname where compname = 'sbi bank' order by s
alary limit 1;
+-------+---------+
| empid | empname |
+-------+---------+
|     3 | manav   |
+-------+---------+
1 row in set (0.0006 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

(vi) Create a Function that displays the employee who earn maximum in SBI

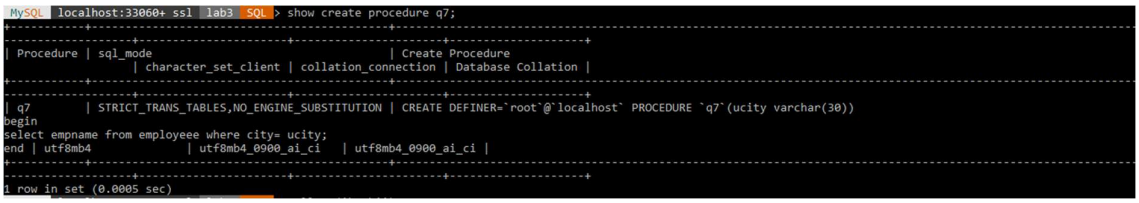
```
MySQL  localhost:33060+ ssl  lab3  SQL > show create function q6_correct;
+------------+-----------------------------------------+---------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------------------------------------------
-----------------------------+---------------------+----------------------+--------------------+
| Function   | sql_mode                                | Create Function

                             | character_set_client | collation_connection | Database Collation |
+------------+-----------------------------------------+---------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------------------------------------------
-----------------------------+---------------------+----------------------+--------------------+
| q6_correct | STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION | CREATE DEFINER=`root`@`localhost` FUNCTION `q6_correct`() RETURNS varchar(30) CHARSET utf8mb4
    DETERMINISTIC
begin
declare ans varchar(30);
select empname into ans from employeee inner join works on employeee.empname = works.name where compname = 'sbi bank' order by salary desc limit 1;
return ans;
end | utf8mb4              | utf8mb4_0900_ai_ci   | utf8mb4_0900_ai_ci |
+------------+-----------------------------------------+---------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------------------------------------------------------------
-----------------------------+---------------------+----------------------+--------------------+
1 row in set (0.0005 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

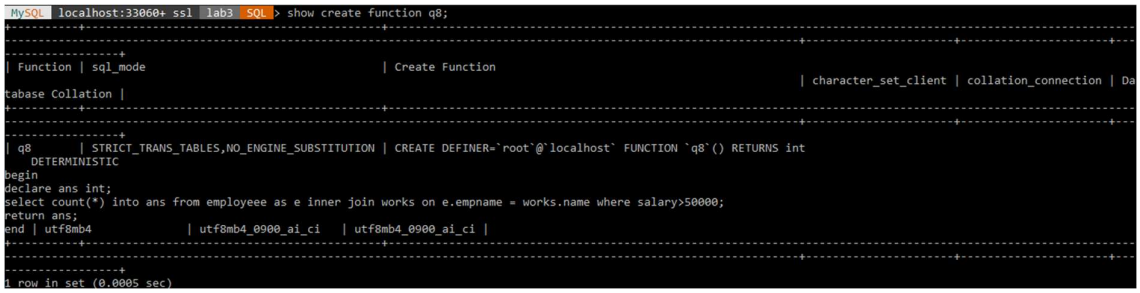
```
MySQL  localhost:33060+ ssl  lab3  SQL > select q6_correct();
+--------------+
| q6_correct() |
+--------------+
| ali          |
+--------------+
1 row in set (0.0007 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

(DO SCROLL DOWN)

(vii) Write a procedure which takes the city as input parameter and lists the names of all employees belonging to that city.



(viii) Write a function that will display the number of employees with salary more than 50k



(ix) Write a procedure raise_sal which increases the salary of an employee. It accepts an employee number and salary increase amount.

For raise_sal, I used a nested procedure system with the nested procedure being getName.

Since the empid is the input and not just the name, we can't access the right record in works (as works only has empname and not empid), thus we need a helper procedure to give us the empname on given empid as input.

