NAME-JATAN SAHU

STUDENT ID - 202218061

Lab 04: PYTHON Assignment

STRING,LIST AND TUPLE

1. Write a Python program to sum all the items in a list.

[ ]:
```
lst=[]
n=int(input("Enter length of list :"))
sum=0
for j in range(0,n):
  element=int(input("enter elements for addition :"))
  lst.append(element)

for i in lst:
    sum=sum+i
print("LIST :",lst)
print("SUM :",sum)
```

```
Enter length of list :5
enter elements for addition :1
enter elements for addition :2
enter elements for addition :3
enter elements for addition :4
enter elements for addition :5
LIST : [1, 2, 3, 4, 5]
SUM : 15
```

2. Write a Python program to multiply all the items in a list.

[ ]:
```
n=int(input("Enter number of elements you want to print"))
lis=[]
mul=1
for i in range(0,n):
  ele=int(input("Enter elements  :"))
  lis.append(ele)
for j in lis:
  mul=mul*j
print("LIST :",lis)
print("Multiplication of entered list :",mul)
```

```
Enter number of elements you want to print5
Enter elements  :1
Enter elements  :2
Enter elements  :3
Enter elements  :4
Enter elements  :5
LIST : [1, 2, 3, 4, 5]
Multiplication of entered list : 120
```

3. Write a Python program to get the largest number from a list without using inbuilt function.

[ ]:
```
n=int(input("Enter number of elements you want to print"))
lis=[]
mul=1
for i in range(0,n):
  ele=int(input("Enter elements  :"))
  lis.append(ele)
max=lis[0]
for j in lis:
  if j >max:
    max=j
print("LIST :",lis)
print("Largest number is :",max)
```

```
Enter number of elements you want to print5
Enter elements  :1
Enter elements  :2
Enter elements  :3
Enter elements  :4
Enter elements  :5
LIST : [1, 2, 3, 4, 5]
Largest number is : 5
```

4. Write a Python program to get the smallest number from a list without using inbuilt function.

[ ]:
```
n=int(input("Enter total length of list :"))
lis=[]

for i in range(0,n):
  ele=int(input("Enter elements :"))
  lis.append(ele)
min=lis[0]
for j in lis:
  if j<min:
    min=j
print("LIST :",lis)
print("Minimum number is :",min)
```

```
Enter total length of list :5
Enter elements :1
Enter elements :2
Enter elements :3
Enter elements :4
Enter elements :5
LIST : [1, 2, 3, 4, 5]
Minimum number is : 1
```

5. Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings

[ ]:
```
n=int(input("Enter total length of list :"))
lis=[]

for i in range(0,n):
```

```
  ele=(input("Enter elements :"))
  if(len(ele) >1):
    if(ele[0]==ele[-1]):
       lis.append(ele)
print("Number of elements :",len(lis))
print(lis)
```

```
Enter total length of list :3
Enter elements :XEROX
Enter elements :O
Enter elements :BRUB
Number of elements : 2
['XEROX', 'BRUB']
```

6. Write a Python program to remove duplicates from a list.

[ ]:
```
n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=(input("Enter elements with duplicates :"))
  if ele not in lis:
    lis.append(ele)
print("duplicates :",lis)
```

```
Write how many elements you want in your list with  :5
Enter elements with duplicates :1
Enter elements with duplicates :1
Enter elements with duplicates :2
Enter elements with duplicates :3
Enter elements with duplicates :3
Original list : ['1', '2', '3']
duplicates : ['1', '2', '3']
```

7. Write a Python program to check a list is empty or not.

[ ]:
```
def check(lis):
  if len(lis)!=0:
    print(lis," is not empty")
  else:
    print(lis," is empty")
list2=[]
check(list2)
list3=[1,2,3]
check(list3)
```

```
[]  is empty
[1, 2, 3]  is not empty
```

8. Write a Python program to find the list of words that are longer than length ‘n’ from a given list of words.

[ ]:
```
def longword(n,strn):
  txt=[]
  spl=strn.split(" ")
```

```
  for i in spl:
    if len(i)> n:
      txt.append(i)
  print(txt)

longword(3, "the list of words that are longer than length  from a given list of␣
 ↪words")
```

```
['list', 'words', 'that', 'longer', 'than', 'length', 'from', 'given', 'list', 'words']
```

9. Write a Python function that takes two lists and returns True if they have at least one common member.

[ ]:
```
def common_data(list1, list2):
     result = False
     for x in list1:
         for y in list2:
             if x == y:
                 result = True
                 return result
print(common_data([1,2,3,4,5], [5,6,7,8,9]))
print(common_data([1,2,3,4,5], [6,7,8,9]))
```

```
True
None
```

