Experiment No.2#d

Frason Francis : 201903020 : 25

Aim: To study advanced Data types and functions in Python.

Write a menu-driven python program to :
i) Add students' marks information in terms of tuples.
Calculate the total and average marks.
ii) Display students with specified key.
iii) Enter students' admission date in the form
(dd/mm/yyyy) to introduce nested tuple. Display
students having admission in the same year.

Theory:

There are four different types in Python:

1. int(plain integers): this one is pretty standard -plain integers are just positive or negative whole numbers.
2. long (long integers): long integers are integers of infinite size. They look like plain integers except they're followed by letter "L".
3. float (floating point real values): floats represent real numbers, but are written with decimal points(for scientific notation) to divide the whole number into fractional parts.
4. complex(complex numbers): Represented by the formula a+bj where a and b are floats,and j is the square root of -1 (the result of which is an imaginary number). Complex numbers are used sparingly in Python.
5. A tuple is a collection type data structure which is immutable by design and holds a sequence of heterogeneous elements.
6. Tuples store a fixed set of elements and don't allow changes whereas the list has the provision to update its content.

Algorithms:

1. Begin
2. Take user Name as an input string
3. Process the True While loop for Menu driven program with the following
4. Take the user input for the given choices
5. Choice 1
   Enter student Marks in tuple std_mks
   Sum of all the marks in tuple sum_mks
   Avg of std_mks by sum(std_mks)/len(std_mks)
6. Choice 2
   Enter the date in tuple std_date in format (dd/mm/yyyy)
7. Choice 3
   Store all the information entered in a tuple data to retrieve current student info.
8. Exit

Codes:

```
name = str(input('Enter the name of the student: '))


while True:
    print('Menu Driven Program: ')
    print("1. Add Student Marks: ")
    print("2. Student admission Date in the form (dd/mm/yyyy): ")
    print("3. Display Student Info: ")
    print("4. Exit \n")
    choice = int(input("Enter your Choice: "))
    if choice == 1:
        std_mks= tuple([eval(x) for x in input("enter the values: ").split(',')])
        sum_mks = print("The sum of marks: ",sum(std_mks))
        avg_mks = print("The average std marks: ",sum(std_mks)/len(std_mks))
        print("-"*60)

    elif choice == 2:
        std_dates = tuple([eval(x) for x in input("Enter the Date of Admission: ").split('/')])
        print("-"*60)

    elif choice == 3:
        #print("\n Name: {}\n Marks: {}\n Date: {}".format(name,std_mks,std_dates))
        data = [(name,std_mks,std_dates)]
        print(data)
        print("-"*60)

    else:
        print("Thank you \n")
        break
```

```
In [1]: runcell(0, 'C:/Users/jkjru/Desktop/Py Labs/Exp 2a.py')

Enter the name of the student: Frason
Menu Driven Program:
1. Add Student Marks:
2. Student admission Date in the form (dd/mm/yyyy):
3. Display Student Info:
4. Exit


Enter your Choice: 1

enter the values: 10,20,30,40,50
The sum of marks:  150
The average std marks:  30.0
------------------------------------------------------------
Menu Driven Program:
1. Add Student Marks:
2. Student admission Date in the form (dd/mm/yyyy):
3. Display Student Info:
4. Exit


Enter your Choice: 2

Enter the Date of Admission: 12/2/2020
------------------------------------------------------------
Menu Driven Program:
1. Add Student Marks:
2. Student admission Date in the form (dd/mm/yyyy):
3. Display Student Info:
4. Exit


Enter your Choice: 3
[('Frason ', (10, 20, 30, 40, 50), (12, 2, 2020))]
------------------------------------------------------------
Menu Driven Program:
1. Add Student Marks:
2. Student admission Date in the form (dd/mm/yyyy):
3. Display Student Info:
```

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