1.manipulating using a list

1.to add a new elements to the end of the list.

In [2]:
```
lst=[123,345,789]
lst.append(786)
lst
```

Out[2]:
```
[123, 345, 789, 786]
```

2.to reversse elements in the string

In [5]:
```
lst1=[6764,5566,789]
lst1.reverse()
print(lst1)
```

```
[789, 5566, 6764]
```

3.To display the same list of elements mutiple times

In [8]:
```
lst=[234,432,542]
lst
```

Out[8]:
```
[234, 432, 542]
```

In [9]:
```
l=lst*3
l
```

Out[9]:
```
[234, 432, 542, 234, 432, 542, 234, 432, 542]
```

4. To concatenate two lists

In [10]:
```
lst2=[8878,563,666]
print(lst+lst2)
```

```
[234, 432, 542, 8878, 563, 666]
```

5.To sort the elements of the list in ascending order

In [13]:
```
lst.sort()
lst
```

Out[13]:
```
[234, 432, 542]
```

2.Write a pyrhon program to do in tuples

1.manipulatig using tuples

In [30]:
```
tuple1=(898,"tauheer",908.2)
```

2. To add new element to the end of tuple

In [31]:
```
tuple2=(85,55.3,"Ahamed")
```

In [32]:
```
new_tuple=tuple1+tuple2
print(new_tuple)
```

```
(898, 'tauheer', 908.2, 85, 55.3, 'Ahamed')
```

3. To reverse elements in the list

In [35]:
```
tuple3=tuple1[::-1]
tuple3
```

Out[35]:
```
(908.2, 'tauheer', 898)
```

4.To display the elements of same tuple multiple times

In [39]:
```
t=(tuple1*3)
t
```

Out[39]:
```
(898, 'tauheer', 908.2, 898, 'tauheer', 908.2, 898, 'tauheer', 908.2)
```

5.To concatanate two tuples

In [40]:
```
t1=tuple1+tuple2
t1
```

Out[40]:
```
(898, 'tauheer', 908.2, 85, 55.3, 'Ahamed')
```

6.To sort the elements of the list in ascending order

In [47]:
```
tuple3=(425,55.45,5359)
tuple3=list(tuple3)
tuple3.sort()
tuple3=tuple(tuple3)
print(tuple3)
```

```
(55.45, 425, 5359)
```

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

1.Create a list with integers (min 10)

In [48]:
```
lstt=(1,2,3,4,5,6,7,8,9,10)
lstt
```

Out[48]:
```
(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)
```

2.display last number in the list

In [51]:
```
lstt[-1]
```

Out[51]:
```
10
```

In [52]:
```
### 3.command to display values from the list [0:4]
lstt[0:4]
```

Out[52]:
```
(1, 2, 3, 4)
```

In [53]:
```
### 4.command to display values from [2:]
lstt[2:]
```

Out[53]:
```
(3, 4, 5, 6, 7, 8, 9, 10)
```

In [54]:
```
### 5 command to display values from [:6]
lstt[:6]
```

Out[54]:
```
(1, 2, 3, 4, 5, 6)
```

4.write a pythn program :tuple1=(10,50,20,40,30)

In [56]:
```
tuple1=(10,50,20,40,30)
tuple1
```

Out[56]:
```
(10, 50, 20, 40, 30)
```

In [59]:
```
### 1.to display elements 10 and 50 from tuple1
tuple1[0:2]
```

Out[59]:
```
(10, 50)
```

In [62]:
```
### 2.to display length of tuple1
len(tuple1)
```

Out[62]:
```
5
```

In [63]:
```
### 3. to find the minimum element from tuple1
min(tuple1)
```

Out[63]:
```
10
```

In [71]:
```
### 4 To add all elements to tuple1
tuple2=(54,76)
tuple2
```

Out[71]:
```
(54, 76)
```

In [74]:
```
tuple1+=tuple2
print(tuple1)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[74], line 1
----> 1 tuple1+=tuple2
      2 print(tuple1)

TypeError: unsupported operand type(s) for +=: 'NoneType' and 'tuple'
```

we cant add elements to tuple because they are immutable

In [79]:
```
### %.to display same tuple multiple times
print(tuple1)
```

```
None
```

