

Assignments for 19-Dec-17 (Object Oriented Programming)

1. Write a class Arithmetic to have 4 methods, add(), sub(), mul(), div() to perform arithmetic operations. Also, include constructor and destructor functions for the Arithmetic Class. Supply the arguments values to functions from main program.
2. Define a class with a generator which can iterate the numbers, which are divisible by num, between a given range 1 and limit. The variables num and limit are provided as user input. Include main program to test the generator class.
3. Write a program in Python to implement the following:
 - A vector class and demonstrate addition, subtraction and multiplication operations on it.
 - Include a constructor and destructor method
 - Include a representation object or string printing object method
 - Also include main program to access the defined vector class methods
4. Define a class named Shape and its sub Classes Square and Rectangle. The Square class has an init function which takes a length as argument. The Rectangle class has an init function which takes length and breadth as arguments. Both classes (Shape, Square and Rectangle) have an area function which can print the area of the shape where Shape's area is 0 by default.
5. Create a class called Numbers, which has a single class attribute called MULTIPLIER, and a constructor which takes the parameters v1 and v2 (these should all be numbers).
 - Write a method called add which returns the sum of the attributes v1 and v2.
 - Write a class method called multiply, which takes a single number parameter val and returns the product of val and MULTIPLIER.
 - Write a static method called subtract, which takes two number parameters, val1 and val2, and returns val1 - val2.
 - Write a method called value which returns a tuple containing the values of v1 and v2. Make this method into a property, and write a setter and a deleter for manipulating the values of v1 and v2.