

Swarm Intelligence Framework Reference Guide

How to Create Your Own Foraging Ant

1. Create a new project in Eclipse.
2. Copy the swarm jarfile file into your Eclipse project.
3. Right-click on the swarm jarfile and select "Build Path->Add To Build Path".
4. Copy the world.txt file into your Eclipse project.
5. Create a new class called MyAnt that extends the swarm.AntBase class and implements the makeChoice() method. Your class should look something like this:

```
import swarm.*;

public class MyAnt extends AntBase
{
    protected void makeChoice()
    {
        // add your ant logic here...
    }
}
```

6. You can use the Model class to determine the status of any square in the world. To access the Model class call getModel(). The Model class has the following helpful methods:

```
boolean isFood(Location loc); // true if the square at loc is a food source
boolean isNest(Location loc); // true if the square at loc is a nest
boolean isPath(Location loc); // true if the square at loc is a path
boolean isWall(Location loc); // true if the square at loc is a wall
void visit(Location loc); // visits the square at loc and deposits Pheromones
void leave(Location loc); // leaves the square at loc
Location getLocation(); // returns the current location of the ant
void setLocation(Location loc); // moves the ant to loc
```

7. Run your Eclipse project (by default the project should execute the smarm.Main class located in the swarm jarfile) and watch your ant come alive.
8. Feel free to experiment with the world.txt file. If you edit the file just be sure that the food source is always near the top of the world and the nest is always near the bottom of the world. Also, make sure that there is only one nest in the world.