This is is where the helper procedure -> getName(uid, ans) comes in. It takes the id and passes out the answer in the 2nd argument, 'ans.'

raise_sal procedure:-

```
MySQL  localhost:33060+ ssl  lab3  SQL > show create procedure raise_sal_correct;
+-------------------+-------------------------------------------+------------------------------------------------------------
-------------------------------------------------------------------------------------------+----------------------+----------------------+-------------------
--+
| Procedure         | sql_mode                                  | Create Procedure
                                                                                             | character_set_client | collation_connection | Database Collatio
n |
+-------------------+-------------------------------------------+------------------------------------------------------------
-------------------------------------------------------------------------------------------+----------------------+----------------------+-------------------
--+
| raise_sal_correct | STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION | CREATE DEFINER=`root`@`localhost` PROCEDURE `raise_sal_correct`(uempid int, amount int)
Begin
Declare t varchar(30);
Call getName(uempid, t);
Update works set salary = salary + amount where name = t;
End | utf8mb4              | utf8mb4_0900_ai_ci   | utf8mb4_0900_ai_ci |
+-------------------+-------------------------------------------+------------------------------------------------------------
-------------------------------------------------------------------------------------------+----------------------+----------------------+-------------------
--+
1 row in set (0.0005 sec)
MySQL  localhost:33060+ ssl  lab3  SQL > _
```

A helper procedure, getName:-

```
MySQL  localhost:33060+ ssl  lab3  SQL > show create procedure getName;
+---------+--------------------------------------------+------------------------------------------------------------------
-------------------------------------------------------------+----------------------+----------------------+--------------------+
| Procedure | sql_mode                                   | Create Procedure
                                                             | character_set_client | collation_connection | Database Collation |
+---------+--------------------------------------------+------------------------------------------------------------------
-------------------------------------------------------------+----------------------+----------------------+--------------------+
| getName   | STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION | CREATE DEFINER=`root`@`localhost` PROCEDURE `getName`(in uid int, out ans varchar(30))
begin
select empname into ans from employeee where empid= uid;
end | utf8mb4              | utf8mb4_0900_ai_ci   | utf8mb4_0900_ai_ci |
+---------+--------------------------------------------+------------------------------------------------------------------
-------------------------------------------------------------+----------------------+----------------------+--------------------+
1 row in set (0.0005 sec)
MySQL  localhost:33060+ ssl  lab3  SQL > _
```

(x) Create a Procedure that displays the details of managers working in a bank

```
MySQL  localhost:33060+ ssl  lab3  SQL > show create procedure q10correct;
+------------+--------------------------------------------+------------------------------------------------------------------
-------------------------------------------------------------+----------------------+----------------------+--------------------+
| Procedure  | sql_mode                                   | Create Procedure
                                                             | character_set_client | collation_connection | Database Collation |
+------------+--------------------------------------------+------------------------------------------------------------------
-------------------------------------------------------------+----------------------+----------------------+--------------------+
| q10correct | STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION | CREATE DEFINER=`root`@`localhost` PROCEDURE `q10correct`(bank varchar(30))
Begin
Select * from manages as m inner join works as w on m.empname = w.name where compname =bank ;
End | utf8mb4              | utf8mb4_0900_ai_ci   | utf8mb4_0900_ai_ci |
+------------+--------------------------------------------+------------------------------------------------------------------
-------------------------------------------------------------+----------------------+----------------------+--------------------+
1 row in set (0.0008 sec)
MySQL  localhost:33060+ ssl  lab3  SQL > _
```

```
Query OK, 0 rows affected (0.0007 sec)
MySQL  localhost:33060+ ssl  lab3  SQL > call q10_correct('uco bank') ;
+---------+-------+----------+
| manager | name  | compname |
+---------+-------+----------+
| jacob   | kumar | uco bank |
+---------+-------+----------+
1 row in set (0.0007 sec)

Query OK, 0 rows affected (0.0007 sec)
MySQL  localhost:33060+ ssl  lab3  SQL > call q10_correct('sbi bank') ;
+---------+-------+----------+
| manager | name  | compname |
+---------+-------+----------+
| singh   | ali   | sbi bank |
| suraj   | manav | sbi bank |
+---------+-------+----------+
2 rows in set (0.0006 sec)

Query OK, 0 rows affected (0.0006 sec)
MySQL  localhost:33060+ ssl  lab3  SQL >
```

QUESTION B:-

Design a simple database for Patient details Management System using Python and MySQL

- The insert module must be able to accept the patient_id, patient_ name, diagnosis, Contact_no, Date_of_admission and store it in the database.
- The find module must be able to accept the Patient_id of the patient and display all the details of the corresponding patient.

