**Vector2**

A class that contains public floats: x and y.

**Vector3**

A class that contains public floats: x, y, and z.

**Vector4**

A class that contains public floats: x, y, z and w.

All Vector classes should contain two constructors

Vector2 v2;  // default constructor. Initializes all components to zero.

Vector2 v2( 1, 2,… ); //Initializes components using the passed in parameters.

All Vector classes should contain these operator overloads:

V = V + V (point translated by a vector)

V = V – V (point translated by a vector)

V = V x f (vector scale)

V = f x V (vector scale) //This one needs to be declared outside the class.

//This ones are a bit harder, we haven’t covered them yet

~~f = V[n] (sub-script operator) //So you can index the vector as if it were an array.~~

//Assign to the vector as if it were an array.

V[n] = f (sub-script operator returning reference)

//You will need to return the appropriate float as a reference

//Overload the cast operator so you can cast the vector to a float\*

float\* fp = (float\*)V (cast operator)

//No return type, not even void

//returning the address of the first byte of data

All Vector classes should contain these functions:

f = V.dot( V )

V = V.cross( V ) //Don’t implement for Vector2. For Vector4 implement like Vector3 but set W to zero.

f = V.magnitude()

V.normalise()