In [80]:
```
tuple1=(10,50,20,40,30)
tuple1*3
```

Out[80]:
```
(10, 50, 20, 40, 30, 10, 50, 20, 40, 30, 10, 50, 20, 40, 30)
```

5.write a python program

In [90]:
```
### 1.to calculate length of string
str1=["tauheer","Ahamed"]
print(str1)
```

```
['tauheer', 'Ahamed']
```

In [91]:
```
len(str1)
```

Out[91]:
```
2
```

In [101…
```
### 2. to reverse words in string
txt = "TAuheerAhamed"[::-1]
print(txt)
```

```
demahAreehuAT
```

In [104…
```
### 3. To display the same string multiple times
txt1=txt*3
print(' ' ,txt1)
```

```
  demahAreehuATdemahAreehuATdemahAreehuAT
```

In [105…
```
### 4 To concatanate two strings
txt3="Hello"
txt4="World"
txt5=txt3+txt4
print(txt5)
```

```
HelloWorld
```

In [106…
```
### 5.str1="South India",using string slicing to display "india"
str1='South India'
print(str1[5:])
```

```
 India
```

6.perform the following

In [118…
```
### 1. Creating a directory
thisdict = {
  "brand": "Ford",
  "model": "Mustang",
```

```
  "year": 1964
}
```

In [119…
```
print(thisdict)
```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964}
```

In [123…
```
### 2.Accessing keys and vakues in dictionary
value=thisdict["brand"]
print(value)
```

```
Ford
```

In [124…
```
### 3.updating dictionary using a function
dict2={
    "price": 900000,

}
thisdict.update(dict2)
print(thisdict)
```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964, 'price': 900000}
```

In [127…
```
### 4.clear and delete dictionary values
dict2.clear()
print(dict2)
```

```
{}
```

7.Python program to insert any number in a list

In [135…
```
num_list = [1, 2, 3, 4, 5]

print(f'Current Numbers List {num_list}')

num = int(input("Please enter a number to add to list:\n"))

index = int(input(f'Please enter the index between 0 and {len(num_list) - 1} to add the number:\n'))

num_list.insert(index, num)

print(f'Updated Numbers List {num_list}')
```

```
Current Numbers List [1, 2, 3, 4, 5]
Please enter a number to add to list:
33
Please enter the index between 0 and 4 to add the number:
2
Updated Numbers List [1, 2, 33, 3, 4, 5]
```

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

In [136…
```
num_list
```

Out[136]:
```
[1, 2, 33, 3, 4, 5]
```

In [140…
```
num_list.pop()
num_list
```

Out[140]:
```
[1, 33, 3, 4]
```

9. Write a program to display anumber from 1 to 100

In [145…
```
import random
number=random.randint(1,100)
print(number)
```

```
93
```

10.write a python program to find sum of all numbers in tuple

In [147…
```
tuple5=(10,25.5,12)
sum=0
for i in tuple5:
    sum=sum+i
    i=i+1
print(sum)
```

```
47.5
```

11.ceate a dictionary containing 3 lambda functions square,cube and square root

In [149…
```
dict={
    "square": "",
    "cube":"function for cube",
    "square root":"function for square root"
}
print(dict)
```

```
{'square': '', 'cube': 'function for cube', 'square root': 'function for square root'}
```

In [150…
```
dict(value)=input("enter the square value")
print(dict)
```

```
  Cell In[150], line 1
    dict(value)=input("enter the square value")
    ^
SyntaxError: cannot assign to function call here. Maybe you meant '==' instead of '='?
```

12 . A list of words is gien .find the words from the list that have there second character in upper case

In [153…
```
ls=["hello","Dear","hOw","ARe","You"]


result = [word for word in ls if len(word) > 1 and word[1].isupper()]

print(result)
```

```
['hOw', 'ARe']
```

13 .a dictionary of names and there weights are given.Find how much they will weight on the moon

In [156…
```
weightOnMoon={
    "john":(45*1.62)/9.81,
    "Shelly":(65*1.62)/9.81
}
print(weightOnMoon)
```

```
{'john': 7.431192660550459, 'Shelly': 10.733944954128441}
```

control Statements

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

In [163…
```
i = 1
x = int(input("Enter the number:"))
for k in range(1, x+1):
    c = 0
    for j in range(1, i+1):
        a = i % j
        if a == 0:
            c = c + 1

    if c == 2:
        print(i)
    else:
        k = k - 1

    i = i + 1
```

```
Enter the number:15
2
3
5
7
11
13
```

2.Salary calculator

In [167…
```
b_sal=int(input("enter basic salary of the employee"))
```

```
hra=int(input("Enter HRA"))
ta=int(input("Enter TA value"))
da=int(input("Enter DA value"))
g_sal=b_sal+hra+ta+da
tax=g_sal-1/10
n_sal=g_sal-tax
print("The gross salary of the employee is ", g_sal)
print("The net salary of the employee is ", n_sal)
```

```
enter basic salary of the employee10000
Enter HRA52
Enter TA value52
Enter DA value55
The gross salary of the employee is  10159
The net salary of the employee is  0.10000000000003638
```

3.python program to search a string in list

In [175…
```
list6=("shaik","tauheed","ahamed")
list6
```

Out[175]:
```
('shaik', 'tauheed', 'ahamed')
```

In [176…
```
t1="tauheer"
if t1==list6:
    print("String found")
else:
    print("String not found")
```

```
String not found
```

4. display number odd and even number between 12 and 37

In [187…
```
o_count=0
e_count=0
for i in range (12,37):

  if not i%2:
        e_count=e_count+1
  else:
        o_count=o_count+1
print("The number of odd numbers is ", +o_count)
print("The numbe of even numbers is ", +e_count)
```

```
The number of odd numbers is  12
The numbe of even numbers is  13
```

5 Python program to print sum of odd and even numbers between 12 to 37

In [189…
```
o_sum=0
e_sum=0
for i in range (12,37):
  if i%2==0:
    e_sum=e_sum+i
  else:
    o_sum=o_sum+i
print("The sum of odd numbers is ", +o_sum)
print("The sum of even numbers is ", +e_sum)
```

```
The sum of odd numbers is  288
The sum of even numbers is  312
```

6.Python program to print the table of any number

In [193…
```
n=int(input("Enter the table number"))
for i in range (1,11):
  print(n,"x",i,"=",n*i)
```

```
Enter the table number2
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
```

7.Pyrthon program to print first 10 prime numbers

In [194…
```
i = 1
x = int(input("Enter the number:"))
for k in range(1, x+1):
    c = 0
    for j in range(1, i+1):
        a = i % j
        if a == 0:
            c = c + 1

    if c == 2:
        print(i)
    else:
        k = k - 1

    i = i + 1
```

```
Enter the number:10
2
3
5
7
```

8.write a python program to print arthamatic operations using nested if statement

In [195…
```
# chek whether a number is a positive number
n=int(input("Entr a number "))
if n>0:
    if n==0:
        print("Negitive number")
    else:
        print("positive number")
```

```
Entr a number 15678
positive number
```

9. convert temperature from celcious to forein heat

In [200…
```
c=int(input("Enter a celcious temperature "))
f=c*4.5+32
print(f)
```

```
Enter a celcious temperature 32
176.0
```

10 write a python program to find maximum and minimum number in the list with out using a inbuilt function

In [1]:
```
def find_max_min(numbers):
    if not numbers:
        return None, None

    max_num = numbers[0]
    min_num = numbers[0]

    for num in numbers:
        if num > max_num:
            max_num = num
        elif num < min_num:
            min_num = num

    return max_num, min_num


numbers = [12, 45, 7, 23, 56, 9, 2, 41]

max_number, min_number = find_max_min(numbers)

if max_number is not None and min_number is not None:
    print(f"Maximum number: {max_number}")
    print(f"Minimum number: {min_number}")
else:
    print("The list is empty.")
```

```
Maximum number: 56
Minimum number: 2
```

11. python program to print number of seconds in 30 days

11. python program to print number of seconds in 30 days

In [2]:
```
days=(int(input("Enter number of days ")))
hours=(int(input("Enter number of hours ")))
secs=(int(input("Enter number of seconds ")))
total=days*hours*secs
print(total)
```

```
Enter number of days 30
Enter number of hours 24
Enter number of seconds 60
43200
```

12.python program to print number od seconds in a year

In [3]:
```
days=(int(input("Enter number of days ")))
hours=(int(input("Enter number of hours ")))
secs=(int(input("Enter number of seconds ")))
total=days*hours*secs
print(total)
```

```
Enter number of days 365
Enter number of hours 24
Enter number of seconds 60
525600
```

13.Calculate average speed of train

In [2]:
```
a_speed=int(input("Enter the average speed of train "))
distance=int(input("Enter the total distance need to travel "))
time=distance/a_speed
print("The average time taken is ",+time ,"Hours")
```

```
Enter the average speed of train 150
Enter the total distance need to travel 414
The average time taken is  2.76 Hours
```

14.print time spent in school

In [3]:
```
days_in_each_school_year=192
joining_year=int(input("Enter joining year "))
ending_year=int(input("Enter ending year"))
time_spent_in_school=int(input("enter time"))
if (time_spent_in_school==6):
    y_diff=ending_year-joining_year
    h_time=y_diff*days_in_each_school_year*6
    print("Total hours spent in school is ",+h_time)
```

```
Enter joining year 7
Enter ending year11
enter time6
Total hours spent in school is  4608
```

15.youngest and eldest of 3

In [4]:
```
a_ram=int(input("Enter ram age"))
a_sam=int(input("Enter sam age"))
a_khan=int(input("Enter khan age"))
if a_ram>a_sam:
  if a_ram>a_khan:
    print("Ram is big")
  else:
    print("khan is big")
else:
  print("Sam is big")
```

```
Enter ram age15
Enter sam age14
Enter khan age18
khan is big
```

16 this program contains functions

In [5]:
```
 rows = int(input("Enter Pyramid Pattern Rows = "))

print("Pyramid Star Pattern")

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

```
    for j in range(0, rows - i - 1):
        print(end = ' ')
    for k in range(0, i + 1):
        print('*', end = ' ')
    print()
```

```
Enter Pyramid Pattern Rows = 7
Pyramid Star Pattern
      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * * *
* * * * * * *
```

In [10]:
```
# Python 3.x code to demonstrate star pattern

# Function to demonstrate printing pattern
def pypart(n):

    # outer loop to handle number of rows
    # n in this case
    for i in range(0, n):

        # inner loop to handle number of columns
        # values changing acc. to outer loop
        for j in range(0, i+1):

            # printing stars
            print("* ",end="")

        # ending line after each row
        print("\r")

# Driver Code
n = 5
pypart(n)
```

```
*
* *
* * *
* * * *
* * * * *
```

In [2]:
```
string =input("enter a string")
length=len(string)
for row in range(length):
    for col in range(row+1):
        print(string[col],end=" ")
    print()
```

```
enter a stringpython
p
p y
p y t
p y t h
p y t h o
p y t h o n
```

In [4]:
```
n = 7

for i in range(1, n+1):
    for j in range(0, n-i+1):
        print(' ', end='')
    C = 1
    for j in range(1, i+1):
        print(' ', C, sep='', end='')
        C = C * (i - j) // j
    print()
```

```
      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
 1 5 10 10 5 1
1 6 15 20 15 6 1
```

In [ ]: