

Application Functioning

To execute the application we need to have Python 3.x installed on our local computers.

Steps to run the application:

- 1) cd Simpplr
- 2) python -u "main.py"

Problem Statement #1: Teacher Management Application

1) Show all teachers.

```
-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 1
{'full_name': 'Rahul Singh', 'age': '29', 'DOB': '18-04-1995', 'Num_Classes': '4'}
{'full_name': 'Aditya Sharma', 'age': '21', 'DOB': '26-09-2002', 'Num_Classes': '5'}
{'full_name': 'Harsh Trivedi', 'age': '61', 'DOB': '14-05-1963', 'Num_Classes': '6'}
{'full_name': 'Vikram Goyal', 'age': '44', 'DOB': '17-01-1980', 'Num_Classes': '3'}
{'full_name': 'Aditya Sharma', 'age': '32', 'DOB': '14-11-1991', 'Num_Classes': '7'}
{'full_name': 'Mayank Gupta', 'age': '48', 'DOB': '07-01-1976', 'Num_Classes': '5'}
```

2) Add a teacher.

```

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 2
Enter full name: Kartik Garg
Enter age: 25
Enter date of birth: 19-02-1999
Enter number of classes: 1
New record added to the current dataset.

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 1
{'full_name': 'Rahul Singh', 'age': '29', 'DOB': '18-04-1995', 'Num_Classes': '4'}
{'full_name': 'Aditya Sharma', 'age': '21', 'DOB': '26-09-2002', 'Num_Classes': '5'}
{'full_name': 'Harsh Trivedi', 'age': '61', 'DOB': '14-05-1963', 'Num_Classes': '6'}
{'full_name': 'Vikram Goyal', 'age': '44', 'DOB': '17-01-1980', 'Num_Classes': '3'}
{'full_name': 'Aditya Sharma', 'age': '32', 'DOB': '14-11-1991', 'Num_Classes': '7'}
{'full_name': 'Mayank Gupta', 'age': '48', 'DOB': '07-01-1976', 'Num_Classes': '5'}
{'full_name': 'Kartik Garg', 'age': '25', 'DOB': '19-02-1999', 'Num_Classes': '1'}

```

3) Filter teachers based on criteria.

```

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 3
a) Filter by Age
b) Filter by number of classes
Enter filter option: a
Enter space separated range of age[start, end](both included and start <= end): 25 50
Result of the Query:
{'full_name': 'Rahul Singh', 'age': '29', 'DOB': '18-04-1995', 'Num_Classes': '4'}
{'full_name': 'Vikram Goyal', 'age': '44', 'DOB': '17-01-1980', 'Num_Classes': '3'}
{'full_name': 'Aditya Sharma', 'age': '32', 'DOB': '14-11-1991', 'Num_Classes': '7'}
{'full_name': 'Mayank Gupta', 'age': '48', 'DOB': '07-01-1976', 'Num_Classes': '5'}
{'full_name': 'Kartik Garg', 'age': '25', 'DOB': '19-02-1999', 'Num_Classes': '1'}

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 3
a) Filter by Age
b) Filter by number of classes
Enter filter option: b
Enter space separated range of classes[start, end](both included and start <= end): 1 4
Result of the Query:
{'full_name': 'Rahul Singh', 'age': '29', 'DOB': '18-04-1995', 'Num_Classes': '4'}
{'full_name': 'Vikram Goyal', 'age': '44', 'DOB': '17-01-1980', 'Num_Classes': '3'}
{'full_name': 'Kartik Garg', 'age': '25', 'DOB': '19-02-1999', 'Num_Classes': '1'}

```

4) Search for a teacher.

```

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 4
Enter the name of the teacher: Aditya Sharma
Multiple records exists by the name Aditya Sharma
Do you want to filter further by DOB(Y/N): N
{'full_name': 'Aditya Sharma', 'age': '21', 'DOB': '26-09-2002', 'Num_Classes': '5'}
{'full_name': 'Aditya Sharma', 'age': '32', 'DOB': '14-11-1991', 'Num_Classes': '7'}

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 4
Enter the name of the teacher: Aditya Sharma
Multiple records exists by the name Aditya Sharma
Do you want to filter further by DOB(Y/N): Y
Enter the DOB of the teacher(DD-MM-YYYY): 26-09-2002
{'full_name': 'Aditya Sharma', 'age': '21', 'DOB': '26-09-2002', 'Num_Classes': '5'}

```

5) Update a teacher's record.

```

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 5
Enter name of the teacher whose details are to be updated: Rahul Singh
Enter DOB(DD-MM-YYYY) of the teacher: 18-04-1995
1. Update Name
2.Update number of classes

Enter update option: 2
Enter updated number of classes: 3
Teacher Record Updated Successfully

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 1
{'full_name': 'Rahul Singh', 'age': '29', 'DOB': '18-04-1995', 'Num_Classes': '3'}
{'full_name': 'Aditya Sharma', 'age': '21', 'DOB': '26-09-2002', 'Num_Classes': '5'}
{'full_name': 'Harsh Trivedi', 'age': '61', 'DOB': '14-05-1963', 'Num_Classes': '6'}
{'full_name': 'Vikram Goyal', 'age': '44', 'DOB': '17-01-1980', 'Num_Classes': '3'}
{'full_name': 'Aditya Sharma', 'age': '32', 'DOB': '14-11-1991', 'Num_Classes': '7'}
{'full_name': 'Mayank Gupta', 'age': '48', 'DOB': '07-01-1976', 'Num_Classes': '5'}

```

6) Delete a teacher.

```

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 6
Enter name of the teacher: Kartik Garg
Enter DOB(DD-MM-YYYY) of the teacher: 19-02-1999
Teacher data deleted successfully

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 1
{'full_name': 'Rahul Singh', 'age': '29', 'DOB': '18-04-1995', 'Num_Classes': '4'}
{'full_name': 'Aditya Sharma', 'age': '21', 'DOB': '26-09-2002', 'Num_Classes': '5'}
{'full_name': 'Harsh Trivedi', 'age': '61', 'DOB': '14-05-1963', 'Num_Classes': '6'}
{'full_name': 'Vikram Goyal', 'age': '44', 'DOB': '17-01-1980', 'Num_Classes': '3'}
{'full_name': 'Aditya Sharma', 'age': '32', 'DOB': '14-11-1991', 'Num_Classes': '7'}
{'full_name': 'Mayank Gupta', 'age': '48', 'DOB': '07-01-1976', 'Num_Classes': '5'}

```

7) Bonus(calculate and display the average number of classes the teachers take):

```

-----Teacher Management Application-----
1) Show All Teachers
2) Add a Teacher
3) Filter teachers based on a criteria
4) Search for a teacher
5) Update a teacher record
6) Delete a teacher
7) Calculate Average Number of Classes
8) Exit
Enter option: 7
Average number of classes = 5.0

```