Project :- 1 (Extra_Credit)

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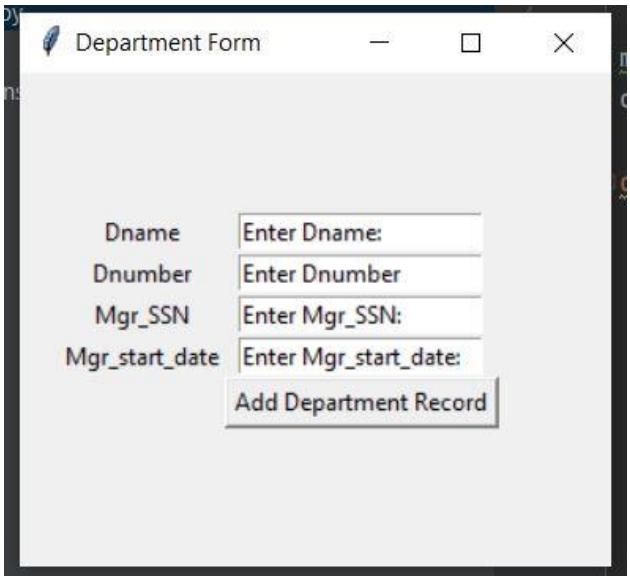
1. Create 2 interactive (command line) or form or Web interfaces to INSERT a new record in each of the 2 tables DEPARTMENT and PROJECT. Each interface should allow the users to enter the attribute values of the new record, then INSERT the record in the table. Use the interfaces to insert 2 new records in each of the 2 tables. Turn in query results that show the new records that you inserted in each table.

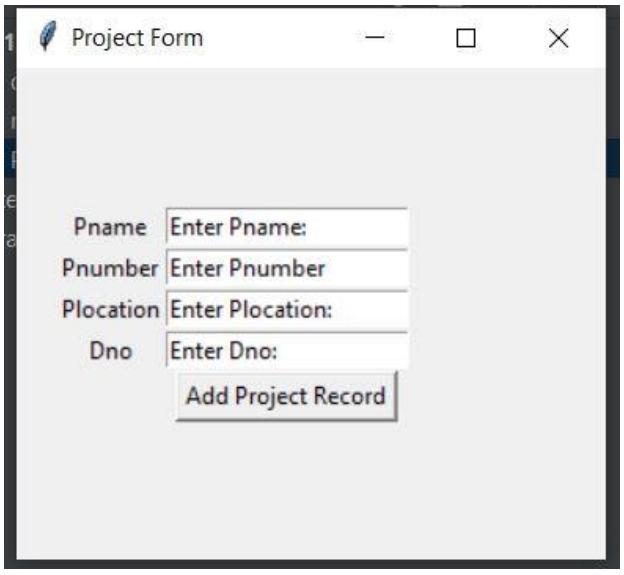
I have used python as my interactive programming language.

First using the Tkinter python library (Python Library to make simple and basic GUI applications) I have made two forms

1: Department _form



2: Project_form



On the button click(for buttons Add Department Record & Add Project Record) events of these forms I have run the mysql connection code to connect these

form's codes to my mysql database and the query to INSERT records in tables Department and Project accordingly.

