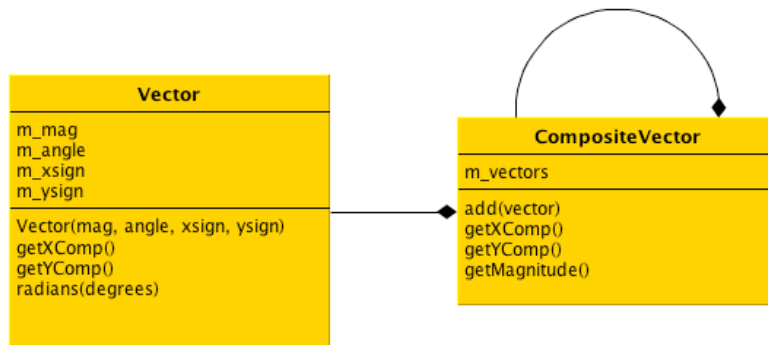


For this exercise I would like you to create a program that can add vectors and determine the resulting x component, y component, and magnitude. The design for this program uses the composite design pattern and is shown below using UML:



In case you forgot how to add vectors, here is a review:

<http://phys101.blogspot.com/2007/01/vector-addition.html>

I would like you to use the following Main.js file to test your program:

```

var V = module.require('./Vector.js');
var CV = module.require('./CompositeVector.js');

function main()
{
    var v1 = new V.Vector(50, 60, +1, +1);
    console.log("X1 ", v1.getXComp());
    console.log("Y1 ", v1.getYComp());

    var v2 = new V.Vector(60, 40, +1, +1);
    console.log("X2 ", v2.getXComp());
    console.log("Y2 ", v2.getYComp());

    var cv1 = new CV.CompositeVector();
    cv1.add(v1);
    cv1.add(v2);

    console.log("CV1X ", cv1.getXComp());
    console.log("CV1Y ", cv1.getYComp());
    console.log("CV1Mag ", cv1.getMagnitude());

    var cv2 = new CV.CompositeVector();
    cv2.add(v1);
    cv2.add(v2);
    cv2.add(cv1);

    console.log("CV2X ", cv2.getXComp());
    console.log("CV2Y ", cv2.getYComp());
    console.log("CV2Mag ", cv2.getMagnitude());
}
main();
  
```

Here is the output generated by the Main.js file above:

```

X1  25.000000000000007
Y1  43.30127018922193
X2  45.96266658713868
Y2  38.56725658119235
CV1X  70.96266658713868
CV1Y  81.86852677041429
CV1Mag  108.34276960053887
CV2X  141.92533317427737
CV2Y  163.73705354082858
CV2Mag  216.68553920107775
  
```