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class:II Bsc Chemistry
title:Assessment II


#Question No. 01
#a)python function to perform trignometric operation:
import math
a=math.pi/2
print("The value of sine of pi/3 is:")
print(math.sin(a))
print("The value of cosine of pi/3 is:")
print(math.cos(a))
```

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     The value of sine of pi/3 is:
     1.0
     The value of cosine of pi/3 is:
     6.123233995736766e-17
```

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#b)lamda function:
x=lambda a,b:a+b
print(x(5,8))
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     13
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#c
def fdsum(n):
  sum=0
  x=1
  while x <=n:
    sum=sum+x
    x =x+1
    return sum
n=int(input("Enter a natural number, n:"))
print("sum of first n i.e.,",n,"naturalnumber",fdsum(n))
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     Enter a natural number, n:4
     sum of first n i.e., 4 naturalnumber 1
```

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#Question no.02 a)
from statistics import mean
def mymean(my_list):
    return mean(my_list)
my_list=[3,5,7,9,4,6,6,3,2,8,3,3]
average=mymean(my_list)
print("Original list:",my_list)
print("Mean of the list:",average)
```

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      Original list: [3, 5, 7, 9, 4, 6, 6, 3, 2, 8, 3, 3]
      Mean of the list: 4.916666666666667


#b)
def myname(firstname,lastname):
    return firstname + lastname
firstname=input("Enter ur first name:")
lastname=input("Enter ur last name:")
print("My name is",myname(firstname,lastname))

     Enter ur first name:sherlin
     Enter ur last name:carol
     My name is sherlincarol


#Question no.03
#function to stimulate a traffic light
#It is required to make 2 user defined fuctions trafficlight() and
#light().
def trafficlight():
  signal=input("Enter the colour of the traffic light:")
  if (signal not in("RED","YELLOW","GREEN")):
    PRINT("PLEASE ENTER A VALID TRAFFIC LIGHT COLOUR IN CAPITALS")
  else:
    value=light(signal) #function call to light()
  if (value==0) :
    print("STOP,Your life is precious.")
  elif (value==1):
    print("Please GO Slow.")
  else:
    preint("Go!,Thank you for being patient.")
#function ends here

def light(colour):
  if (colour== "RED"):
       return(0);
  elif (colour == "YELLOW"):
       return(1)
  else:
       return (2)
#function ends here
trafficlight()
print("SPEED THRILLS BUT KILLS")


     Enter the colour of the traffic light:RED
     STOP,Your life is precious.
     SPEED THRILLS BUT KILLS


#Question no.04
with open("myfile.txt","w")as myfile:
  myfile.write("This is my test file.\n")
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  myfile.write("This is my test file.\n")
  myfile.write("I am sherlin Carol.\n")
  myfile.write("I am from the Tiruchirappalli.\n")

with open("myfile.txt")as f:
  content=f.read()
print(content)

with open("myfile.txt")as myfile:
  for line in myfile:
      print(line,end="")

      count=0
      with open("myfile.txt","r")as myfile:
        for line in myfile:
          count+=1
          print(line,end="")
print('This file contains',count,'lines')
```

```
     This is my test file.
     I am sherlin Carol.
     I am from the Tiruchirappalli.

     This is my test file.
     This is my test file.
     I am sherlin Carol.
     I am from the Tiruchirappalli.
     I am sherlin Carol.
     This is my test file.
     I am sherlin Carol.
     I am from the Tiruchirappalli.
     I am from the Tiruchirappalli.
     This is my test file.
     I am sherlin Carol.
     I am from the Tiruchirappalli.
     This file contains 3 lines
```

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#5Question no. 05 a)
import re
def text_match(text):
        patterns = 'ab{2,3}'
        if re.search(patterns,  text):
                return 'Found a match!'
        else:
                return('Not matched!')
print(text_match("ab"))
print(text_match("aabbbbbc"))
```

```
     Not matched!
     Found a match!
```

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#5b)
import re
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def text_match(text):
        patterns = '^[a-z]+_[a-z]+$'
        if re.search(patterns,  text):
                return 'Found a match!'
        else:
                return('Not matched!')

print(text_match("aab_cbbbc"))
print(text_match("aab_Abbbc"))
print(text_match("Aaab_abbbc"))
```

```
Found a match!
Not matched!
Not matched!
```

```
#5c)
import re
patterns = [ 'fox', 'dog', 'horse' ]
text = 'The quick brown fox jumps over the lazy dog.'
for pattern in patterns:
    print('Searching for "%s" in "%s" ->' % (pattern, text),)
    if re.search(pattern,  text):
        print('Matched!')
    else:
        print('Not Matched!')
```

```
Searching for "fox" in "The quick brown fox jumps over the lazy dog." ->
Matched!
Searching for "dog" in "The quick brown fox jumps over the lazy dog." ->
Matched!
Searching for "horse" in "The quick brown fox jumps over the lazy dog." ->
Not Matched!
```