

Creating new Robots

Adding more than one instruction

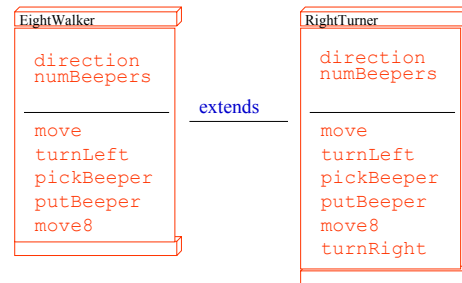
RightTurner + EightWalker

- When we created the new robot classes, we added one new method to each.
- What if we wanted a Robot with both methods (so that the robot could use both the move8 and turnRight methods)?

How would you do it

- A simple way is to make RightTurner extend EightWalker

```
public class RightTurner extends EightWalker
```



Or vice versa

- Alternately you could have the EightWalker class extend the original RightTurner class.
- Or, a third alternative, is put both methods in one class:

```
public class CapableRobot extends Robot
```

```
{
    void turnRight()
    {
        turnLeft();
        turnLeft();
        turnLeft();
    }

    void move4()
    {
        move();
        move();
        move();
        move();
    }
}
```

Capable Robot defines two methods, turnRight and move4

Note the indentation helps make this clear.

```
public class CapableRobot extends Robot
{
    void turnRight()
    {
        turnLeft();
        turnLeft();
        turnLeft();
    }

    void move4()
    {
        move();
        move();
        move();
        move();
    }
}
```

The order of the method definitions is not important. We could reverse them

```
public class CapableRobot extends Robot
{
    void move4()
    {
        move();
        move();
        move();
        move();
    }

    void turnRight()
    {
        turnLeft();
        turnLeft();
        turnLeft();
    }
}
```

Exercise

- Assuming you have defined CapableRobot, what will the following program do?

```
public class TestCapableRobot
{
    public static void main(String [] args)
    {
        World yard = new World();
        CapableRobot john = new CapableRobot();
        yard.add(john);
        john.turnLeft();
        john.move4();
        john.turnRight();
        john.move4();
        john.turnLeft();
        john.move4();
    }
}
```

Exercise 2

- If the move4() method definition of CapableRobot was incorrectly written and only contained 3 move instructions what would the previous program do?