10. Write a Python program to print the numbers of a specified list after removing even numbers from it.

[ ]:
```
n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=int(input("Enter elements :"))
  lis.append(ele)
print("List =",lis)
splis=[]
for j in lis:
  if j%2!=0:
    splis.append(j)
print("SPECIFIED LIST AFTER REMOVING EVEN NUMBER IS :",splis)
```

```
Write how many elements you want in your list with  :3
Enter elements with duplicates :1
Enter elements with duplicates :2
Enter elements with duplicates :3
List = [1, 2, 3]
SPECIFIED LIST AFTER REMOVING EVEN NUMBER IS : [1, 3]
```

11. Write a Python program to generate a list of elements where the values are square of numbers between 1 and 30 (both included).

[ ]:
```
n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=int(input("Enter elements  :"))
```

```
  lis.append(ele)
print("List =",lis)
sqrlist=[]
for j in range(1,31):
   s=j**2
   sqrlist.append(s)
newlis=[]
for k in range(0,n):
  if lis[k] in sqrlist:
    newlis.append(lis[k])
print("a list of elements where the values are square of numbers between 1 and␣
 ↪30",newlis)
```

```
Write how many elements you want in your list with  :5
Enter elements with duplicates :2
Enter elements with duplicates :4
Enter elements with duplicates :5
Enter elements with duplicates :1
Enter elements with duplicates :16
List = [2, 4, 5, 1, 16]
a list of elements where the values are square of numbers between 1 and 30 [4, 1, 16]
```

12. Write a Python program to convert a list of characters into a string.

[ ]:
```
n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=(input("Enter characters :"))
  lis.append(ele)
print("List =",lis)
convert=""
for j in lis:
  convert+=j
print("converted  =",convert)
```

```
Write how many elements you want in your list with  :6
Enter characters :D
Enter characters :A
Enter characters :I
Enter characters :I
Enter characters :C
Enter characters :T
List = ['D', 'A', 'I', 'I', 'C', 'T']
converted  = DAIICT
```

13. Write a python program to check whether two lists are circularly identical.

[ ]:
```
lis1=[10,20,30,40,50]
lis2=[30,40,50,10,20]
lis1.extend(lis1)
for x in range(len(lis1)):
  if lis2==lis1[x: x + len(lis2)]:
    print("True")
```

```
True
```

```
[ ]:
```

14. Write a Python program to find the second largest number in a list.

```
[ ]: n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=int(input("Enter number :"))
  lis.append(ele)
print("List =",lis)
if lis[0]>lis[1]:
  max=lis[0]
  smax=lis[1]
else:
  max=lis[1]
  smax=lis[0]

for j in range(2,n):
  if lis[j]>max:
    smax=max
    max=lis[j]
  elif lis[j]> smax and lis[j]!=max:
    smax=lis[j]
  elif max==smax and smax!=lis[j]:
    smax=lis[j]
print("Second largest number is :",smax)
```

```
Write how many elements you want in your list with  :5
Enter number :1
Enter number :2
Enter number :3
Enter number :4
Enter number :6
List = [1, 2, 3, 4, 6]
Second largest number is : 4
```

15. Write a Python program to get unique values from a list.

```
[ ]: n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=int(input("Enter number :"))
  lis.append(ele)
print("List =",lis)

uniq=[]
for j in lis:
  if j not in uniq:
    uniq.append(j)
print("Unique list is :",uniq)
```

```
Write how many elements you want in your list with  :5
Enter number :2
Enter number :2
Enter number :5
Enter number :6
Enter number :5
List = [2, 2, 5, 6, 5]
Unique list is : [2, 5, 6]
```

16. Write a Python program to count the number of elements in a list within a specified range.

[ ]:
```
n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=int(input("Enter number :"))
  lis.append(ele)
print("List =",lis)

count=0
m=int(input("Enter range to count :"))
p=int(input("to "))
for j in lis:
  if j>=m and j<=p:
    count+=1
print("Elements in a list within a specified range is :",
      count)
```

```
Write how many elements you want in your list with  :6
Enter number :10
Enter number :20
Enter number :50
Enter number :40
Enter number :60
Enter number :100
List = [10, 20, 50, 40, 60, 100]
Enter range to count :20
to 80
Elements in a list within a specified range is : 4
```

17. Consider a list (list = []). You can perform the following commands:
    a. insert(i,e): Insert integer e at position i.
    b. print: Print the list.
    c. Remove(e): Delete the first occurrence of integer e.
    d. Append(e): Insert integer e at the end of the list.
    e. sort: Sort the list.
    f. pop: Pop the last element from the list.
    g. reverse: Reverse the list.