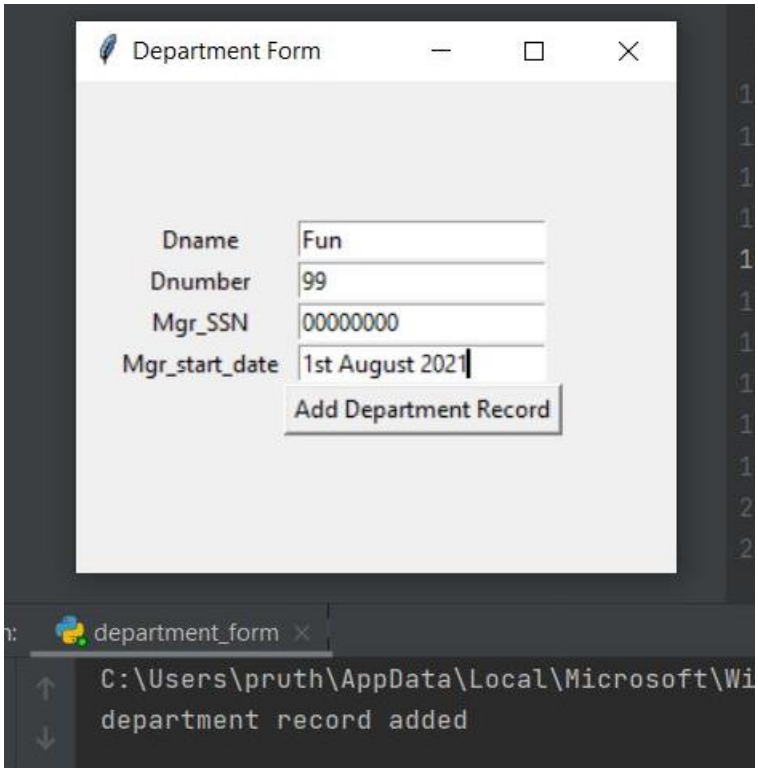
- Screenshots of INSERT INTO query:

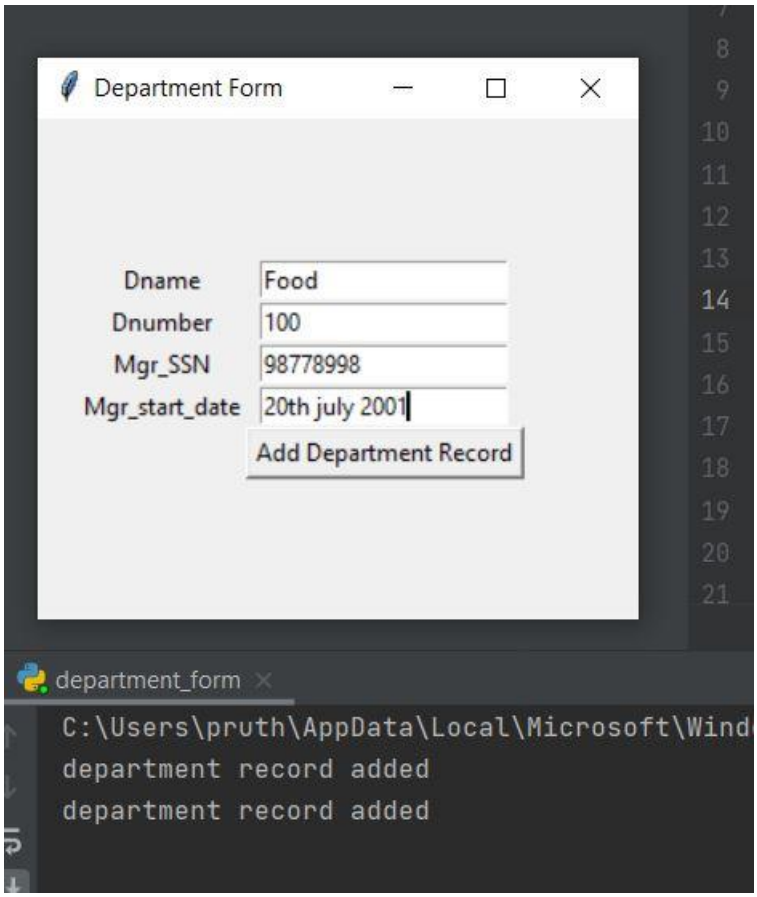
```
sql = "INSERT INTO department VALUES(%s, %s, %s, %s)"
cursor.execute(sql, (cname1,cname2,cname3,cname4))
print("department record added")
mydb.commit()
```

```
sql = "INSERT INTO project VALUES(%s, %s, %s, %s)"
cursor.execute(sql, (cname1,cname2,cname3,cname4))
print("project record added")
mydb.commit()
```

Here cname1-4 represents the columns 1-4 in respective areas Tables.

- Screenshots of records added:
  For department table I have inserted these two records.





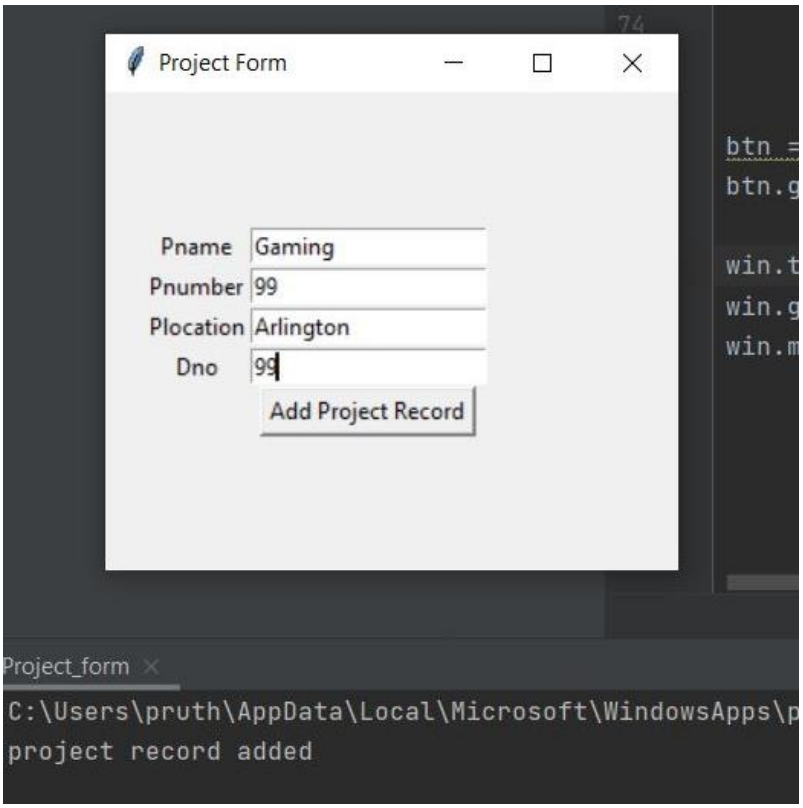
- Screenshot of query to show these records in database:

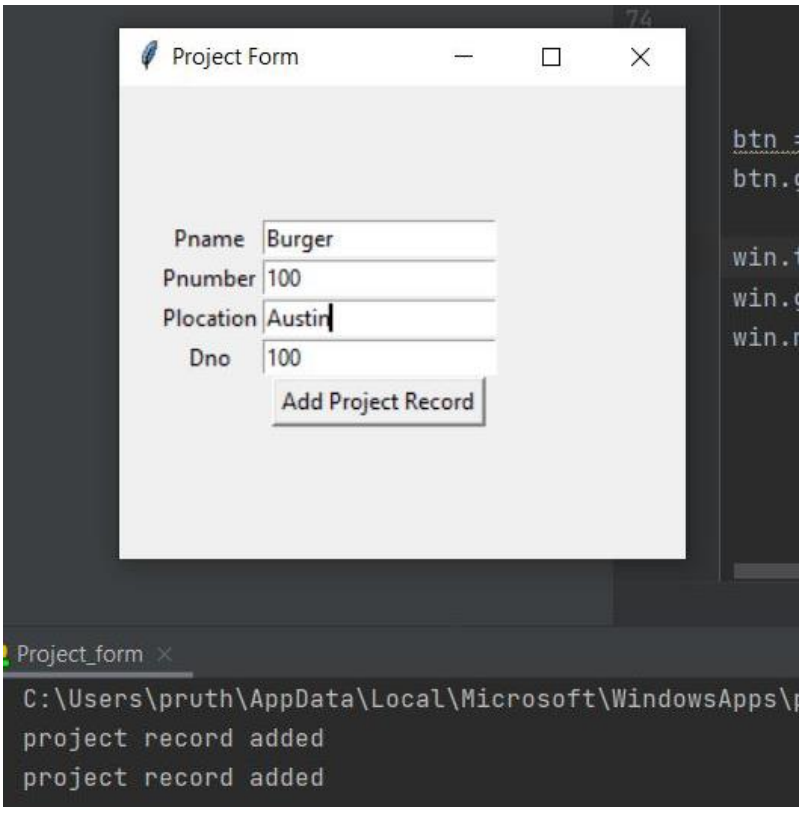
```
141 •  select *
142    from project_1.department
143    where Dname = "Fun"
144    or Dname = "Food";
145
```

Result Grid | Filter Rows: | Edit:

Dname	Dnumber	Mgr_SSN	Mgr_start_date
Fun	99	00000000	1st August 2021
Food	100	98778998	20th july 2001
NULL	NULL		NULL

For Project table I have inserted these two records.





