Assignment Class 3

Python Conditional Statements and loops

In [1]:
```
'''Q1. Write a Python program to find those numbers which are divisible by 7 and
multiples of 5, between 1500 and 2700 (both included).
Output:
1505,1540,1575,1610,1645,1680,1715,1750,1785,1820,1855,1890,1925,1960,1
995,2030,2065,2100,2135,2170,2205,2240,2275,2310,2345,2380,2415,2450,24
85,2520,2555,2590,2625,2660,2695'''
```

Out[1]:
```
'Q1. Write a Python program to find those numbers which are divisible by 7 and\nmultiples of 5, between 1500 an
d 2700 (both included).\nOutput:\n1505,1540,1575,1610,1645,1680,1715,1750,1785,1820,1855,1890,1925,1960,1\n995,
2030,2065,2100,2135,2170,2205,2240,2275,2310,2345,2380,2415,2450,24\n85,2520,2555,2590,2625,2660,2695'
```

In [2]:
```
# Ans1
x = []
for i in range(1500,2701):
    if i%7==0 and i%5==0:
        x.append(i)
print(x)
```

```
[1505, 1540, 1575, 1610, 1645, 1680, 1715, 1750, 1785, 1820, 1855, 1890, 1925, 1960, 1995, 2030, 2065, 2100, 213
5, 2170, 2205, 2240, 2275, 2310, 2345, 2380, 2415, 2450, 2485, 2520, 2555, 2590, 2625, 2660, 2695]
```

In [3]:
```
'''Q2. Write a Python program that accepts a word from the user and reverses it.
INPUT: Input a word to reverse: Shailja
OUTPUT: ajliahS'''
```

Out[3]:
```
'Q2. Write a Python program that accepts a word from the user and reverses it.\nINPUT: Input a word to reverse:
Shailja\nOUTPUT: ajliahS'
```

In [4]:
```
x = input('Input a word to reverse: ')
y = x[::-1]
print(y)
```

```
Input a word to reverse: Hitesh
hsetiH
```

In [5]:
```
'''Q3. Write a Python program that prints all the numbers from 0 to 6 except 3 and 6. Note : Use 'continue' sta
Expected Output : 0 1 2 4 5'''
```

Out[5]:
```
"Q3. Write a Python program that prints all the numbers from 0 to 6 except 3 and 6. Note : Use 'continue' state
ment.\nExpected Output : 0 1 2 4 5"
```

In [6]:
```
# Ans3
x = -1
while x < 7:
    x += 1
    if x == 3 or x == 6:
        continue
    if x == 7:
        break
    print(x)
```

```
0
1
2
4
5
```

In [7]:
```
'''Q4. Write a Python program that prints each item and its corresponding type from
the following list.
INPUT = [1452, 11.23, 1+2j, True, 'w3resource', (0, -1), [5, 12], {"class":'V',
"section":'A'}]
OUTPUT:
Type of 1452 is <class 'int'>
Type of 11.23 is <class 'float'>
Type of (1+2j) is <class 'complex'>
Type of True is <class 'bool'>
Type of w3resource is <class 'str'>
Type of (0, -1) is <class 'tuple'>
Type of [5, 12] is <class 'list'>
Type of {'class': 'V', 'section': 'A'} is < class 'dict'>'''
```

Out[7]:
```
'Q4. Write a Python program that prints each item and its corresponding type from\nthe following list.\nINPUT = [1452, 11.23, 1+2j, True, \'w3resource\', (0, -1), [5, 12], {"class":\'V\',\n"section":\'A\'}]\nOUTPUT:\nType of 1452 is <class \'int\'>\nType of 11.23 is <class \'float\'>\nType of (1+2j) is <class \'complex\'>\nType of True is <class \'bool\'>\nType of w3resource is <class \'str\'>\nType of (0, -1) is <class \'tuple\'>\nType of [5, 12] is <class \'list\'>\nType of {\'class\': \'V\', \'section\': \'A\'} is < class \'dict\'>'
```

In [8]:
```
# Ans4
x = [1452, 11.23, 1+2j, True, 'w3resource', (0, -1), [5, 12], {"class":'V',
"section":'A'}]
for i in x:
    print('Type of',i,'is',type(i))
```

```
Type of 1452 is <class 'int'>
Type of 11.23 is <class 'float'>
Type of (1+2j) is <class 'complex'>
Type of True is <class 'bool'>
Type of w3resource is <class 'str'>
Type of (0, -1) is <class 'tuple'>
Type of [5, 12] is <class 'list'>
Type of {'class': 'V', 'section': 'A'} is <class 'dict'>
```

In [9]:
```
'''Q5. Write a Python program to check the validity of passwords input by users.
Validation :
At least 1 letter between [a-z] and 1 letter between [A-Z].
At least 1 number between [0-9].
At least 1 character from [$#@].
Minimum length 6 characters.
Maximum length 16 characters.
INPUT: Input your password:S3r@100a
OUTPUT:Valid Password'''
```

Out[9]:
```
'Q5. Write a Python program to check the validity of passwords input by users.\nValidation :\nAt least 1 letter between [a-z] and 1 letter between [A-Z].\nAt least 1 number between [0-9].\nAt least 1 character from [$#@].\nMinimum length 6 characters.\nMaximum length 16 characters.\nINPUT: Input your password:S3r@100a\nOUTPUT:Valid Password'
```

In [10]:
```
# Ans5
print('Conditions')
print('''At least 1 letter between [a-z] and 1 letter between [A-Z].
At least 1 number between [0-9].
At least 1 character from [$#@].
Minimum length 6 characters.
Maximum length 16 characters.''')
x = input('Input your password: ')
a = 0
b = 0
c = 0
d = 0
e = '123456789'
if len(x)>=6 and len(x)<=16:
    for i in x:
        if i in e:
            a = a+1
        if i in '$#@':
            b = b+1
        if i in 'abcdefghijklmnopqrstuvwxyz':
            c = c+1
        if i in 'ABCDEFGHIJKLMNOPQRSTUVWXYZ':
            d = d+1
if a>=1 and b>=1 and c>=1 and d>=1 and a+b+c+d==len(x):
    print('Valid Password')
else:
    print('Invalid Password')
```

```
Conditions
At least 1 letter between [a-z] and 1 letter between [A-Z].
At least 1 number between [0-9].
At least 1 character from [$#@].
Minimum length 6 characters.
Maximum length 16 characters.
Input your password: Ranga@12
Valid Password
```

In [11]:
```
'''Q6. Write a Python program to get the Fibonacci series between 0 and 50.
Note : The Fibonacci Sequence is the series of numbers :
0, 1, 1, 2, 3, 5, 8, 13, 21, ....
Every next number is found by adding up the two numbers before it.
Expected Output : 1 1 2 3 5 8 13 21 34'''
```

Out[11]:
```
'Q6. Write a Python program to get the Fibonacci series between 0 and 50.\nNote : The Fibonacci Sequence is the series of numbers :\n0, 1, 1, 2, 3, 5, 8, 13, 21, ....\nEvery next number is found by adding up the two numbers before it.\nExpected Output : 1 1 2 3 5 8 13 21 34'
```

In [12]:
```
# Ans6
```

```
# Ans6
a = 1
x = [1,1]
while a <= 50:
    b = x[a]+x[a-1]
    if b>50:
        break
    x.append(b)
    a+=1
print(x)
```

```
[1, 1, 2, 3, 5, 8, 13, 21, 34]
```

In [13]:
```
'''Q7. Write a Python program to check whether an alphabet is a vowel or consonant.
OUTPUT:
Input a letter of the alphabet: k
k is a consonant.'''
```

Out[13]:
```
'Q7. Write a Python program to check whether an alphabet is a vowel or consonant.\nOUTPUT:\nInput a letter of t
he alphabet: k\nk is a consonant.'
```

In [14]:
```
# Ans7
x = input('Input a letter of the alphabet: ').lower()
a = 'aeiou'
b = 'qwrtypsdfghjklzxcvbnm'
if x in a:
    print(x,'is a vowel.')
elif x in b:
    print(x,'is a consonant.')
else:
    print('Oops, Wrong choice')
```

```
Input a letter of the alphabet: a
a is a vowel.
```

In [15]:
```
'''Q8. Write a Python program that takes a string as input and replaces all
occurrences of a given character with another character.
INPUT: Enter a string: We study at GrowDataSkills
Enter the character to replace: G
Enter the replacement character: H
'''
```

Out[15]:
```
'Q8. Write a Python program that takes a string as input and replaces all\noccurrences of a given character wit
h another character.\nINPUT: Enter a string: We study at GrowDataSkills\nEnter the character to replace: G\nEnt
er the replacement character: H\n'
```

In [16]:
```
# Ans8
x = input('Enter a string: ').lower()
y = input('Enter the character to replace: ').lower()
z = input('Enter the replacement character: ').lower()
a = x.replace(y,z)
print(a)
```

```
Enter a string: My name is hitesh
Enter the character to replace: h
Enter the replacement character: s
my name is sitess
```

In [17]:
```
'''Q9: Write a Python function to reverse a list at a specific location.
INPUT: [10,20,30,40,50,60,70,80]
start_pos = 2
end_pos = 4
OUTPUT: Reverse elements of the said list between index position 2 and 4
[10, 20, 50, 40, 30, 60, 70, 80]'''
```

Out[17]:
```
'Q9: Write a Python function to reverse a list at a specific location.\nINPUT: [10,20,30,40,50,60,70,80]\nstart
_pos = 2\nend_pos = 4\nOUTPUT: Reverse elements of the said list between index position 2 and 4\n[10, 20, 50, 4
0, 30, 60, 70, 80]'
```

In [18]:
```
# Ans9
z = [10,20,30,40,50,60,70,80]
def x(start_pos,end_pos):
    a = z[0:start_pos]
    b = z[start_pos:end_pos+1]
    e = b[::-1]
    c = z[end_pos+1:]
    d = a+e+c
    return d

start_pos = 2
end_pos = 4
y = x(start_pos,end_pos)
print(y)
```

```
[10, 20, 50, 40, 30, 60, 70, 80]
```

In [19]:
```
'''Q10. Write a Python program that takes a string as input and checks if it is a
palindrome (reads the same forwards and backward).
INPUT: Enter a string: GrowDataSkills
OUTPUT: It is not a palindrome.'''
```

Out[19]:
```
'Q10. Write a Python program that takes a string as input and checks if it is a\npalindrome (reads the same for
wards and backward).\nINPUT: Enter a string: GrowDataSkills\nOUTPUT: It is not a palindrome.'
```

In [20]:
```
# Ans10
x = input('Enter a string: ').lower()
if len(x)%2 == 0:
    a = int(len(x)/2)
    c = x[0:a]
    d = x[a:]
    e = d[::-1]
    if c == e:
        print("It is a palindrome.")
    else:
        print('It is not a palindrome.')

elif len(x)%2 != 0:
    b = int(len(x)//2)
    f = x[0:b]
    g = x[b+1:]
    h = g[::-1]
    if f == h:
        print("It is a palindrome.")
    else:
        print('It is not a palindrome.')
```

```
Enter a string: Bookoob
It is a palindrome.
```

In [21]:
```
'''Q11. Write a Python program that takes a sentence as input and capitalizes the
first letter of each word.
INPUT: Enter a sentence: we are growdataskills
OUTPUT: Capitalized sentence: We Are Growdataskills'''
```

Out[21]:
```
'Q11. Write a Python program that takes a sentence as input and capitalizes the\nfirst letter of each word.\nIN
PUT: Enter a sentence: we are growdataskills\nOUTPUT: Capitalized sentence: We Are Growdataskills'
```

In [22]:
```
# Ans11
x = input('Enter a sentence: ')
y = x.split(' ')
z = []
for i in y:
    a = i[0].upper()
    b = a + i[1:]
    z.append(b)
ans = ' '.join(z)
print(ans)
```

```
Enter a sentence: My name is hitesh
My Name Is Hitesh
```

In [23]:
```
'''Q12. Write a Python program that takes two lists as input and returns a new list
containing the common elements between the two lists.
INPUT:
list1 = [1, 2, 3, 4, 5]
list2 = [3, 4, 5, 6, 7]
OUTPUT: Common elements: [3, 4, 5]
'''
```

Out[23]:
```
'Q12. Write a Python program that takes two lists as input and returns a new list\ncontaining the common elemen
ts between the two lists.\nINPUT:\nlist1 = [1, 2, 3, 4, 5]\nlist2 = [3, 4, 5, 6, 7]\nOUTPUT: Common elements: [
3, 4, 5]\n'
```

In [24]:
```
x = input('Enter a list1 containing numeric values: ')
y = input('Enter a list2 containing numeric values: ')
a = set(x.replace(',',''))
b = set(y.replace(',',''))
c = a.intersection(b)
d = list(c)
print(d)
```

```
Enter a list1 containing numeric values: 1,2,3,4,5
Enter a list2 containing numeric values: 3,4,5,6,7
['3', '4', '5']
```

Python Functions

In [25]:
```
'''Q13. Write a Python function to calculate the factorial of a number (a non-negative
integer). The function accepts the number as an argument.
```

```
INPUT: Input a number to compute the factorial: 4
OUTPUT: 24'''
```

Out[25]:
```
'Q13. Write a Python function to calculate the factorial of a number (a non-negative\ninteger). The function ac
cepts the number as an argument.\nINPUT: Input a number to compute the factorial: 4\nOUTPUT: 24'
```

In [26]:
```
# Ans13
def factorial(y):
    b = 1
    while y>0:
        b = b*y
        y = y-1
        if y == 0:
            break
    return b

x = input('Input a number to compute the factorial: ')
y = int(x)
a = factorial(y)
print(a)
```

```
Input a number to compute the factorial: 4
24
```

In [27]:
```
'''Q14. Write a Python function that accepts a string and counts the number of upper?and lower-case letters.
INPUT: The quick Brow Fox'
OUTPUT:
No. of Upper case characters : 3
No. of Lower case Characters : 13'''
```

Out[27]:
```
"Q14. Write a Python function that accepts a string and counts the number of upper\x02and lower-case letters.\n
INPUT: The quick Brow Fox'\nOUTPUT:\nNo. of Upper case characters : 3\nNo. of Lower case Characters : 13"
```

In [28]:
```
# Ans14
def f():
    a = input('Write a sentence: ')
    x = a.replace(' ','')
    y = []
    z = []
    for i in x:
        if i == i.upper():
            y.append(i)
        else:
            z.append(i)
    print('No. of Upper case characters : ',len(y))
    print('No. of Lower case Characters : ',len(z))
f()
```

```
Write a sentence: My Name Is Hitesh
No. of Upper case characters :  4
No. of Lower case Characters :  10
```

In [29]:
```
'''Q15. Write a Python function to check whether a number falls within a given
range(3,9)
INPUT:5
OUTPUT: 5 is in the range'''
```

Out[29]:
```
'Q15. Write a Python function to check whether a number falls within a given\nrange(3,9)\nINPUT:5\nOUTPUT: 5 is
in the range'
```

In [30]:
```
# Ans15
def Fall():
    n = input('Write a number: ')
    x = int(n)
    if x in range(3,9):
        print( x,'is in the range')
    else :
        print("The number is outside the given range.")

Fall()
```

```
Write a number: 5
5 is in the range
```

In [31]:
```
'''Q16. Write a Python function that takes an integer as input and checks if it is a
prime number.
INPUT: Enter an integer: 13
OUTPUT: It is a prime number.
'''
```

Out[31]:
```
'Q16. Write a Python function that takes an integer as input and checks if it is a\nprime number.\nINPUT: Enter
an integer: 13\nOUTPUT: It is a prime number.\n'
```

In [32]:
```
# Ans16
def Check(n):
```

```
    if n == 1:
        return False
    elif n == 2:
        return True
    else:
        for i in range(2,n):
            if n%i == 0:
                return False
            else:
                return True


x = input('Enter an positive integer: ')
y = int(x)
z = Check(y)
if z == True:
    print('It is a prime number.')
elif z == False:
    print('It is not a prime number.')
```

```
Enter an positive integer: 17
It is a prime number.
```

In [33]:
```
'''Q17. Write a Python function that takes a list of numbers as input and returns the average of the numbers.
INPUT: [1,2,3,4,5,6,7,8,9,10]
OUTPUT: 5.5'''
```

Out[33]:
```
'Q17. Write a Python function that takes a list of numbers as input and returns the average of the numbers.\nIN
PUT: [1,2,3,4,5,6,7,8,9,10]\nOUTPUT: 5.5'
```

In [34]:
```
# Ans17
def Average(n,y):
    a = 0
    for i in n:
        a = i+a
    return a/y

n = [1,2,3,4,5,6,7,8,9,10]
y = len(n)
x = Average(n,y)
print(x)
```

```
5.5
```

In [35]:
```
'''Q18. Write a Python function that takes a list as input and returns a new list
containing only the unique elements from the input list.
INPUT: [1,2,3,4,1,2,0,0,1]
OUTPUT: [0, 1, 2, 3, 4]'''
```

Out[35]:
```
'Q18. Write a Python function that takes a list as input and returns a new list\ncontaining only the unique ele
ments from the input list.\nINPUT: [1,2,3,4,1,2,0,0,1]\nOUTPUT: [0, 1, 2, 3, 4]'
```

In [36]:
```
# Ans18
def Unique(n):
    b = []
    for i in n:
        if i not in b:
            b.append(i)
    if ',' in b:
        b.remove(',')
    print(b)

k = input('Give a list of integers: ')
Unique(k)
```

```
Give a list of integers: 1,2,3,4,5,1,2,6,7,4,5,2
['1', '2', '3', '4', '5', '6', '7']
```

In [37]:
```
'''Q19. Write a Python function that takes two strings as input and checks if they are
anagrams (contain the same characters in any order).
INPUT:
Enter the first string: race
Enter the second string: care
OUTPUT: They are anagrams.'''
```

Out[37]:
```
'Q19. Write a Python function that takes two strings as input and checks if they are\nanagrams (contain the sam
e characters in any order).\nINPUT:\nEnter the first string: race\nEnter the second string: care\nOUTPUT: They
are anagrams.'
```

In [38]:
```
# Ans19
def String(x,y):
    a = 0
    b = 0
    for i in x:
        if i in y:
```

```
            a = a +1
    for j in y:
        if j in x:
            b = b +1
    if a == b and a == len(x) and b == len(y):
        print('They are anagrams')

    else:
        print('They are not anagrams')


x = input('Enter the first string: ')
y = input('Enter the second string: ')
String(x,y)
```

```
Enter the first string: race
Enter the second string: care
They are anagrams
```

In [39]:
```
'''Q20.Write a Python function that takes a list and an element as input and returns
the number of occurrences of that element in the list.
INPUT:
input_list = [ 1,2,3,4,2,2,3,4,5,9,2,6]
Enter the element to count: 2
OUTPUT: Occurrences: 4
'''
```

Out[39]:
```
'Q20.Write a Python function that takes a list and an element as input and returns\nthe number of occurrences o
f that element in the list.\nINPUT:\ninput_list = [ 1,2,3,4,2,2,3,4,5,9,2,6]\nEnter the element to count: 2\nOU
TPUT: Occurrences: 4\n'
```

In [40]:
```
# Ans20
def Num_Occ(x,z):
    b = x.count(z)
    return b

x = [1,2,3,4,2,2,3,4,5,9,2,6]
y = input('Enter the element to count: ')
z = int(y)
a = Num_Occ(x,z)
print(a)
```

```
Enter the element to count: 2
4
```

In [41]:
```
'''Q21.Write a Python function that takes a list of tuples as input and returns the list
sorted based on the second element of each tuple.
INPUT:[(1, 3), (2, 1), (3, 2), (4, 5), (5, 4)]
OUTPUT: Sorted list of tuples: [(2, 1), (3, 2), (1, 3), (5, 4), (4, 5)]'''
```

Out[41]:
```
'Q21.Write a Python function that takes a list of tuples as input and returns the list\nsorted based on the sec
ond element of each tuple.\nINPUT:[(1, 3), (2, 1), (3, 2), (4, 5), (5, 4)]\nOUTPUT: Sorted list of tuples: [(2,
1), (3, 2), (1, 3), (5, 4), (4, 5)]'
```

In [42]:
```
# Ans21
def Sort_list(x):
    a = []
    for i in x:
        s1 = (i[-1],i[0])
        a.append(s1)
    a.sort()
    b = []
    for j in a:
        s2 = (j[-1],j[0])
        b.append(s2)
    return b

x = [(1, 3), (2, 1), (3, 2), (4, 5), (5, 4)]
y = Sort_list(x)
print('Sorted list:',y)
```

```
Sorted list: [(2, 1), (3, 2), (1, 3), (5, 4), (4, 5)]
```

In [43]:
```
'''Q22.Write a Python function that takes a list of integers as input and returns the
second largest element in the list.
INPUT: [3, 5, 2, 8, 9, 5, 1]
OUTPUT: Second largest element: 8'''
```

Out[43]:
```
'Q22.Write a Python function that takes a list of integers as input and returns the\nsecond largest element in
the list.\nINPUT: [3, 5, 2, 8, 9, 5, 1]\nOUTPUT: Second largest element: 8'
```

In [44]:
```
# Ans22
def Sec(x):
    a = max(x)
    x.remove(a)
```

```
    b = max(x)
    return b
x = [3, 5, 2, 8, 9, 5, 1]
y = Sec(x)
print('Second max no. is:',y)
```

```
Second max no. is: 8
```

In [45]:
```
'''Q23.Write a Python lambda function that takes a list of numbers and an exponent n
as input and returns a new list with each element raised to the power of n.
INPUT:
input_numbers = [1, 2, 3, 4, 5]
exponent = 3
OUTPUT: [1, 16, 81, 256, 625]'''
```

Out[45]:
```
'Q23.Write a Python lambda function that takes a list of numbers and an exponent n\nas input and returns a new
list with each element raised to the power of n.\nINPUT:\ninput_numbers = [1, 2, 3, 4, 5]\nexponent = 3\nOUTPUT
: [1, 16, 81, 256, 625]'
```

In [49]:
```
# Ans23
a = input('Input a list: ')
x = a.replace(',','')
y = []
for i in x:
    S1 = int(i)
    y.append(S1)
z = int(input('Input a no: '))
a = lambda i : i**z
b = list(map(a,y))
print(b)
```

```
Input a list: 1,2,3,4,5,6,7
Input a no: 2
[1, 4, 9, 16, 25, 36, 49]
```

In [50]:
```
'''Q24. Write a Python function that takes a list of integers as input and returns a new
list containing only the odd numbers.
INPUT: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
OUTPUT: [1,3,5,7,9]
'''
```

Out[50]:
```
'Q24. Write a Python function that takes a list of integers as input and returns a new\nlist containing only th
e odd numbers.\nINPUT: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]\nOUTPUT: [1,3,5,7,9]\n'
```

In [51]:
```
# Ans 24
x = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
a = lambda i : i%2 != 0
b = list(filter(a,x))
print(b)
```

```
[1, 3, 5, 7, 9]
```

Python Object-Oriented Programming

In [52]:
```
'''Q25. Write a Python program to create a class representing a Circle. Include
methods to calculate its area and perimeter.
INPUT:
Radius of the circle: 4
OUTPUT:
Area of the circle: 50.26548245743669
Perimeter of the circle: 25.132741228718345'''
```

Out[52]:
```
'Q25. Write a Python program to create a class representing a Circle. Include\nmethods to calculate its area an
d perimeter.\nINPUT:\nRadius of the circle: 4\nOUTPUT:\nArea of the circle: 50.26548245743669\nPerimeter of the
circle: 25.132741228718345'
```

In [53]:
```
# Ans25
class Circle:
    def set_circle_radius(self,R):
        self.R = R
    def circle_area(self):
        print(3.14*self.R**2,'m2 is the area of the circle with radius',self.R)
    def circle_perimeter(self):
        print(2*3.14*self.R,'m is the perimeter of the circle with radius',self.R)
a = Circle()
a.set_circle_radius(4)
a.circle_area()
a.circle_perimeter()
```

```
50.24 m2 is the area of the circle with radius 4
25.12 m is the perimeter of the circle with radius 4
```

In [54]:
```
'''Q26. Write a Python program to create a person class. Include attributes like name,
```

```
country and date of birth. Implement a method to determine the person's age.
SAMPLE OUTPUT:
Person 1:
Name: Ferdi Odilia
Country: France
Date of Birth: 1962-07-12
Age: 60
Person 2:
Name: Shweta Maddox
Country: Canada
Date of Birth: 1982-10-20
Age: 40
Person 3:
Name: Elizaveta Tilman
Country: USA
Date of Birth: 2000-01-01
Age: 23
'''
```

Out[54]:
```
"Q26. Write a Python program to create a person class. Include attributes like name,\ncountry and date of birth
. Implement a method to determine the person's age.\nSAMPLE OUTPUT:\nPerson 1:\nName: Ferdi Odilia\nCountry: Fr
ance\nDate of Birth: 1962-07-12\nAge: 60\nPerson 2:\nName: Shweta Maddox\nCountry: Canada\nDate of Birth: 1982-
10-20\nAge: 40\nPerson 3:\nName: Elizaveta Tilman\nCountry: USA\nDate of Birth: 2000-01-01\nAge: 23\n"
```

In [55]:
```python
# Ans26
class person:
    def __init__ (self,name,country,dob):
        self.name = name
        self.country = country
        self.dob = dob
    def person_det(self):
        print('Name:',self.name)
        print('Country:',self.country)
        print('D_O_B:',self.dob)
        import datetime
        a = datetime.date.today()
        b = a.year
        c = a.month
        d = a.day
        age1 = b - int(x.dob[0:4])
        if int(x.dob[5:7])>c:
            print('Age:',age1-1)
        elif int(x.dob[5:7])==c:
            if int(x.dob[8:])>d:
                print('Age:',age1-1)
            else:
                print('Age:',age1)
        else:
            print('Age:',age1)
x = person('Hitesh','India','1997-08-31')
y = x.person_det()
```

```
Name: Hitesh
Country: India
D_O_B: 1997-08-31
Age: 25
```

In [56]:
```
'''Q27. Write a Python program to create a calculator class. Include methods for
basic arithmetic operations.
SAMPLE INPUT:7,5
SAMPLE OUTPUT:
7 + 5 = 12
7 - 5 = 2
7 * 5 = 35
7/5 = 1.0'''
```

Out[56]:
```
'Q27. Write a Python program to create a calculator class. Include methods for\nbasic arithmetic operations.\nS
AMPLE INPUT:7,5\nSAMPLE OUTPUT:\n7 + 5 = 12\n7 - 5 = 2\n7 * 5 = 35\n7/5 = 1.0'
```

In [57]:
```python
# Ans27
class Calculator:
    def __init__(self,num1,num2):
        self.num1 = num1
        self.num2 = num2

    def Sum(self):
        return self.num1 + self.num2

    def Multiplication(self):
        return self.num1 * self.num2

    def Subtraction(self):
        return self.num1 - self.num2
```

```
    def Division(self):
        return self.num1 / self.num2
```

In [58]:
```
Num = Calculator(10,5)
```

In [59]:
```
Num.Sum()
```

Out[59]: 15

In [60]:
```
Num.Multiplication()
```

Out[60]: 50

In [61]:
```
Num.Subtraction()
```

Out[61]: 5

In [62]:
```
Num.Division()
```

Out[62]: 2.0

In [63]:
```
'''Q28. Write a Python program to create a class that represents a shape. Include
methods to calculate its area and perimeter. Implement subclasses for different
shapes like circle, triangle, and square.
SAMPLE INPUT:
Circle(5)
Triangle(3, 4, 5)
Square(6)'''
```

Out[63]: 'Q28. Write a Python program to create a class that represents a shape. Include\nmethods to calculate its area and perimeter. Implement subclasses for different\nshapes like circle, triangle, and square.\nSAMPLE INPUT:\nCircle(5)\nTriangle(3, 4, 5)\nSquare(6)'

In [64]:
```
# Ans28
import math
class Shape:
    def Set_Circle_Radius(self,R):
        self.R = R

    def Set_Triangle_Sides(self,S1,S2,S3):
        self.S1 = S1
        self.S2 = S2
        self.S3 = S3

    def Set_Square_Side(self,S4):
        self.S4 = S4

    def Circle_Area(self):
        print('Area of circle if radius =',self.R,'is',3.14*self.R**2.,'meter square')

    def Circle_Perimeter(self):
        print('Perimeter of circle if radius =',self.R,'is',2*3.14*self.R,'meter')

    def Triangle_Area(self):
        print('Area of Triangle if S1=',self.S1,',','S2=',self.S2,'and S3=',self.S3,'is'
              ,math.sqrt((self.S1+self.S2+self.S3)/2*((self.S1+self.S2+self.S3)/2-self.S1)
                         *((self.S1+self.S2+self.S3)/2-self.S2)*((self.S1+self.S2+self.S3)/2-self.S3)),'meter s

    def Triangle_Perimeter(self):
        print('Paramter of Triangle if S1 =',self.S1,',','S2=','and S3=','is',self.S1 + self.S2 + self.S3,'mete

    def Square_Area(self):
        print('Area of Square if Side=',self.S4,'is',self.S4**2,'meter square')

    def Square_Perimeter(self):
        print('Parameter of Square if Side=',self.S4,'is',self.S4*4,'meter')
```

In [65]:
```
S = Shape()
```

In [66]:
```
S.Set_Circle_Radius(5)
```

In [67]:
```
S.Circle_Perimeter()
```

```
Perimeter of circle if radius = 5 is 31.400000000000002 meter
```

In [68]:
```
S.Circle_Area()
```

```
Area of circle if radius = 5 is 78.5 meter square
```

In [69]:
```
S.Set_Triangle_Sides(3,4,5)
```

In [70]:
```
S.Triangle_Area()
```

```
Area of Triangle if S1= 3 , S2= 4 and S3= 5 is 6.0 meter square
```

In [71]:
```
S.Triangle_Perimeter()
```

```
Paramter of Triangle if S1 = 3 , S2= and S3= is 12 meter
```

In [72]:
```
S.Set_Square_Side(6)
```

In [73]:
```
S.Square_Area()
```

```
Area of Square if Side= 6 is 36 meter square
```

In [74]:
```
S.Square_Perimeter()
```

```
Parameter of Square if Side= 6 is 24 meter
```

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: