Assignment 7

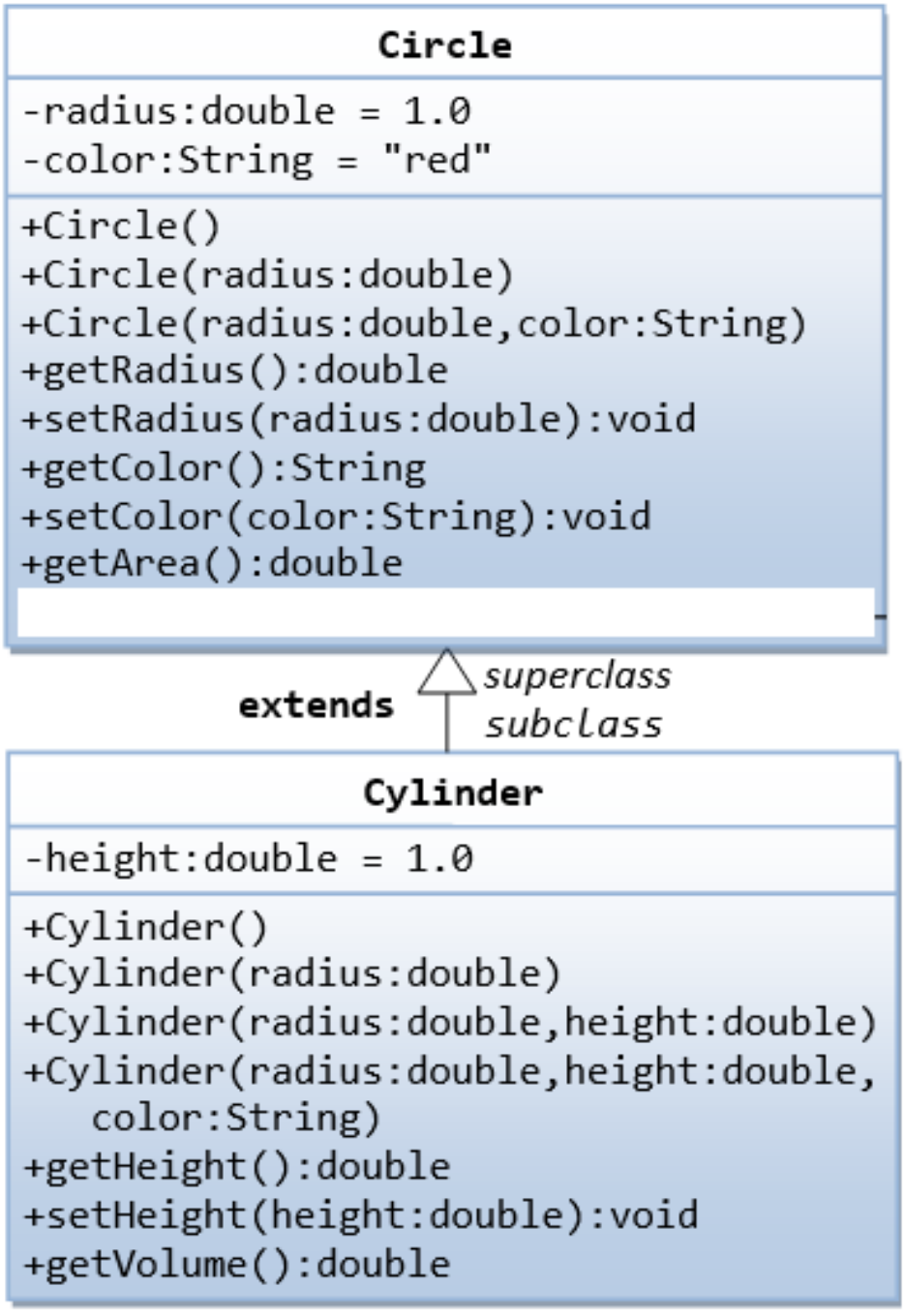
Task 1:

a. Create class Vehicle which contains:
   - Vehicle model string
   - Registration number string
   - Vehicle speed (km/hour) integer
   - Fuel capacity (liters) double
   - Fuel consumption (liter/km) double
   - Parameterized constructor that will initialize all the data
   - members with the given values.
   - fuelNeeded() method that will take distance then calculate the
   - amount of fuel needed
   - A method distanceCovered() that will take time (in hours) as an argument. It will calculate the distance for the given time
   - A display() method that will display all the information of a vehicle.