- Screenshot of query to show these records in database:

```
146 •  select *
147    from project_1.project
148    where Pname = "Gaming"
149    or Pname = "Burger";
150
```

Result Grid | Filter Rows: | Edit:

Pname	Pnumber	Plocation	Dnum
Burger	100	Austin	100
Gaming	99	Arlington	99
NULL	NULL	NULL	NULL

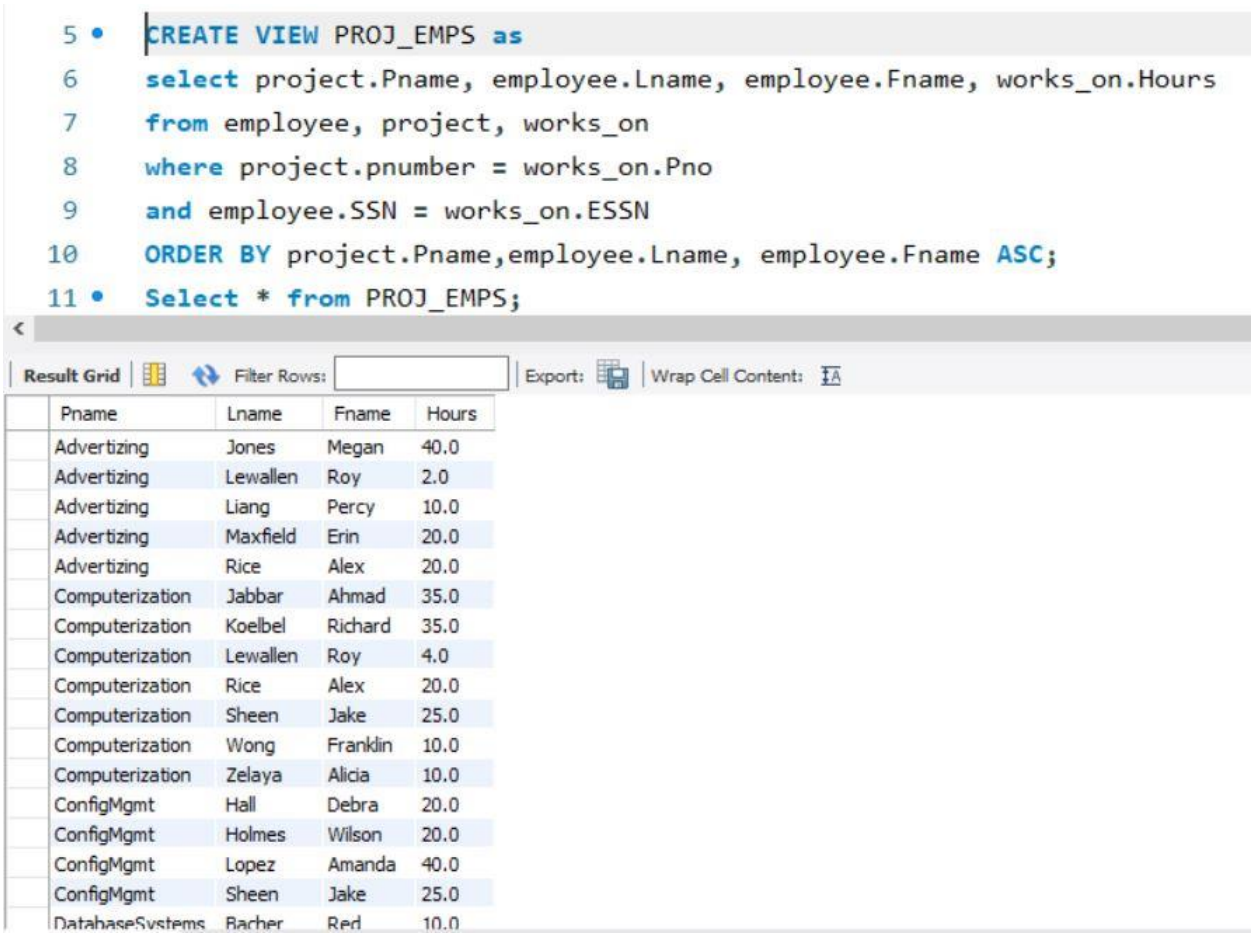
With this document I have also submitted the Department_form.py and Project_form.py which contains source codes of how I implemented each forms and connected them with mysql database.

