CENG 211 – Programming Fundamentals

Inheritance Example

Inheritance Example

```
public class Shape {
    int x;
    int y;

    public void moveTo(int x, int y) {
        this.x = x;
        this.y = y;
    }
}
```

```
public class Rectangle extends Shape {
    int width;
    int height;

    public void resize(int w, int h) {
        width = w;
        height = h;
    }

    public String toString() {
        return “Rect: (“ + x + “, “
                + y + “)-(“ + width
                + “x” + height + “)”;
    }
}
```

Inheritance Example

```
public class Shape {
    int x;
    int y;
    public void moveTo(int x, int y)    {
        this.x = x;
        this.y = y;
    }

    public int area() { return 0; }

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

```
public class Rectangle extends Shape {
    int width;
    int height;

    public void resize(int w, int h) {…}

    public int area() {
        return width*height;
    }

    public String toString() {
        return super.toString() + "-("
                + width + "x" + height + ")";
    }
}
```

Inheritance Example

```
public abstract class Shape {
    int x = 0;
    int y = 0;

    public void moveTo(int x, int y)    {
        this.x = x;
        this.y = y;
    }

    public abstract int area();

    public abstract void resize(int w, int h);

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

```
public class Rectangle extends Shape {
    int width;
    int height;

    public void resize(int w, int h) {…}

    public int area() {
        return width*height;
    }

    public String toString() {
        return super.toString() + "-("
                + width + "x" + height + ")";
    }
}
```

@Override Annotation

- You can add the @Override annotation before the method that you want to override.
- The compiler will complain if the super class does not have a method with this signature.
- This will prevent you from defining a new method due to a typo.

```
class S {
    void m() { … }
}

class C extends S {
    @Override
    void m() { … }
}
```