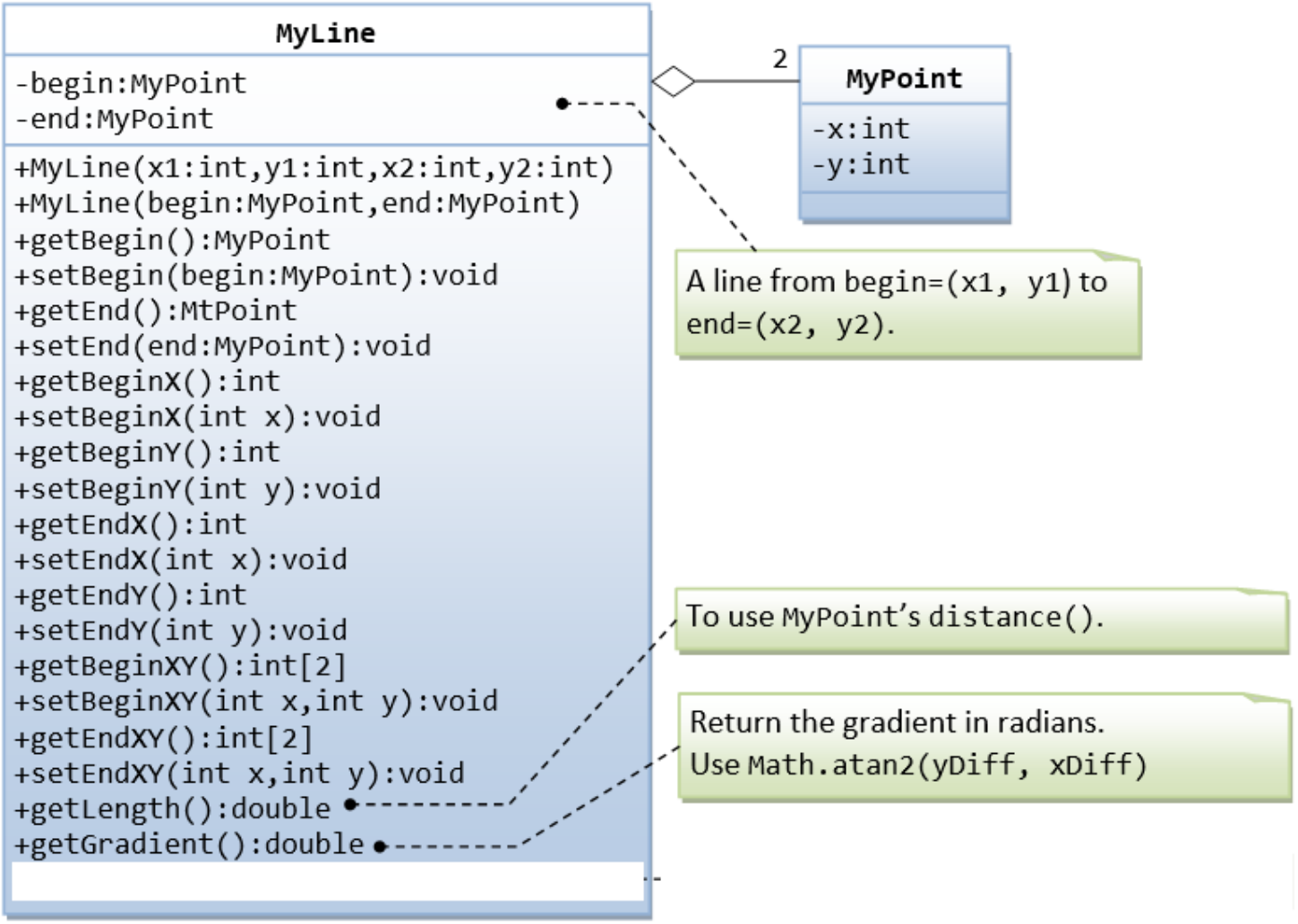
b. Create Class Truck which will inherit from Vehicle:
   - Cargo weight limit (Kilo grams)// data member
   - Parameterized constructor
   - Setter and getter
   - A display() method which will call parent display() then print Cargo weight value.

c. Create Class Bus which will inherit from Vehicle:
   - Data members: Num of passengers int
   - Parameterized constructor
   - Setter and getter
   - A display() method which will call parent display() then print the number of passengers.

