

For Friday

- Finish Becker, chapter 3 (skip 3.5.2)
- Recommended practice problems: chapter 3, problems 1-2

Program 1

- Any questions?

Questions before the quiz?

Quiz

Modifying Inherited Methods

- Some people “show off” when they move. They might be loud or swagger or sway their hips or It seems like they can’t move in any other way. If they move, they show off.
- Create a **ShowOff** robot that turns magenta each time it moves. When it is standing still or turning (that is, not **move**-ing) it should continue to be red.

ShowOff Robot

```
import becker.robots.*;
public class ShowOffMain
{
    public static void main(String[ ] args)
    {
        City ny = new City();
        ShowOff karel = new ShowOff(ny, 2, 3,
            Direction.SOUTH);
        karel.turnLeft(); // red
        karel.move(); // magenta
        karel.move(); // magenta
        karel.turnLeft(); // red
        karel.move(); // magenta
    }
}
```

Algorithms

- An algorithm is a set of instructions for accomplishing some task
- What are some common algorithms from everyday life?
- Important characteristics of algorithms for computers

Algorithms

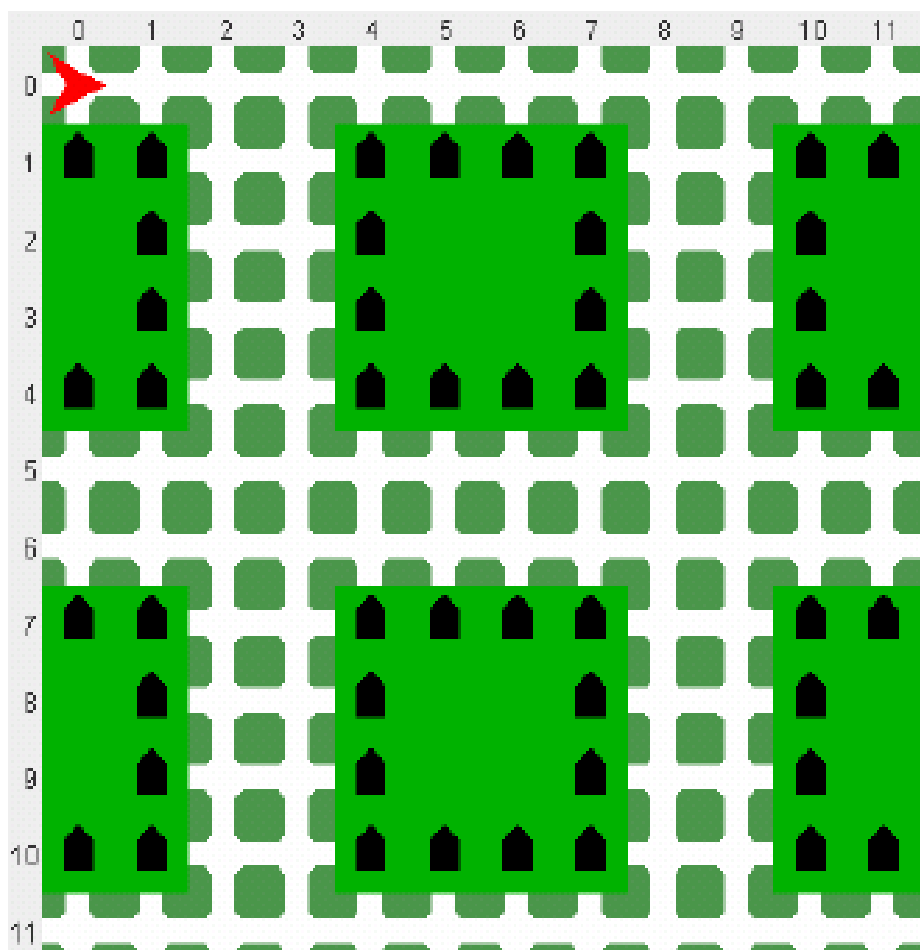
- Good algorithms are
 - Correct
 - Easy to read and understand
 - Easy to debug
 - Easy to modify (why?)
 - Efficient

Stepwise Refinement

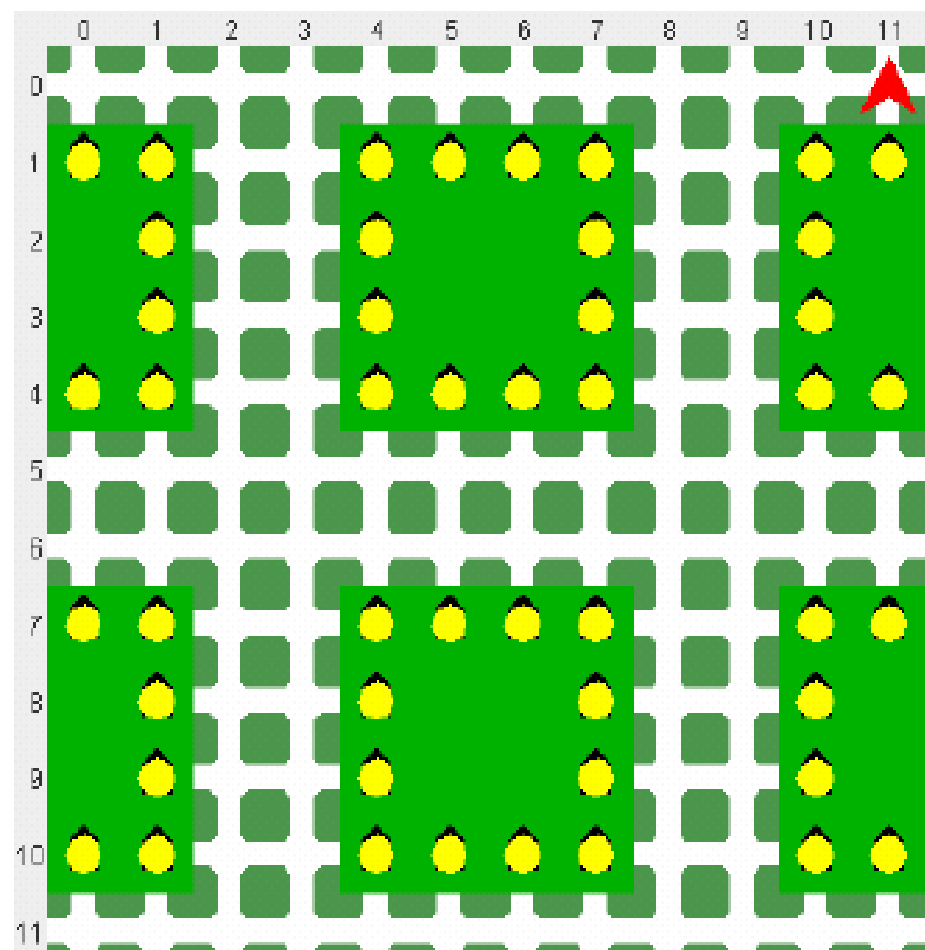
- What's the basic idea here?

Delivering Flyers

- You need a robot to deliver flyers to houses on a delivery route. The route is shown on the next slide. The robot must visit all of the houses on the route and should stay off the green areas as much as possible.



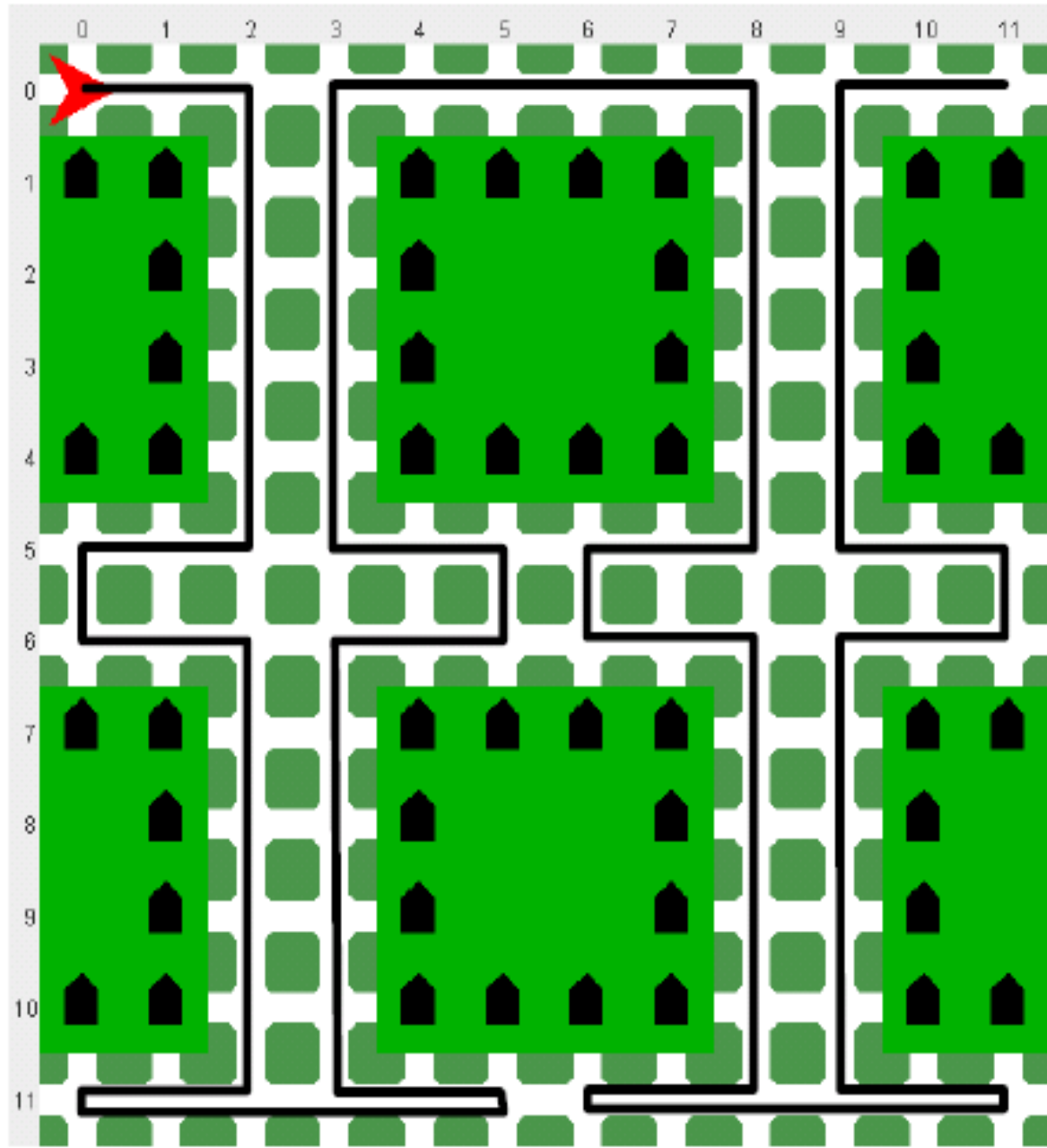
Initial Situation



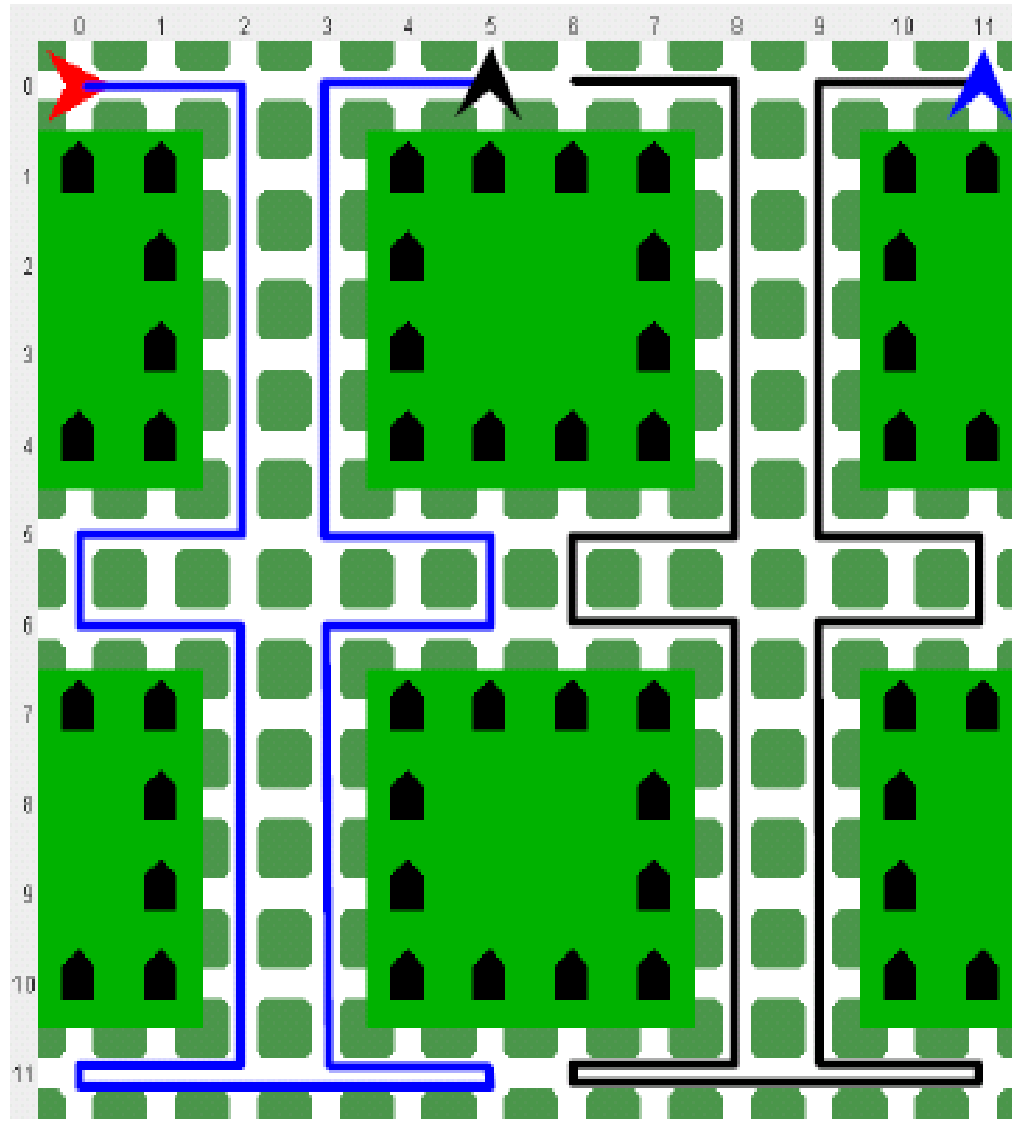
Final Situation

What route?

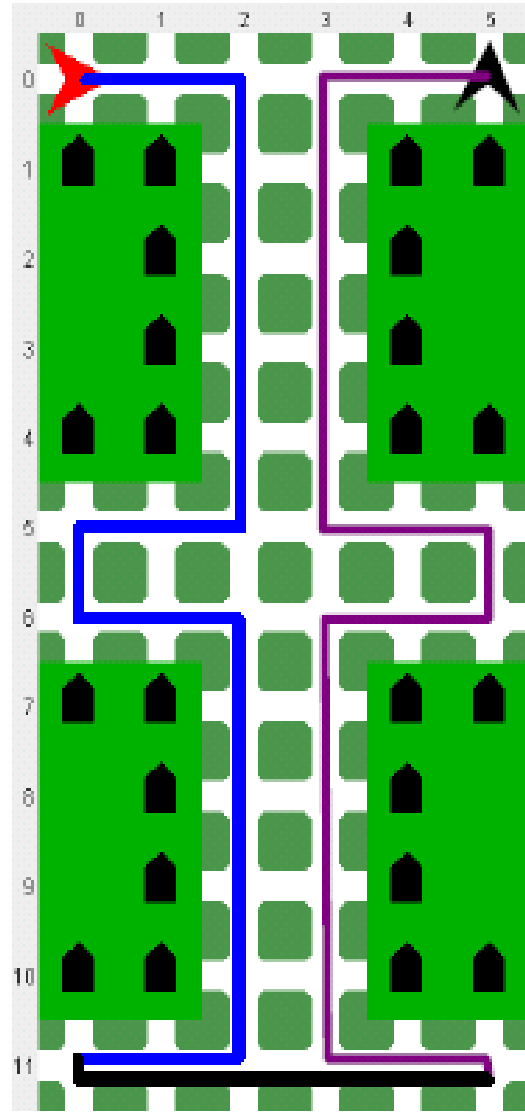
- This shows a possible route (not counting the actual delivery to the houses)



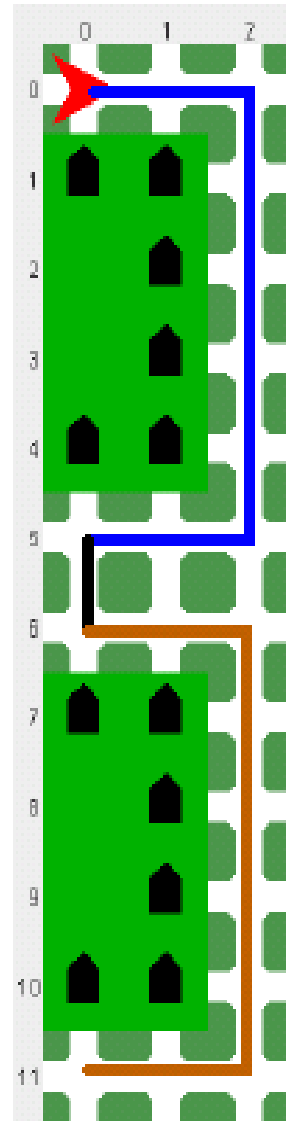
Breaking up the Work



Breaking up DeliverOneAvenue



Breaking up DeliverOneSide



DeliverBlock