2. Create 2 VIEWS as follows: the first view PROJ_EMPS. The view will have the following information: PROJ_EMPS (PNAME, LNAME, FNAME, HOURS) and will order the project info by PNAME in ascending order and within each PNAME the employees will be ordered by LNAME, FNAME in ascending order also. The second view PROJ_SUMMARY will have one record for each project and will include the information PROJ_SUMMARY (PNAME, NO_OF_EMPS, TOTAL_HOURS), where NO_OF_EMPS is the number (COUNT) of employees currently working on the project and TOTAL_HOURS is the SUM of the HOURS that the employees work on the project. Order the data by PNAME in descending order.

Query: view 1:

```
CREATE VIEW PROJ_EMPS as
select project.Pname, employee.Lname, employee.Fname, works_on.Hours
from employee, project, works_on
where project.pnumber = works_on.Pno
and employee.SSN = works_on.ESSN
ORDER BY project.Pname,employee.Lname, employee.Fname ASC;
Select * from PROJ_EMPS;
```

Screenshot:



```
5 •  CREATE VIEW PROJ_EMPS as
6    select project.Pname, employee.Lname, employee.Fname, works_on.Hours
7    from employee, project, works_on
8    where project.pnumber = works_on.Pno
9    and employee.SSN = works_on.ESSN
10   ORDER BY project.Pname,employee.Lname, employee.Fname ASC;
11 • Select * from PROJ_EMPS;
```

