

## Gridworld Part 1 Lab 2

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9:24 AM

### GridWorld Part I Lab 2

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1. Open up BugRunner.java in Dr. Java. Compile and run. Note the location of the bug. Close the window and run a second time. Note the new location of the bug. Explain what is happening.

2. Change the class name to BugRunner2 by placing a 2 at the end of the class header. Then chose file... save as... and save it in the same folder as the BugRunner file.

3. At the top of the program find the import statements and add the line:

```
import info.gridworld.grid.Location;
```

Put this line after the line: import info.gridworld.actor.Rock;

**In Java we use import statements to help the program find the classes we need to use to run the program.**

4. We can place bug at a particular location when it is created. Locate the line that is creating a new Bug() and change it to:

```
world.add(new Location (2,3), new Bug());
```

Compile and run your program twice. What difference do you see?

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5. Modify the body of your program as follows: (Be sure to type this!!)

```
public class BugRunner2
{
    public static void main(String[] args)
    {
        ActorWorld world = new ActorWorld();
        //H
        world.add(new Location(3, 1), new Bug());
        world.add(new Location(4, 1), new Bug());
        world.add(new Location(5, 1), new Bug());
        world.add(new Location(4, 2), new Bug());
        world.add(new Location(3, 3), new Bug());
        world.add(new Location(4, 3), new Bug());
        world.add(new Location(5, 3), new Bug());
        //I
        world.add(new Location(3, 5), new Bug());
        world.add(new Location(3, 6), new Bug());
        world.add(new Location(3, 7), new Bug());
        world.add(new Location(4, 6), new Bug());
        world.add(new Location(5, 5), new Bug());
        world.add(new Location(5, 6), new Bug());
        world.add(new Location(5, 7), new Bug());
        world.show();
    }
}
```

6. Compile and run your program. What is the result?

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7. In exercise 5, we create several different Bug objects and Location objects, however we do not declare a reference for them. Any time we use the keyword **new** we are creating an object. We can do this in a statement as you see above, or we can declare and create a reference to hold the object.

For example, add the following lines before `world.show();`

```
Rock period = new Rock();
Location periodsLoc = new Location(5, 9);
world.add(periodsLoc, period);
```

8. Compile and run the program. What is the result? Would the output change if we replace the three lines in # 7 with the one line:

```
world.add(new Location(5, 9), new Rock());
```

Try it and see!

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9. Create your own picture or design.