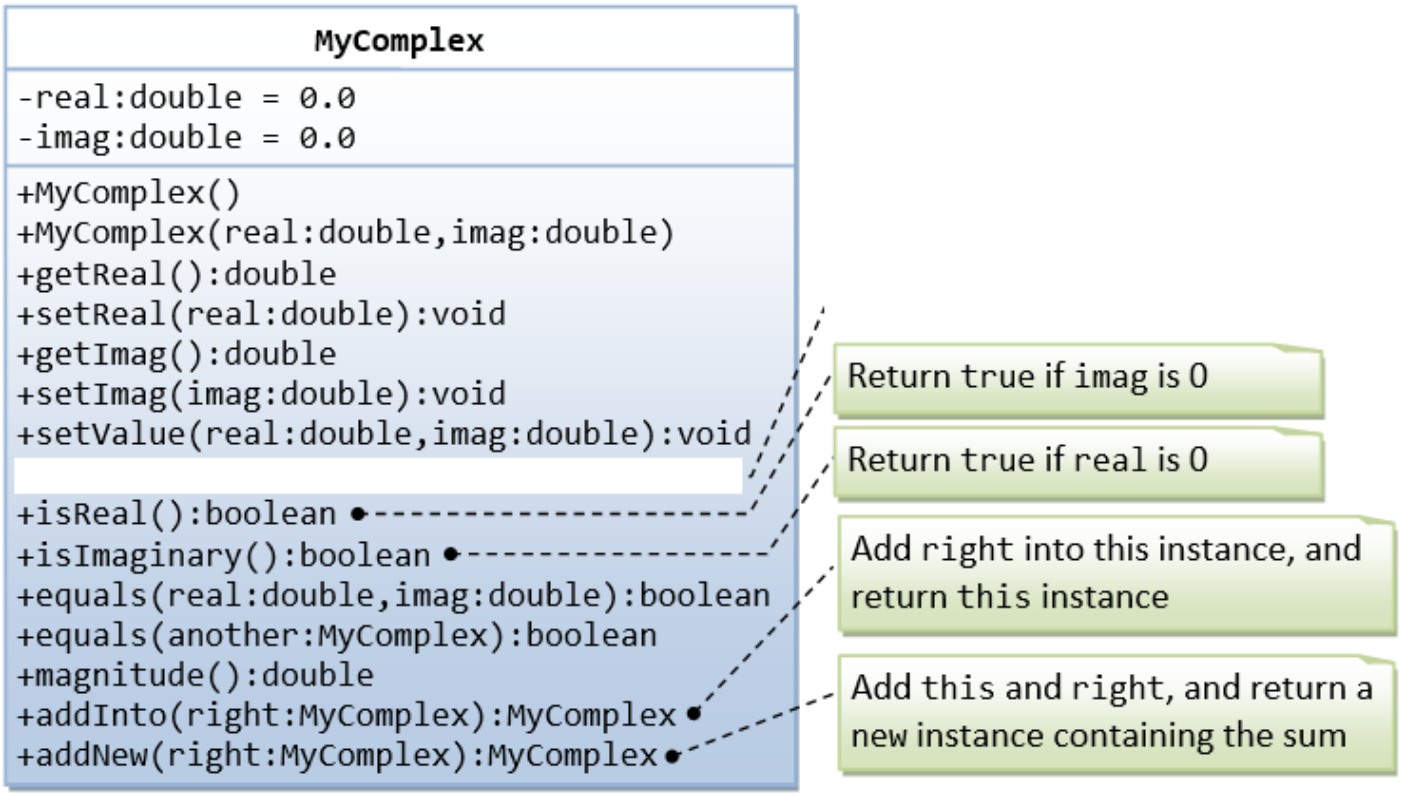
Task 2:


Circle
-radius:double = 1.0
-color:String = "red"
+Circle()
+Circle(radius:double)
+Circle(radius:double,color:String)
+getRadius():double
+setRadius(radius:double):void
+getColor():String
+setColor(color:String):void
+getArea():double
extends
superclass
subclass
Cylinder
-height:double = 1.0
+Cylinder()
+Cylinder(radius:double)
+Cylinder(radius:double,height:double)
+Cylinder(radius:double,height:double,
color:String)
+getHeight():double
+setHeight(height:double):void
+getVolume():double

