

CSE231 Advanced Computer Programming

Lab 02

- 1) Define a class that represents a 2D Vector. Your class should encapsulate both X-Component and Y-Component. The class should have an empty constructor initializing them to zeros and a nonempty constructor that initializes them according to arguments.

The Class should have the following Methods:

- double getX() and double getY() : X and Y components accessors.
- void setX(double x) and void setY(double y) : X and Y components mutators.
- double magnitude() : computes and returns the magnitude of the current vector.
- double angle() : computes and returns the angle of the current vector.
- void print() : prints the vector in 2 formats ($x i + y j$) and (Magnitude [angle]).
- Vector add(Vector v): Returns the result of adding the current Vector and the passed Vector v.
- Vector sub(Vector v): Returns the result of subtracting the passed Vector v from the current Vector.

Write a driver program that tests all the class functionalities

- 2) Based on the Vector class you defined in problem 1, write a method (outside the class) that takes an array of vectors and returns their average magnitude. Write a main method that tests this method.

