

Assignment No 8 :(Functions)

Aim: Write a program to build a simple Employee and Project management System using Python functions which can perform the following operations:

1. Accept [Project name, Team members, Technologies used, Project completion deadline]
2. Display - displays the details of every Project
3. Search - Look for a specific employee and the project on which he or she is working
4. Delete - delete a particular record (based on either project/employee)
5. Update - Update the team members for a particular project

Theory: About Functions: In Python, a function is a group of related statements that performs a specific task. Functions help break our program into smaller and modular chunks. As our program grows larger and larger, functions make it more organized and manageable. Furthermore, it avoids repetition and makes the code reusable.

Syntax:

```
def function_name(parameters):
```

```
    """docstring"""
```

```
    statement(s)
```

About MySQL Database: MySQL is a relational database management system (RDBMS) developed by Oracle that is based on structured query language (SQL). A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or a place to hold the vast amounts of information in a corporate network. In particular, a relational database is a digital store collecting data and organizing it according to the relational model. In this model, tables consist of rows and columns, and relationships between data elements all follow a strict logical structure. An RDBMS is simply the set of software tools used to actually implement, manage, and query such a database.

CODE:

```
import mysql.connector
mydb = mysql.connector.connect(
    host="localhost",
    user="root",
    password="Sourav@45",
    database='employee'
)
cur = mydb.cursor()
# cur.execute("CREATE DATABASE employee")
# a = "CREATE TABLE EMPLOYEE(Srno integer(4), project_name
varchar(50),team_members varchar(100),tech_used varchar(200),deadline
varchar(50))"
# cur.execute(a)

# 1. Accept [Project name, Team members, Technologies used, Project
completion deadline]
def accept():
    b = "INSERT INTO EMPLOYEE (Srno , project_name ,team_members ,tech_used
,deadline ) VALUES(%s,%s,%s,%s,%s)"
    Srno = int(input("Enter Team Number:"))
    project_name = input("Enter project name:")
    team_members = input("Enter team members(seperate them with space):")
    tech_used = input("Enter the technology used:")
    deadline = input("Enter the deadline:")
    c = [Srno, project_name, team_members, tech_used, deadline]
    d = tuple(c)
    cur.execute(b,d)
    mydb.commit()
    print("The data you just entered is now stored in database.")

# 2. Display - displays the details of every Project
def display():
    e = "select * from employee"
    cur.execute(e)
    result = cur.fetchall()
    for rec in result:
        print(rec)

# 3. Search - Look for a specific employee and the project on which he or she
is working #ERROR
def search():
    m = input("Enter the name of the employee: ")
    n = "select * from employee WHERE team_members = %s"
    o = [m]
    cur.execute(n,o)
    record = cur.fetchmany()
    print(record)

# 4. Delete - delete a particular record (based on either project/employee)
def delete():
    f = input("Enter the name of project you want to delete record for:")
    g = "DELETE FROM employee WHERE project_name = %s"
    h = [f]
    cur.execute(g,h)
```

```

        mydb.commit()
        print(f"The records of {f} project now have been deleted from the
database.")

# 5. Update - Update the team members for a particular project
def update():
    i = input("Enter the team members for a particular project you want to
update data for:")
    j = input("Enter the new team members for a particular project:")
    k = "UPDATE EMPLOYEE SET team_members = %s WHERE team_members = %s"
    l = [j, i]
    cur.execute(k, l)
    mydb.commit()
    print(f"Name of team members have been updated to {j} from {i}.")

def task1():
    task = int(input("Choose the task from the following:\n1. Accept the
detail.\n2. Display the details.\n3. Search the detail.\n4. Delete the
detail.\n5. Update the detail.\n\n"))
    if task == 1:
        accept()
    elif task == 2:
        display()
    elif task == 3:
        search()
    elif task == 4:
        delete()
    elif task == 5:
        update()
    else:
        print("Input error! Try again.")
        task1()

task1()

```

OUTPUT 1:

Initial database:

The screenshot shows the MySQL 8.0 Command Line Interface. The user has entered the password and is prompted to enter a command. The user has entered 'use employee;', and the database has been changed. The user has then entered 'select * from employee;', and the output shows 'Empty set (0.00 sec)'. A white box with the text '-Empty database' is overlaid on the output.

```

MySQL 8.0 Command Line Cli
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.31 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use employee;
Database changed
mysql> select * from employee;
Empty set (0.00 sec)