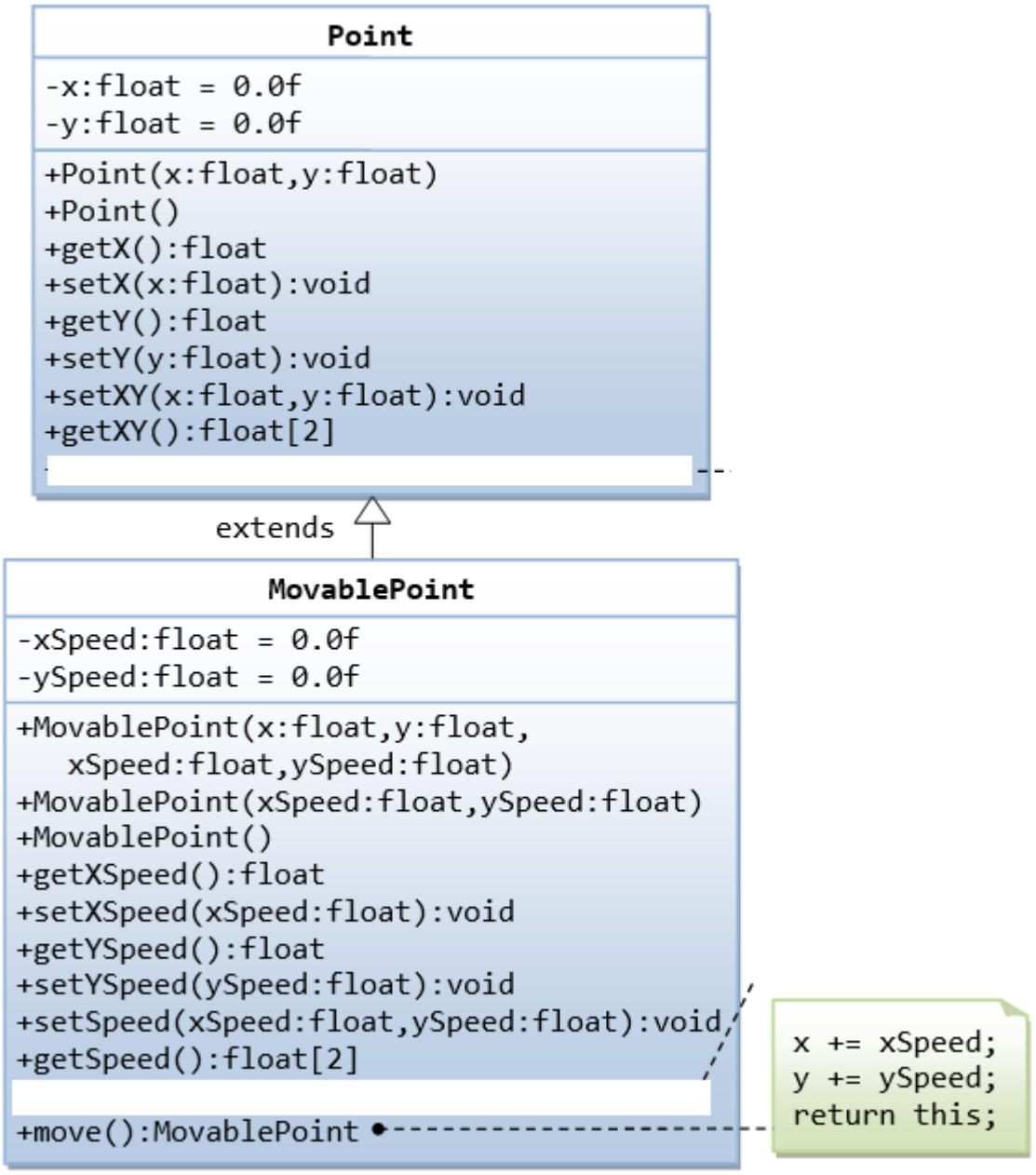
Task 3:


MyLine
-begin:MyPoint
-end:MyPoint
+MyLine(x1:int,y1:int,x2:int,y2:int)
+MyLine(begin:MyPoint,end:MyPoint)
+getBegin():MyPoint
+setBegin(begin:MyPoint):void
+getEnd():MtPoint
+setEnd(end:MyPoint):void
+getBeginX():int
+setBeginX(int x):void
+getBeginY():int
+setBeginY(int y):void
+getEndX():int
+setEndX(int x):void
+getEndY():int
+setEndY(int y):void
+getBeginXY():int[2]
+setBeginXY(int x,int y):void
+getEndXY():int[2]
+setEndXY(int x,int y):void
+getLength():double
+getGradient():double
2
MyPoint
-x:int
-y:int
A line from begin=(x1, y1) to end=(x2, y2).
To use MyPoint's distance().
Return the gradient in radians.
Use Math.atan2(yDiff, xDiff)

Task 4:


MyComplex
-real:double = 0.0
-imag:double = 0.0
+MyComplex()
+MyComplex(real:double,imag:double)
+getReal():double
+setReal(real:double):void
+getImag():double
+setImag(imag:double):void
+setValue(real:double,imag:double):void
+isReal():boolean
+isImaginary():boolean
+equals(real:double,imag:double):boolean
+equals(another:MyComplex):boolean
+magnitude():double
+addInto(right:MyComplex):MyComplex
+addNew(right:MyComplex):MyComplex
Return true if imag is 0
Return true if real is 0
Add right into this instance, and return this instance
Add this and right, and return a new instance containing the sum

Task 5:



Task 6:

What is the Difference between composition vs inheritance with example by code ?