

C++ programming II

Lab 17

Define a class for 2D vectors (Vector2D) with these member variables used for polar coordinates:

- double rho (a non-negative number): magnitude (length) of vector
- double theta (angle in degrees): $-180 < \theta \leq +180$

Define mutators, accessors, and constructors (unit vector is the default value). Also, define getX and getY for rectangular coordinates.

Overload +, - as members

Overload == and != as non-members (compare both rho and theta)

Overload >, >=, <, <= as non-member friends (compare magnitudes)

Also, overload << and >> as non-member friends.