```

-Empty database

After running code 1:

```
Assignment8 x
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\pythonw3.10.exe "H:\My Drive\Study material\3rd Semester\Python p
Choose the task from the following:
1. Accept the detail.
2. Display the details.
3. Search the detail.
4. Delete the detail.
5. Update the detail.

1
Enter Team Number:1
Enter project name:Touropedia
Enter team members(separate them with space):abc def ghi jkl
Enter the technology used:Python MySQL
Enter the deadline:15th Nov 2022
The data you just entered is now stored in database.

Process finished with exit code 0
```

Final Database:

```
MySQL 8.0 Command Line Cli x
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.31 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use employee;
Database changed
mysql> select * from employee;
Empty set (0.00 sec)

mysql> select * from employee;
+-----+-----+-----+-----+-----+
| Srno | project_name | team_members | tech_used | deadline |
+-----+-----+-----+-----+-----+
| 1 | Touropedia | abc def ghi jkl | Python MySQL | 15th Nov 2022 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

-Entry added

OUTPUT 2:

```
Assignment8 x
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\pythonw3.10.exe "H:\My Drive\Study material\3rd Semester\Python
Choose the task from the following:
1. Accept the detail.
2. Display the details.
3. Search the detail.
4. Delete the detail.
5. Update the detail.

2
(1, 'Touropedia', 'abc def ghi jkl', 'Python MySQL', '15th Nov 2022')

Process finished with exit code 0
```

OUTPUT 3:

```
Assignment8 x
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\pythonw3.10.exe "H:\My Drive\Study material\3rd Semester\Python
Choose the task from the following:
1. Accept the detail.
2. Display the details.
3. Search the detail.
4. Delete the detail.
5. Update the detail.

3
Enter the name of the employee: abc def ghi jkl
[[1, 'Touropedia', 'abc def ghi jkl', 'Python MySQL', '15th Nov 2022']]

Process finished with exit code 0
```

OUTPUT 5:

Initial database:

```
MySQL 8.0 Command Line Cli x + v
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.31 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use employee;
Database changed
mysql> select * from employee;
Empty set (0.00 sec)

mysql> select * from employee;
+-----+-----+-----+-----+-----+
| Srno | project_name | team_members | tech_used | deadline |
+-----+-----+-----+-----+-----+
| 1 | Touropedia | abc def ghi jkl | Python MySQL | 15th Nov 2022 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

After running code 5:

```
Assignment8 x
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\pythonw3.10.exe "H:\My Drive\Study material\3rd Semester\Python
Choose the task from the following:
1. Accept the detail.
2. Display the details.
3. Search the detail.
4. Delete the detail.
5. Update the detail.

5
Enter the team members for a particular project you want to update data for:abc def ghi jkl
Enter the new team members for a particular project:Sourav
Name of team members have been updated to Sourav from abc def ghi jkl.

Process finished with exit code 0
```

Final Database (After updating name):

```
MySQL 8.0 Command Line Cli x + v
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 48
Server version: 8.0.31 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use employee;
Database changed
mysql> select * from employee;
+-----+-----+-----+-----+-----+
| Srno | project_name | team_members | tech_used | deadline |
+-----+-----+-----+-----+-----+
| 1 | Touropedia | Sourav | Python MySQL | 15th Nov 2022 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

-Updated team member name

OUTPUT 4:

Initial Database:

```
MySQL 8.0 Command Line Cli x + v
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 48
Server version: 8.0.31 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use employee;
Database changed
mysql> select * from employee;
+-----+-----+-----+-----+-----+
| Srno | project_name | team_members | tech_used | deadline |
+-----+-----+-----+-----+-----+
| 1 | Touropedia | Sourav | Python MySQL | 15th Nov 2022 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

After running code 4:

```
Assignment8
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\pythonw3.10.exe "H:\My Drive\Study material\3rd Semester\Pytho
Choose the task from the following:
1. Accept the detail.
2. Display the details.
3. Search the detail.
4. Delete the detail.
5. Update the detail.

4
Enter the name of project you want to delete record for:Touropedia
The records of Touropedia project now have been deleted from the database.

Process finished with exit code 0
```

Final Database (After deleting the project):

```
MySQL 8.0 Command Line Cli
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.31 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use employee;
Database changed
mysql> select * from employee;
Empty set (0.00 sec)
```

-Deleted records of project

Conclusion: Hence, we have learned the implementation of Functions with the help of databases.