

1.Manipulate using a list

In [8]:

```
# to add new elements to the end of the list
```

```
l=[1,2,3]
```

```
l
```

Out[8]:

```
[1, 2, 3]
```

In [9]:

```
l.append(4)
```

```
l
```

Out[9]:

```
[1, 2, 3, 4]
```

In [10]:

```
# to reverse elements in the list
```

```
l.reverse()
```

In [12]:

```
l
```

Out[12]:

```
[4, 3, 2, 1]
```

In [14]:

```
#to display the same list of elements multiple times
```

```
l*3
```

Out[14]:

```
[4, 3, 2, 1, 4, 3, 2, 1, 4, 3, 2, 1]
```

In [18]:

```
# to concatenate two lists
```

```
l1 = [5,6,7,8]
```

```
l2=l+l1
```

```
l2
```

Out[18]:

```
[4, 3, 2, 1, 5, 6, 7, 8]
```

In [21]:

```
# to sort the elements in the list in ascending order
l2.sort()
l2
```

Out[21]:

```
[1, 2, 3, 4, 5, 6, 7, 8]
```

2. write a python program to do in the tuples

In [44]:

```
# manipulate using tuples
t=(1,2,3)
t[0]=0
```

```
-----
-
TypeError                                Traceback (most recent call last)
t)
Cell In[44], line 3
      1 # manipulate using tuples
      2 t=(1,2,3)
----> 3 t[0]=0
```

TypeError: 'tuple' object does not support item assignment

```
#we are not able to manipulate the tuple
```

In [46]:

```
# add new elements end of the tuple
t=(1,2,3)
t = t+(4,5,6)
t
```

Out[46]:

```
(1, 2, 3, 4, 5, 6)
```

In [47]:

```
# reverse elements
t[::-1]
```

Out[47]:

```
(6, 5, 4, 3, 2, 1)
```

In [29]:

```
# display elements multiple times  
t*3
```

Out[29]:

(1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6)

In [31]:

```
# concatenate two tuples  
t1 = (7,8,9)  
t2 = t+t1  
t2
```

Out[31]:

(1, 2, 3, 4, 5, 6, 7, 8, 9)

In [36]:

```
# sort the elemets  
list(t2).sort()  
t2
```

Out[36]:

(1, 2, 3, 4, 5, 6, 7, 8, 9)

In [48]:

```
t3 = (5,7,3,8,5,1)  
sorted_tuple = tuple(sorted(t3))  
sorted_tuple
```

Out[48]:

(1, 3, 5, 5, 7, 8)

3. Write a python program to implement the following using list

In [49]:

```
# create a list with integers (minimum 10 numbers)  
l4=[1,2,3,4,5,6,7,8,9,10]  
l4
```

Out[49]:

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

In [51]:

```
#how to display the last number in the list  
l4[-1]
```

Out[51]:

10

In [53]:

```
#display values from [0:4]  
l4[0:4]
```

Out[53]:

[1, 2, 3, 4]

In [55]:

```
#display values from [2:]  
l4[2:]
```

Out[55]:

[3, 4, 5, 6, 7, 8, 9, 10]

In [57]:

```
#display values from [:6]  
l4[:6]
```

Out[57]:

[1, 2, 3, 4, 5, 6]

4.write a python program:tuple=(10,50,20,40,30)

In [59]:

```
t4=(10,50,20,40,30)  
t4
```

Out[59]:

(10, 50, 20, 40, 30)

In [61]:

```
#display 10 and 50 from tuple  
t4[:2]
```

Out[61]:

(10, 50)

In [63]:

```
#length of tuple  
len(t4)
```

Out[63]:

5

In [65]:

```
#to find minimum element from tuple  
min(t4)
```

Out[65]:

10

In [67]:

```
#to add all element from tuple  
sum(t4)
```

Out[67]:

150

In [69]:

```
#display multiple times  
t4*3
```

Out[69]:

(10, 50, 20, 40, 30, 10, 50, 20, 40, 30, 10, 50, 20, 40, 30)

5.write a python program

In [71]:

```
s='jagadeesh'  
s
```

Out[71]:

'jagadeesh'

In [74]:

```
#to calculate the length of the string  
len(s)
```

Out[74]:

9

In [76]:

```
#reverse a string  
s[::-1]
```

Out[76]:

```
'hseedagaj'
```

In [78]:

```
#display multiple times  
s*3
```

Out[78]:

```
'jagadeeshjagadeeshjagadeesh'
```

In [81]:

```
#concatenate two strings  
s1='kumar'  
s2 = s+' '+s1  
s2
```

Out[81]:

```
'jagadeesh kumar'
```

In [83]:

```
#5  
str1 = 'South India'  
str1[-5:]
```

Out[83]:

```
'India'
```

6.perform the following

In [85]:

```
# create a dictionary  
d={'f_name':'jagadeesh','l_name':'madagala'}  
d
```

Out[85]:

```
{'f_name': 'jagadeesh', 'l_name': 'madagala'}
```

In [87]:

```
#accessing values and keys  
d.items()
```

Out[87]:

```
dict_items([('f_name', 'jagadeesh'), ('l_name', 'madagala')])
```

In [89]:

```
#update dic using fun  
d.update({'age':23})
```

In [90]:

```
d
```

Out[90]:

```
{'f_name': 'jagadeesh', 'l_name': 'madagala', 'age': 23}
```

In [93]:

```
d.clear()  
d
```

Out[93]:

```
{}
```

7.python program to insert a number to any position in a list

In [105]:

```
l5 = [12,13,14,16]  
l5
```

Out[105]:

```
[12, 13, 14, 16]
```

In [106]:

```
l5.insert(0,11)  
l5
```

Out[106]:

```
[11, 12, 13, 14, 16]
```

In [107]:

```
l5.insert(4,15)  
l5
```

Out[107]:

```
[11, 12, 13, 14, 15, 16]
```

8.python program to delete an element from a list by index

In [108]:

```
15.pop(2)
```

Out[108]:

13

In [110]:

```
15
```

Out[110]:

[11, 12, 14, 15, 16]

9.write a program to display numbers from 1 to 100



In [113]:

```
for i in range(1,101):  
    print(i)
```

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
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99
100

10.write a program to find the sum of all elemnts in a tuple

In [115]:

```
t5=(10,50,20,40,30)
sum(t5)
```

Out[115]:

150

11.create a dic containing three lambda functions square, cube, and square root

In [116]:

```
dict={'square':def sqr(int n):  
    }
```

Cell In[116], line 1

```
dict={'square':def sqr(int n):  
    ^
```

SyntaxError: invalid syntax

12. A list of words given, find the words from the list that have their second character in upper case

In [118]:

```
ls = ['hello', 'Dear', 'hOw', 'ARe', 'You']  
for i in ls:  
    if i[1].isupper():  
        print(i)
```

hOw
ARe

13. A dict of names and weights on earth is given. find how much weigh in moon

In [121]:

```
woe = {'john':45,'Shelly':65,"Marry":35}  
woe
```

Out[121]:

```
{'john': 45, 'Shelly': 65, 'Marry': 35}
```

In [126]:

```
wom = {}  
for i,j in woe.items():  
    wom[i] = ((j*1.622)/9.81)
```

In [128]:

wom

Out[128]:

```
{'john': 7.440366972477065,  
 'Shelly': 10.747196738022426,  
 'Marry': 5.786952089704383}
```

Control Structures

1. write a python program to find first n prime numbers

In [140]:

```
from math import sqrt

num = int(input("Enter a number: "))
count = 0
n = 2

while count < num:
    prime_flag = True

    for i in range(2, int(sqrt(n)) + 1):
        if (n % i) == 0:
            prime_flag = False
            break

    if prime_flag:
        print(n, end = " ")
        count = count + 1
    n = n + 1
```

Enter a number: 5
2 3 5 7 11

2.calculate salary of an employee

In [146]:

```
bs=int(input('enter bs:'))
hra = int(input('enter hra:'))
ta = int(input('enter ta:'))
da = int(input('enter da:'))
gs=bs+hra+ta+da
tax =(10/100)*gs
ns = gs-tax
print('gross salary:',gs)
print('tax:',tax)
print('net salary:',ns)
```

enter bs:15000
enter hra:5000
enter ta:2000
enter da:1000
gross salary: 23000
tax: 2300.0
net salary: 20700.0

3.write a python program to search for a string in the given list

In [148]:

```
l6= ['jagadeesh', 'darshan', 'govind', 'pawan','srini']  
  
s = 'govind'  
  
if s in l6:  
    print(f'{s} is present in the list')  
else:  
    print(f'{s} is not present in the list')
```

govind is present in the list

4.write a python function that accepts a string and calculates the number of upper-case letters and lower-case letters

In [151]:

```
s4 =input('enter the string:')  
nou=0  
nol=0  
for i in s4:  
    if i.isupper():  
        nou+=1  
    else:  
        nol+=1  
  
print('The no of upper case letters:',nou)  
print('The no of lower case letters:',nol)
```

enter the string:JaGaDeEsH
The no of upper case letters: 5
The no of lower case letters: 4

5. write a program to display the sum of odd numbers and even numbers that fall between 12 and 37.

In [154]:

```
soen=0  
sood=0  
for i in range(12,37):  
    if i%2==0:  
        soen+=i  
    else:  
        sood+=i  
print('the sum of odd numbers:',sood)  
print('the sum of even numbers:',soen)
```

the sum of odd numbers: 288
the sum of even numbers: 312

6.write a program the table of any number

In [156]:

```
n=int(input('enter the number to calculate table:'))  
for i in range(1,21):  
    print(n,'*',i,'=',n*i)
```

enter the number to calculate table:2

```
2 * 1 = 2  
2 * 2 = 4  
2 * 3 = 6  
2 * 4 = 8  
2 * 5 = 10  
2 * 6 = 12  
2 * 7 = 14  
2 * 8 = 16  
2 * 9 = 18  
2 * 10 = 20  
2 * 11 = 22  
2 * 12 = 24  
2 * 13 = 26  
2 * 14 = 28  
2 * 15 = 30  
2 * 16 = 32  
2 * 17 = 34  
2 * 18 = 36  
2 * 19 = 38  
2 * 20 = 40
```

7. write a python program to sum the first ten prime numbers

In [175]:

```
from math import sqrt

num = int(input("Enter a number: "))
count = 0
n = 2
l=[]

while count < num:
    prime_flag = True

    for i in range(2, int(sqrt(n)) + 1):
        if (n % i) == 0:
            prime_flag = False
            break

    if prime_flag:
        l.append(n)
        count = count + 1
    n = n + 1
print(l)
print('sum of first ten prime numbers: ',sum(l))
```

Enter a number: 10

[2, 3, 5, 7, 11, 13, 17, 19, 23, 29]

sum of first ten prime numbers: 129

8.write a program to implement arthimetic operation using nested if statement

In [179]:

```
n1=int(input('enter the first number:'))
n2=int(input('enter the second number:'))
operation = input('enter the arthimetic operation: ')
if operation == 'add':
    print(n1+n2)
elif operation == 'sub':
    print(n1-n2)
elif operation == 'mul':
    print(n1*n2)
else:
    print(n1/n2)
```

enter the first number:15

enter the second number:5

enter the arthimetic operation: add

20

9.write a python program to take temp in celsius and convert into farenheit

In [164]:

```
celsius = float(input('enter the celsius temperature: '))  
  
fahrenheit = (celsius * 1.8) + 32  
  
print('{} celsius is equal to {} fahrenheit'.format(celsius,fahrenheit))
```

enter the celsius temperature: 38.9
38.9 celsius is equal to 102.02 fahrenheit

10.write a python program to find minimum and maximum number in a list without using an inbuilt function

In [169]:

```
l7=[34,65,76,8,82,75,12]  
max_num = 0  
min_num = l7[0]  
for i in l7:  
    if i>max_num:  
        max_num = i  
    if i<min_num:  
        min_num = i  
print('The maximum number in the list: ',max_num)  
print('The minimum number in the list: ',min_num)
```

The maximum number in the list: 82
The minimum number in the list: 8

11.write a program in python print out the number of seconds in 30 day month 30 days,24 hours in a day, 60 minutes per hour, 60 seconds in minute

In [173]:

```
print('seconds_in_month=',30*24*60*60)  
print('seconds_in_24_hrs=',24*60*60)  
print('seconds_in_1_hr=',60*60)  
print('seconds_in_1_min=',1*60)
```

seconds_in_month= 2592000
seconds_in_24_hrs= 86400
seconds_in_1_hr= 3600
seconds_in_1_min= 60

12.write a program in python to print no oof seconds in year

In [174]:

```
days_in_year = 365
hours_in_day = 24
minutes_in_hour = 60
seconds_in_minute = 60

result = days_in_year * hours_in_day * minutes_in_hour * seconds_in_minute

print("Number of seconds in a year are: {}".format(result))
```

Number of seconds in a year are: 31536000

13.A high speed train at an average speed of 150 mph, how long will it take a train travelling at this speed to travel from London to Glasgow is 414 miles away.

In [180]:

```
d=414
s=150
t=d/s
print('time taken to travel: ',t,'hrs')
```

time taken to travel: 2.76 hrs

14.write a python program that defines a variable called days_in_each_school_year and assign 192 to the variable. the program should then print out the total hrs that your

In [182]:

```
days_in_each_school_year = 192
total_hrs=0
for i in range(7,12):
    total_hrs+=(192*6)
print('total hours spent in school:',total_hrs)
```

total hours spent in school: 5760

15.if the age of Ram,sam and khan are input through the keyboard, write program to determine the eldest and youngest of the three

In [190]:

```
Ram_age = int(input('enter the age of ram: '))
Sam_age = int(input('enter the age of sam: '))
Khan_age = int(input('enter the age of khan: '))
d={Ram_age: 'Ram', Sam_age: 'Sam', Khan_age: 'Khan'}
eldest=''
youngest=''
if(Ram_age>Sam_age and Ram_age>Khan_age):
    eldest=Ram_age
elif(Sam_age>Khan_age):
    eldest=Sam_age
else:
    eldest=Khan_age

if(Ram_age<Sam_age and Ram_age<Khan_age):
    youngest=Ram_age
elif(Sam_age<Khan_age):
    youngest=Sam_age
else:
    youngest=Khan_age
print('The youngest is',d[youngest])
print('The eldest is',d[eldest])
```

```
enter the age of ram: 26
enter the age of sam: 24
enter the age of khan: 28
The youngest is Sam
The eldest is Khan
```

16.write a python program to rotate a list by right n times with and without slicing technique

In [199]:

```
num = 3
lists= [1, 2, 3, 4, 5, 6]
output_list = []

for item in range(len(lists) - num, len(lists)):
    output_list.append(lists[item])

for item in range(0, len(lists) - num):
    output_list.append(lists[item])

print(output_list)
```

```
[4, 5, 6, 1, 2, 3]
```

17.python program to print patterns given below