

## Game programming with Greenfoot

Greenfoot is a new programming environment for schools and introductory university courses. Greenfoot supports the Java Programming Language, so students learn standard object-oriented programming in Java. The environment is designed specifically to convey object-oriented concepts and principles in a clean, easily accessible manner.

The Greenfoot environment makes creation of graphics and interaction easy. Students can concentrate on modifying the application logic, and engage and experiment with objects. Developing simulations and interactive games becomes easy, and feedback is immediate.

The environment is designed to quickly engage students who may have no prior interest or experience in programming. Achieving simple animation results is quick; sophisticated, professional looking scenarios are possible.

Greenfoot was developed by the group that previously designed BlueJ, another popular educational environment. It inherits much of BlueJ's simplicity and clear educational design.

### Greenfoot is free

**DOWNLOAD IT FROM ITS WEB SITE  
NO TRIAL VERSION, NO RESTRICTIONS  
FREE (AS IN FREE BEER)**

### Characteristics

- Quick start into programming
- Standard Java programming language
- Highly graphical and interactive
- Cross platform
- Flexible scenarios
- Modify existing scenarios, or write your own
- Strong emphasis on teaching and learning object orientation
- Built-in editor and compiler
- Built-in access to documentation
- Online and print tutorial available
- Experimentation with individual objects
- Built-in animation engine
- Great community support
- Free!

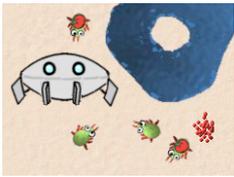
# Greeps

The Greenfoot programming competition at SIGCSE 2007, Covington, Kentucky

## Some rules

## for clarification – ask!

### Rule 1



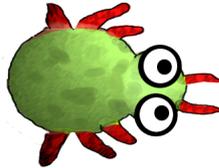
Only change the class 'Greep'. No other classes may be modified or created.

### Rule 2

You cannot extend the Greeps' memory. That is: you are not allowed to add fields (other than final fields) to the class. Some general purpose memory is provided.

### Rule 3

Greeps do not communicate directly. They do not call each other's methods or access each other's fields.



### Rule 4

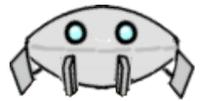
No long vision. You are allowed to look at the world only at the immediate location of the Greep. Greeps are almost blind, and cannot look any further.

### Rule 5

No creation of objects. You are not allowed to create any scenario objects (instances of user-defined classes, such as Greep or Paint). Greeps have no magic powers – they cannot create things out of nothing.

### Rule 6

No tele-porting. Methods from Actor that cheat normal movement (such as setLocation) may not be used.



## Greep invasion

The Greeps have come to Earth! And they like tomatoes. As soon as the Greeps have landed, they walk all over the place, always on the look-out for tomato deposits. But time is running out...

Welcome to the Greenfoot programming competition. Write your own Greep class and win the top price!

Programming in Greenfoot is easy. You should be able to find out what you need to write a Greep class and enter the competition quite easily.

In this competition, your task is to help the Greeps on their quest to collect as many tomatoes as they can in limited time. Write an implementation for class Greep, submit it to us, and we'll see how you score.

### How to participate

Get Greenfoot and the "Greeps" project from [www.greenfoot.org](http://www.greenfoot.org), or from us at the Greenfoot booth. Install Greenfoot on your laptop, open the project, and improve the "Greeps" class.



**Tomatoes. Greeps love tomatoes. They eat tomatoes. In fact, they eat nothing else but tomatoes. Since there is an acute tomato shortage on their home planet they have to collect as many as they can on Earth.**

You should edit only the Greeps class. You cannot change any of the other classes. Program some intelligence into the little critters, and make them carry the tomatoes to their space ship quicker than ever before.

When done, submit your class (only the file "Greep.java") back to us for scoring. To submit your entry, you can bring it to the booth on a USB memory stick, or mail it to [greeps@greenfoot.org](mailto:greeps@greenfoot.org). Note that you must be present at the booth to have your submission run.

Anyone can enter – individuals and teams – and you can submit as often as you like.

### Some tips

You will see that Greep is a subclass of Creature and of Actor. You can make use of any of the inherited methods (use of some Actor methods is restricted – see Rule 6 above).

Greeps can only communicate by spitting drops of paint (in three colors!) onto the ground. These paint drops can serve as markers to convey messages to other Greeps. Greeps do not communicate directly!

Greeps cannot load tomatoes on their own – a Greep can only load a tomato onto another Greep.

Greeps have some limited memory: one byte and two Boolean flags. You can make use of this for whatever you like, but you cannot extend it.

Also, the only part of the World Greeps can see is their own immediate location. (Greenfoot in general provides methods to see further around you, but for the purpose of this competition, use of those methods is not allowed).

### The Grand Final

We will keep track of the highest scores over the duration of the competition. Entries close at 10:20 am on Saturday. At 10:30, we will hold the grand final: The top three scorers at close of entries are run against each other. This final run will determine final results. Participants must be present to take part in the final.