पुना International School

Shree Swaminarayan Gurukul, Zundal

PRACTICAL FILE

COMPUTER SCIENCE (083)

Term - II

PYTHON

Student Name : _____

Grade : **XI –**

Roll No. :_____

PUNA INTERNATIONAL SCHOOL
(Swaminarayan Gurukul)
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1. Program to count even and odd numbers given in a list.

```
# Python program to count Even
# and Odd numbers in a
# list of numbers
list1 = [10, 21, 4, 45, 66, 93, 1]
even_count, odd_count = 0, 0
# iterating each number in list
for num in list1:
        # checking condition
        if num % 2 == 0:
           even_count += 1
else:
          odd_count += 1
print("Even numbers in the list: ", even_count)
print("Odd numbers in the list: ", odd_count)
```

Out put :

Even numbers in the List : 3
Odd numbers in the List : 4

Program :2 Write a program to find largest,second largest, smallest and second smallest number in a list.

```
# Python prog to illustrate the following in a list
def find_len(list1):
        length = len(list1)
        list1.sort()
        print("Sorted List is:" , list1)
        print("Largest element is:", list1[length-1])
        print("Smallest element is:", list1[0])
        print("Second Largest element is:", list1[length-2])
        print("Second Smallest element is:", list1[1])

# Driver Code
list1=[12, 45, 2, 41, 31, 10, 8, 6, 4]
Largest = find_len(list1)
```

Output:

```
Largest element is: 45
Smallest element is: 2
Second Largest element is: 41
Second Smallest element is: 4
```

Program 3: Find the largest / smallest number in a tuple.

```
t=tuple()
n=int(input("Total number of values in tuple : "))
for i in range(n):
   a=input("enter elements : ")
   t=t+(a,)
print ("maximum value = ",max(t))
print ("minimum value = ",min(t))
```

Output :

```
Total number of values in tuple : 4
enter elements : 23
enter elements : 25
enter elements : 34
```

```
enter elements : 67
maximum value =  67
minimum value =  23
```

Program 4: Input a list of numbers and swap elements at the even location with the elements at the odd location.

```
val=eval(input("Enter a list "))
print("Original List is:",val)
s=len(val)
if s%2!=0:
   s=s-1
for i in range(0,s,2):
   val[i],val[i+1]=val[i+1],val[i]
print("List after swapping :",val)
```

Output:

```
Enter a list [2,4,3,6,7]
Original List is: [2, 4, 3, 6, 7]
List after swapping : [4, 2, 6, 3, 7]
```

Program 5: Input a list/tuple of elements, search for a given element in the list/tuple.

```
mylist = []

print("Enter 5 elements for the list: ")
for i in range(5):
value = int(input())
mylist.append(value)
print("Enter an element to be search: ")
element = int(input())
for i in range(5):

   if element == mylist[i]:

      print("\nElement found at Index:", i)

      print("Element found at Position:", i+1)
```

Output:

```
Enter 5 elements for the list:
45
34
23
14
12
Enter an element to be search:
14

Element found at Index: 3
Element found at Position: 4
```

Program 6: Dictionary Concepts:

1. **Changeable key value:**

```
thisdict =     {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}

thisdict["year"] = 2018

print(thisdict)
```

output:

{‘brand’: ‘Ford’ , ‘model’ : ‘Mustang’, ‘year’: 2018}

2. **Update Key Value: (with update() method)**

```
thisdict = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
thisdict.update({"year": 2020})

print(thisdict)
```

Output:
{‘brand’: ‘Ford’ , ‘model’ : ‘Mustang’, ‘year’: 2020}

3. **Delete Key Value: (with pop() method)**

```
thisdict = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
thisdict.pop("model")
print(thisdict)
```

4. **Nested Dictionary:**

```
child1 = {
  "name" : "Ram",
  "year" : 2004
}
child2 = {
  "name" : "Sita",
  "year" : 2007
}
child3 = {
  "name" : "Meena",
  "year" : 2011
}

myfamily = {
  "child1" : child1,
  "child2" : child2,
  "child3" : child3
}
```

Output:
{‘child1’:{‘name’ : ‘Ram’ , ‘year’: 2004}, ‘child2’:{‘name’ : ‘Sita’ , ‘year’: 2007}, ‘child3:{‘name’ : ‘Meena’ , ‘year’: 2004}}

Program 7: Create a dictionary with the Rollno, Name and marks of students and display the name of students, who have scored marks above 75.

```
no_of_std = int(input("Enter number of students: "))

result = {}

for i in range(no_of_std):

  print("Enter Details of student No.", i+1)

  roll_no = int(input("Roll No: "))

  std_name = input("Student Name: ")

  marks = int(input("Marks: "))

  result[roll_no] = [std_name, marks]

print(result)

# Display names of students who have got marks more than 75

for student in result:

  if result[student][1] > 75:

     print("Student's name who get more than 75 marks
is/are",(result[student][0]))
```

Output:
Enter number of students: 2
Enter Details of student No. 1

```
Roll No: 4
Student Name: Ram
Marks: 67
Enter Details of student No. 2
Roll No: 8
Student Name: Sita
Marks: 89
{4: ['Ram', 67], 8: ['Sita', 89]}
Student's name who get more than 75 marks is/are Sita
```

Program 8: Create a dictionary with the Employee no, Name and Salary of Employees and display the name of employee, who have got salary above 15000.

```
no_of_emp = int(input("Enter number of emp: "))

result = {}

for i in range(no_of_emp):

  print("Enter Details of Employee No.", i+1)

  emp_no = int(input("Employee No: "))

  emp_name = input("Employee Name: ")

  salary = int(input("Salary: "))

  result[emp_no] = [emp_name, salary]

print(result)

# Display names of employee who have got salary  more than 15000

for employee in result:
```

```
  if result[employee][1] > 15000:

     print("Employee's name who get more than 15000 salary
is/are",(result[employee][0]))
```

Output:

```
Enter number of emp: 2
Enter Details of Employee No. 1
Employee No: 1
Employee Name: jayna
Salary: 45000
Enter Details of Employee No. 2
Employee No: 2
Employee Name: disha
Salary: 20000
{1: ['jayna', 45000], 2: ['disha', 20000]}
Employee's name who get more than 15000 salary  is/are jayna
Employee's name who get more than 15000 salary  is/are disha
```

Program 9: Write a program to count the number of times a character appears in a given string. (dictionary)

```
st = input("Enter a string: ")
dic = {} #creates an empty dictionary
for ch in st:
 if ch in dic: #if next character is already in the dictionary
    dic[ch] += 1
 else:
    dic[ch] = 1 #if ch appears for the first time
for key in dic:
 print(key,':',dic[key])
```

Output:

```
Enter a string: hello world
h : 1
e : 1
l : 3
o : 2
  : 1
w : 1
r : 1
d : 1
```

Program 10: Write a program to input your friends' names and their Phone Numbers and store them in the dictionary as the key-value pair. Perform the following operations on the dictionary:

a) Display the name and phone number of all your friends

b) Add a new key-value pair in this dictionary and display the modified dictionary

c) Delete a particular friend from the dictionary

d) Modify the phone number of an existing friend

e) Check if a friend is present in the dictionary or not

f) Display the dictionary in sorted order of names

```
dic = {}
#Creates an empty dictionary

#While loop to provide the options repeatedly
#it will exit when the user enters 7
while True:
    print("1. Add New Contact")
    print("2. Modify Phone Number of Contact")
    print("3. Delete a Friend's contact")
    print("4. Display all entries")
    print("5. Check if a friend is present or not")
    print("6. Display in sorted order of names")
```

```
print("7. Exit")
inp = int(input("Enter your choice(1-7): "))

#Adding a contact
if(inp == 1):
   name = input("Enter your friend name: ")
   phonenumber = input("Enter your friend's contact number: ")
   dic[name] = phonenumber
   print("Contact Added \n\n")
#Modifying a contact if the entered name is present in the dictionary
elif(inp == 2):
   name = input("Enter the name of friend whose number is to be modified: ")
   if(name in dic):
      phonenumber = input("Enter the new contact number: ")
      dic[name] = phonenumber
      print("Contact Modified\n\n")
   else:
      print("This friend's name is not present in the contact list")
#Deleting a contact if the entered name is present in the dictionary
elif(inp == 3):
   name = input("Enter the name of friend whose contact is to be deleted: ")
   if(name in dic):
      del dic[name]
      print("Contact Deleted\n\n")
   else:
      print("This friend's name is not present in the contact list")
#Displaying all entries in the dictionary
elif(inp == 4):
   print("All entries in the contact")
   for a in dic:
      print(a,"\t\t",dic[a])
   print("\n\n\n")
#Searching a friend name in the dictionary
elif(inp == 5):
   name = input("Enter the name of friend to search: ")
```

```
    if(name in dic):
        print("The friend",name,"is present in the list\n\n")
    else:
        print("The friend",name,"is not present in the list\n\n")
#Displaying the dictionary in the sorted order of the names
elif(inp == 6):
    print("Name\t\t\tContact Number")
    for i in sorted(dic.keys()):
        print(i,"\t\t\t",dic[i])
    print("\n\n")
#Exit the while loop if user enters 7
elif(inp == 7):
    break
#Displaying the invalid choice when any other values are entered
else:
    print("Invalid Choice. Please try again\n")
```

Output:

```
1. Add New Contact
2. Modify Phone Number of Contact
3. Delete a Friend's contact
4. Display all entries
5. Check if a friend is present or not
6. Display in sorted order of names
7. Exit
Enter your choice(1-7): 1
Enter your friend name: Daksha
Enter your friend's contact number: 8908788111
Contact Added

1. Add New Contact
2. Modify Phone Number of Contact
3. Delete a Friend's contact
4. Display all entries
5. Check if a friend is present or not
6. Display in sorted order of names
7. Exit
Enter your choice(1-7): 2
Enter the name of friend whose number is to be modified: Daksha
Enter the new contact number: 7890112341
Contact Modified
```