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Computer Science

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0.1 Date : 29/09/2022

1. Write a lambda expression to get the product of two numbers Run test for expression(5,6) Output: 30

[136]:
```
getProduct = lambda val1,val2 :val1 * val2
getProduct(5,6)
```

[136]: 30

2. Write a function to get the area of a circle from the radius. Hint: remember to import the right modul for being able to calculte the area of the circle. Run test for function(10) Output: 314.1592653589793

[140]:
```
from math import pi
##radious = 10
def calArea (radious) :
    area = pi* radious * radious
    print (area)
```

[141]:
```
calArea(10)
```

```
314.1592653589793
```

3. Build a simple calculator which can: add, subtract, multiply, divide. Hint: solve by writing a function that takes as argument two numbers and the operation and returns the desired output. Run test for function(2,5,'d') Output: 0.4

[66]:
```
def myCalulator (val1,val2,userOperator):

    #val1 = float(val1)
   # val2 = float(val2)
   # userinput = None
   # userinput = userOperator
    sysOperator = ['a','s','d']
   # while sysOperator  not in  userinput:
  #  print (val1)
#print (val2)
```

```
#   print (userOperator)
   val1 = float(val1)
   val2 = float(val2)
   #while userOperator in sysOperator :
 #  print (val1)
 #  print (val2)

   if userOperator in sysOperator :
       print ('Operator is 'userOperator)

       if userOperator == 'a':
           total = val1 + val2
           print('Output',total)
       elif userOperator == 's':
           total = val1 - val2
           print('Output',total)
       elif userOperator == 'd':
           total = val1 / val2
           print('Output',total)

   else :
       print (f'"Operator not defiend Please choose \n a for adition" \n d for␣
↪division \n s for substraction')
```

[133]:
```
myCalulator (2,5,'d')
```

```
d
Output 0.4
```

4. Define a class named Rectangle which can be constructed by a length and width. The Rectangle class has a method which can compute the area. Run test for r = Rectangle(5,10) r.area() Output: 50

[95]:
```
class Rectangle:
    def __init__(self,length,width):
        self.length =length
        self.width = width
    def area (self):
        area = self.length * self.width
        print(area)
```

[96]:
```
r= Rectangle(5,10)
```

[97]:
```
r.area()
```

50

5. Define a class named Shape and its subclass Square. Shape objects can be consrtucted by name and length has an area function wich return 0 Square subclass has an init function which take a length and name as argument and has an area method and a describe method what prints the name of the Shape. Print the area from Square class. Run test for: s = Square('square',5) print(s.area()) print(s.describe()) Output: The area is: 25 This is a: square

[103]:
```
class Shape:
    def __init__(self,name,lenght):
        self.name =name
        self.width = lenght
    def area (self):
        return 0
```

[129]:
```
class Square(Shape):
    def __init__(self,name,lenght):
        self.__name =name
        self.__lenght = lenght
    def area (self):
        area = self.__lenght * self.__lenght
       # print(area)
        return area
    def describe (self):
        return self.__name
```

[130]:
```
s=Square('Square',5)
```

[142]:
```
print ("The area is :",s.area())
```

```
The area is : 25
```

[145]:
```
print ("This is a :",s.describe())
```

```
This is a : Square
```