[ ]:
```
list=[]
while(True):
  print("opt. 1 :insert element\nopt 2:display \n opt 3:Remove\n opt 4:Append \n opt5:␣
 ↪sort \n opt 6:pop\n opt 7:reverse\nopt 8:DONE")

  n=int(input("Choose option to perform a task in a list ",))

  if n==1:
    p=int(input("Enter position :"))
    m=input("ENTER ELEMENT :")
    list.insert(p-1,m)

  elif n==2:
    print("LIST :",list)

  elif n==3:
    p=input("Enter removing element :")
    list.remove(p)

  elif n==4:
    p=input("Enter appending element :")
    list.append(p)

  elif n==5:
    list.sort()

  elif n==6:
    p=int(input("Enter position to delete an element :"))
    list.pop(p-1)

  elif n==7:
    list.reverse()

  elif n==8:
    print("Done")
    break

  else:
    print("Enter valid case")
```

```
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 1
Enter position :1
ENTER ELEMENT :5
opt. 1 :insert element
```

```
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 2
LIST : ['5']
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 3
Enter removing element :5
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 4
Enter appending element :
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 4
Enter appending element :8
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 4
Enter appending element :2
opt. 1 :insert element
opt 2:display
 opt 3:Remove
```

```
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 4
Enter appending element :18
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 5
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 2
LIST : ['', '18', '2', '8']
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 5
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 2
LIST : ['', '18', '2', '8']
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
```

```
opt 8:DONE
Choose option to perform a task in a list 5
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 2
LIST : ['', '18', '2', '8']
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 6
Enter position to delete an element :2
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 2
LIST : ['', '2', '8']
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 7
opt. 1 :insert element
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 2
LIST : ['8', '2', '']
opt. 1 :insert element
```

```
opt 2:display
 opt 3:Remove
 opt 4:Append
 opt5: sort
 opt 6:pop
 opt 7:reverse
opt 8:DONE
Choose option to perform a task in a list 8
Done
```

18. Given the names and grades for each student in a class of students, store them in a nested list and print the name(s) of any student(s) having the second lowest grade. Note: If there are multiple students with the second lowestgrade, order their names alphabetically and print each name on a new line. Example Records=[[“MAAZA”,20.00],[“SPRITE”,30.00],[“PEPSI”,30.00]

[2]:
```
list1 = [["ISHA", 'C'], ["JAY", 'A'], ["OM", 'A'], ["SAHIL", 'B'], ["YUKTA",'B']]
grades = []
for i in range(len(list1)):
  grades.append(list1[i][1])
  grades = sorted(list(set(grades)))
names = []
for i in list1:
  if i[1] == grades[-2]:
    names.append(i[0])
    names.sort()
for i in names:
  print(i)
```

```
SAHIL
YUKTA
```

19. Write a python program to check if a list contains three consecutive numbers.

[ ]:
```
n=int(input("Write how many elements you want in your list with  :"))
lis=[]
for i in range(0,n):
  ele=int(input("Enter number :"))
  lis.append(ele)
print("List =",lis)

for i in range(n-2):
  if lis[i]==lis[i+1] - 1 and lis[i+1]==lis[i+2]-1:
    print("yes")
```

```
Write how many elements you want in your list with  :5
Enter number :8
Enter number :2
Enter number :3
Enter number :4
Enter number :4
List = [8, 2, 3, 4, 4]
yes
```

20. Write a python program to remove all the occurrences of a given element from a list

[ ]:
```
def rem_ele(list,ele):
  res=[i for i in list if i!=ele]
  return res

if __name__=="__main__":
  list=[1,2,3,4,2,3,6]
  ele= 2 #element whichis to be removed
  print("Original list ",list)
  res =rem_ele(list,ele)
  print("Result :",res)

  list=[2,3,4,6,7,3]
  ele=3
  print("Original list ",list)
  res =rem_ele(list,ele)
  print("Result :",res)
```

```
Original list  [1, 2, 3, 4, 2, 3, 6]
Result : [1, 3, 4, 3, 6]
Original list  [2, 3, 4, 6, 7, 3]
Result : [2, 4, 6, 7]
```

21. Write a python program to swap 2 mentioned characters at index (a,b) in any given string

[6]:
```
a=int(input("Enter 1st index  :"))
b=int(input("Enter 2nd index  :"))
string = input("Enter the sring: ")
string = list(string)
string[a], string[b] = string[b], string[a]
string=''.join(string)
print(string)
```

```
Enter 1st index  :1
Enter 2nd index  :2
Enter the sring: PYTHON
PTYHON
```

