

CS 213 : Software Methodology

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Inheritance and Method Overriding

Inheritance – Fields and Methods

```
package geometry;
```

```
public class Point {  
    int x,y;  
    public Point(int x, int y) {  
        this.x = x; this.y = y;  
    }  
    public int getX() {  
        return x;  
    }  
    public int getY() {  
        return y;  
    }  
    public String toString() {  
        return x + "," + y;  
    }  
}
```

```
package geometry;
```

```
public class ColoredPoint  
    extends Point {  
    int x,y;  
    String color;  
    public ColoredPoint(  
        int x, int y, String color) {  
        super(x,y);  
        this.color = color;  
    }  
    public int getX() { return x; }  
    public int getY() { return y; }  
    public String toString() {  
        return x + "," + y;  
    }  
}
```

Constructor
inherited?

NO

WHY NOT?

Are we ok with
using this as is?

NO. Color should be included.

Inheritance – Overriding Method

```
package geometry;


public class ColoredPoint
    extends Point {
    int x,y;

    String color;
    public ColoredPoint(
        int x, int y, String color) {
        super(x,y);
        this.color = color;
    }

    public int getX() { return x; }
    public int getY() { return y; }

    public String toString() {
        return x + "," + y + "," + color;
    }
}
```

This implementation overrides the inherited code



Inheritance – Reusing inherited method code in overriding Method

```
package geometry;

public class ColoredPoint
    extends Point {
    int x,y;

    String color;
    public ColoredPoint(
        int x, int y, String color) {
        super(x,y);
        this.color = color;
    }

    public int getX() { return x; }
    public int getY() { return y; }

    public String toString() {
        return x + ", " y + ", " + color;
        super.toString()
    }
}
```

← Reusing inherited method code in overriding method Is good programming practice