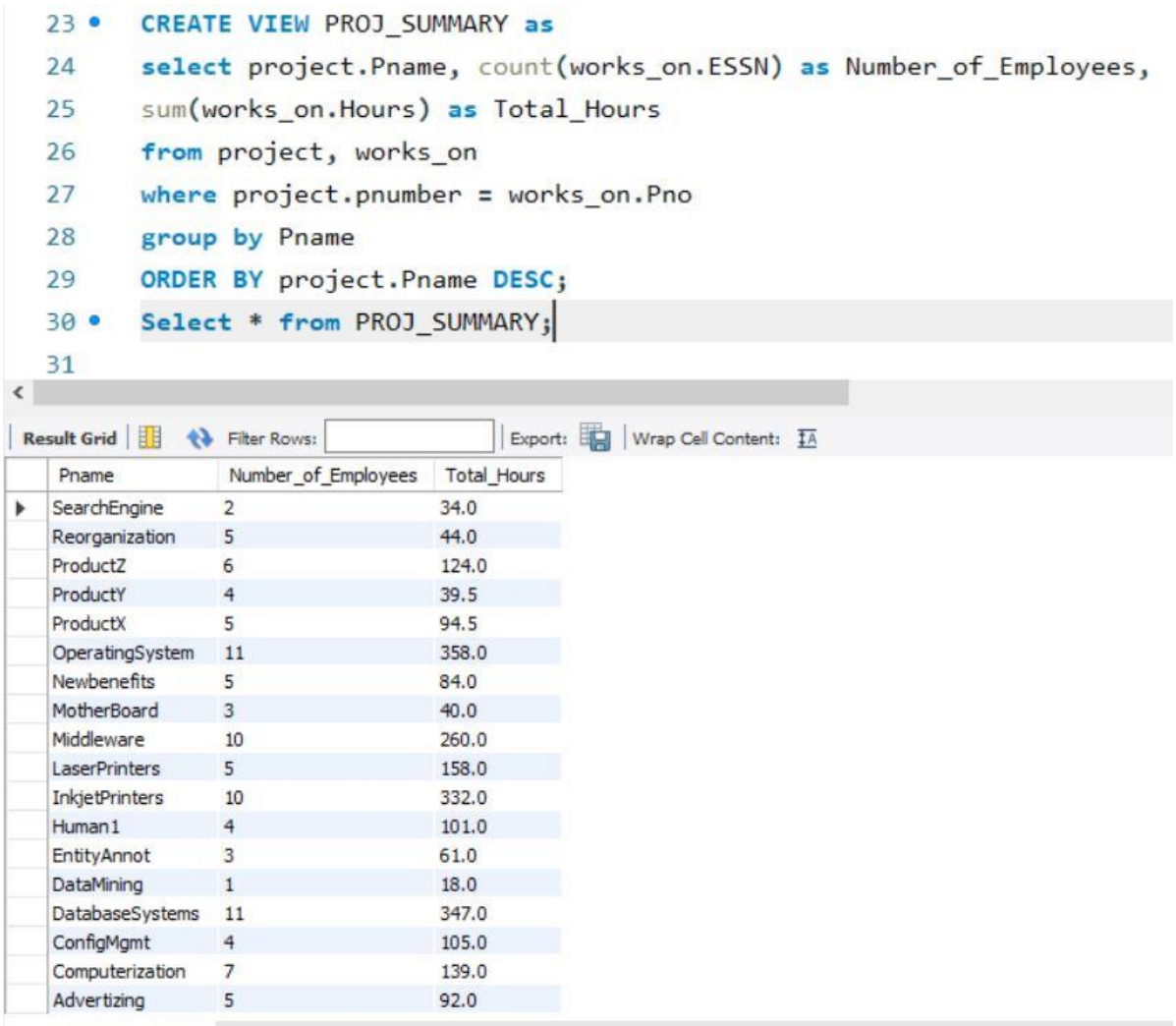
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Pname	Lname	Fname	Hours
Advertizing	Jones	Megan	40.0
Advertizing	Lewallen	Roy	2.0
Advertizing	Liang	Percy	10.0
Advertizing	Maxfield	Erin	20.0
Advertizing	Rice	Alex	20.0
Computerization	Jabbar	Ahmad	35.0
Computerization	Koelbel	Richard	35.0
Computerization	Lewallen	Roy	4.0
Computerization	Rice	Alex	20.0
Computerization	Sheen	Jake	25.0
Computerization	Wong	Franklin	10.0
Computerization	Zelaya	Alicia	10.0
ConfigMgmt	Hall	Debra	20.0
ConfigMgmt	Holmes	Wilson	20.0
ConfigMgmt	Lopez	Amanda	40.0
ConfigMgmt	Sheen	Jake	25.0
DatabaseSystems	Bacher	Red	10.0

Query: view 2:

```
CREATE VIEW PROJ_SUMMARY as
select project.Pname, count(works_on.ESSN) as Number_of_Employees,
sum(works_on.Hours) as Total_Hours
from project, works_on
where project.pnumber = works_on.Pno
group by Pname
ORDER BY project.Pname DESC;
Select * from PROJ_SUMMARY;
```

Screenshot:



```
23 •  CREATE VIEW PROJ_SUMMARY as
24    select project.Pname, count(works_on.ESSN) as Number_of_Employees,
25    sum(works_on.Hours) as Total_Hours
26    from project, works_on
27    where project.pnumber = works_on.Pno
28    group by Pname
29    ORDER BY project.Pname DESC;
30 •  Select * from PROJ_SUMMARY;
31
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Pname	Number_of_Employees	Total_Hours
SearchEngine	2	34.0
Reorganization	5	44.0
ProductZ	6	124.0
ProductY	4	39.5
ProductX	5	94.5
OperatingSystem	11	358.0
Newbenefits	5	84.0
MotherBoard	3	40.0
Middleware	10	260.0
LaserPrinters	5	158.0
InkjetPrinters	10	332.0
Human1	4	101.0
EntityAnnot	3	61.0
DataMining	1	18.0
DatabaseSystems	11	347.0
ConfigMgmt	4	105.0
Computerization	7	139.0
Advertizing	5	92.0