As the question asked for a modular approach, I have a main.py that calls insert and find functions from the corresponding modules: -

Thus, running main.py is sufficient.

MAIN.PY

main.py

```
1
2  import deleteModule
3  import findModule
4  import updateModule
5  import insertModule
6
7  insertModule.insertFn()
8  findModule.findFn()
```

(DO SCROLL DOWN)

INSERTMODULE:-

insertModule.py > insertFn

```python
import mysql.connector
import config

mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password=config.adminPassword,
  database="lab4"
)

cursor1 = mydb.cursor()

def insertFn():
    #Q1: insert module:-

    print("Q1. INSERT OPERATION")
    print("")

    #show table data before:-
    print("Table Before Insertion:-")
    cursor1.execute("select * from patient")
    for i in cursor1:
```

insertModule.py > insertFn

```python
    cursor1.execute("select * from patient")
    for i in cursor1:
        print(i)
    print("")

    print("Enter Patient id:- ")
    pid = input()
    print("Enter Name:- ")
    name = input()
    print("Enter diagnosis:- ")
    diagnosis = input()
    print("Enter Contact:- ")
    contact = input()
    print("Enter date of admission:- ")
    doa = input()

#create table patient(pid int primary key, name varchar(30), diagnosis varchar(30

    insert_sql = "INSERT INTO patient (pid, name, diagnosis, contact, doa) VALUES
    insert_variables = (pid, name, diagnosis, contact, doa)

    cursor1.execute(insert_sql, insert_variables)
```

insertModule.py > insertFn

```
41
42      cursor1.execute(insert_sql, insert_variables)
43      print(cursor1.rowcount, "record inserted.")
44
45
46      mydb.commit()
47
48      #show table data:-
49      print("")
50      print("Table After Insertion:-")
51      cursor1.execute("select * from patient")
52      print("")
53      for i in cursor1:
54          print(i)
55      print("")
56
```

OUTPUT:-

```
PS C:\Users\bijth\Desktop\sem-5\DbmsLab\q2_endsem> python main.py
Q1. INSERT OPERATION

Table Before Insertion:-
(1, 'jeremy', 'well', 82392983, datetime.date(2021, 6, 21))
(2, 'marmik', 'sick', 99219012, datetime.date(2021, 3, 21))

Enter Patient id:-
3
Enter Name:-
Suraj
Enter diagnosis:-
hamstring injury
Enter Contact:-
939939281
Enter date of admission:-
2021-05-23
1 record inserted.

Table After Insertion:-

(1, 'jeremy', 'well', 82392983, datetime.date(2021, 6, 21))
(2, 'marmik', 'sick', 99219012, datetime.date(2021, 3, 21))
(3, 'Suraj', 'hamstring injury', 939939281, datetime.date(2021, 5, 23))
```

(DO SCROLL DOWN)

FINDMODULE:-

findModule.py > findFn

```python
import mysql.connector
import config

mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password=config.adminPassword,
  database="lab4"
)

cursor1 = mydb.cursor()

def findFn():
#Q2: Find module
    print("Q2. FIND OPERATION")
    print("")

    print("Enter patient id :-")
    pid=input()

    sql = "select * from patient where pid =%s"
    pid_input = (pid, )
```

```python
    pid_input = (pid, )
    cursor1.execute(sql, pid_input)

    print("")
    print("The tuple of the name you asked for:-")
    for i in cursor1:
        print(i)
    print("")
```

OUTPUT:-

```
Q2. FIND OPERATION

Enter patient id :-
2

The tuple of the name you asked for:-
(2, 'marmik', 'sick', 99219012, datetime.date(2021, 3, 21))

PS C:\Users\bijth\Desktop\sem-5\DbmsLab\q2_endsem>
```

THANK YOU!