22. Write a python program to remove all the duplications from a given list

[ ]:
```
def remove(duplicate):
  lis=[]
  for i in duplicate:
    if i not in lis:
      lis.append(i)
  print("result :",lis)

duplicate=[1,2,3,4,5,3,3,2,6,7]
print("Duplicate list :",duplicate)
remove(duplicate)
```

```
Duplicate list : [1, 2, 3, 4, 5, 3, 3, 2, 6, 7]
result : [1, 2, 3, 4, 5, 6, 7]
```

23. Write a python program to extract tuples with ‘k’ digit elements

```
[ ]: tuple1=[(12,22),(345,335),(43,23),(567,743),(65,),(32,13),(234,454)]
k=2
my_result = [i for  i in tuple1 if all(len(str(j)) == k for j in i)]
print(my_result)
```

```
[(12, 22), (43, 23), (65,), (32, 13)]
```

```
[ ]: tuple2=(22,34,2222,4,554,322)
k=2
for i in tuple1:
  for j in i :
    if len(str(j))==k:
      result=
```

24. Given two tuples, write a python program to find the intersecting elements

```
[ ]: tuple1=(1,2,3,4,5,6,7,8,9)
tuple2=(6,4,77,90,8,9,56)
for i in tuple1:
  for j in tuple2:
    if i==j:
      print(i,end=" ")
```

```
4 6 8 9
```

25. Write a python program to remove duplicates from a tuple

```
[ ]: tuple1=(1,2,3,4,4,2,1,6,7,9)
x=[]
for i in tuple1:
  if i not in x:
    x.append(i)
res=tuple(x)
print("The tuple after removing duplicates : " ,res)
```

```
The tuple after removing duplicates :  (1, 2, 3, 4, 6, 7, 9)
```

```
[ ]:
```

26. Write a python program to check if two tuples are same or not.

```
[ ]: tuple1=(1,2,3,4,5,6)
tuple2=(1,2,3,4,5,6)
if tuple1==tuple2:
  print("EQUAL")
else:
  print("Note equal")
```

```
EQUAL
```

```
[ ]: lis1=[]
n=int(input("LENGTH"))
for i in range(n):
```

```
  ele=int(input("ELEMENT"))
  lis1.append(ele)
m=tuple(lis1)
print(m)
```

```
LENGTH5
ELEMENT1
ELEMENT2
ELEMENT3
ELEMENT4
ELEMENT5
(1, 2, 3, 4, 5)
```

27. Write a python program to accept a string (having uppercased and lowercased characters) from user and convert it to uppercased string

[ ]:
```
n=input("Enter string in upper and lower case  :")
print(n.upper())
```

```
Enter string in upper and lower case  :Upper Case To Lower Case
UPPER CASE TO LOWER CASE
```

28. Write a python program to accept a string from user and display by incrementing each word by one unit. For eg: incrementing 'a' will give 'b', 'A' will give 'B', 1 will give 2 and so on.

[ ]:
```
n=input("Enter ANYTHINK  :")
for i in n:
  x=ord(i)+1
  print(chr(x),end="")
```

```
Enter string  :STRING2
TUSJOH3
```

29. Write a python program to accept a miscellaneous string (with characters, digits and special characters) and store them in separate strings of characters, digits and special characters.

[ ]:
```
n=input("Enter input  :")
strn=[]
digit=[]
spchar=[]
for i in n:
  if 'a' <= i.lower() <= 'z':
    strn.append(i)
  elif '0'<= i and i<='9':
    digit.append(i)
  else:
    spchar.append(i)
print("STRING :",strn)
print("DIGITS :",digit)
print("SPECIAL CHARACTER :",spchar)
```

```
Enter input  :jatansahu2000@
STRING : ['j', 'a', 't', 'a', 'n', 's', 'a', 'h', 'u']
```

```
DIGITS : ['2', '0', '0', '0']
SPECIAL CHARACTER : ['@']
```

30. Write a python program to accept a string and sort the string in descending order.

[5]:
```
n=input("Enter string  :")
n=list(n)
n.sort(reverse = True)
str1 = ''.join(n)
print(str1)
```

```
Enter string  :PYTHON
YTPONH
```

31. Write a python program to accept a string and remove the vowels from that string.

[ ]:
```
strn=input("Enter string :")
lis=[]
for i in strn:
   vowel=['a','e','i','o','u']
   if i not in vowel:
    lis.append(i)
print(''.join(lis))
```

```
Enter string :Python
Pythn
```

[ ]:

[ ]:

[ ]:

[ ]:

[ ]: