

EX – 01 : BASIC TWO CLASSES IN PYTHON

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Question:

Implement any two classes.

Code:

```
# -*- coding: utf-8 -*-  
''''
```

This module provides code for two classes. This is a part of the exercises given under the course UIT2312 (Programming and Design Patterns).

In this source code I've executed my own logic and may contain bugs.

The source code has followed good coding practices.

Your comments and suggestions are welcome.

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```
''''
```

```
class Complex:
```

```
    '''Complex Number class which has two data members namely  
    re and im
```

```
    and two member functions norm() and display()'''
```

```
    def __init__(self, re, im):
```

```
        ...
```

```
        Constructor to initialise data members
```

```
        ...
```

```
        self.re = re
```

```
        self.im = im
```

```
    def norm(self):
```

```
        ...
```

```
        Returns the norm value of a complex number
```

```
        ...
```

```
        return ((self.re * self. re) + (self.im * self.im)) ** 0.5
```

```
    def display(self):
```

```
        ...
```

```
        Displays the complex number along with its norm value
```

```
        ...
```

```
        string = "|" + str(self.re) + " + " + str(self.im) + "j" + "  
        str(self.norm())
```

```
        return string
```

```
class Rectangle:
```

```
    def __init__(self, length,breadth):
```

```
        .....
```

Constructor to initialise data members

"""

self.length = length

self.breadth = breadth

def area(self):

"""

Member function to calculate the area of rectangle

"""

return self.length * self.breadth

def perimeter(self):

"""

Member function to calculate the perimeter of rectangle

"""

return 2 * (self.length + self.breadth)

def display(self):

"""

Member function to display the rectangle class

"""

result = f"The sides of rectangle are ({self.length},
{self.breadth}) and Area is {self.area()}. The perimeter of the
rectangle is {self.perimeter()}"

return result

#Test cases for the above code

if __name__ == "__main__":

#This part of the program will not be executed when the file is imported.

```
c = Complex(3,4)  
print(c.display())
```

```
R = Rectangle(5,4)  
print(R.display())
```

Output:

```
|3 + 4j| = 5.0  
The sides of rectangle are (5, 4) and Area is 20. The perimeter of the rectangle is 18
```