

Gebze Institute of Technology
Department of Computer Engineering
CSE 241/501
Object Oriented Programming
Fall 2014
Homework # 3
Due date Oct 20th 2014

In this homework, you will write your first C++ class.

Your class name will be **Vect3D**. This class can represent a three dimensional vector with X, Y, and Z components such as $a = (1.2, 3.1, 4.0)$

Your class will have the following features

- A no parameter constructor (X, Y, and Z are all zero)
- A one parameter constructor that will set X component and set the other components to zero
- A two parameter constructor that will set X and Y components and set the Z component to zero
- A three parameter constructor
- Setter and getters for the required data members.
- Input and Output functions for the vector elements.
- A function that takes another Vect3D object as parameter and returns the result of dot product (a double) between this object and the parameter
- A function that takes another Vect3D object as parameter and returns the result of vector product (a Vect3D) between this object and the parameter
- A function that returns the magnitude of the Vect3D

You will apply all object oriented rules we learned during the lectures (member initializer syntax, const keywords, etc.)

Test each function of your new class at least two times with different parameters. You should also write two functions that will take Vect3D objects using call by value and call by reference.

Notes:

- Do not use any functions from the standard C library (like `printf`)
- Do not forget to indent your code and provide comments.