

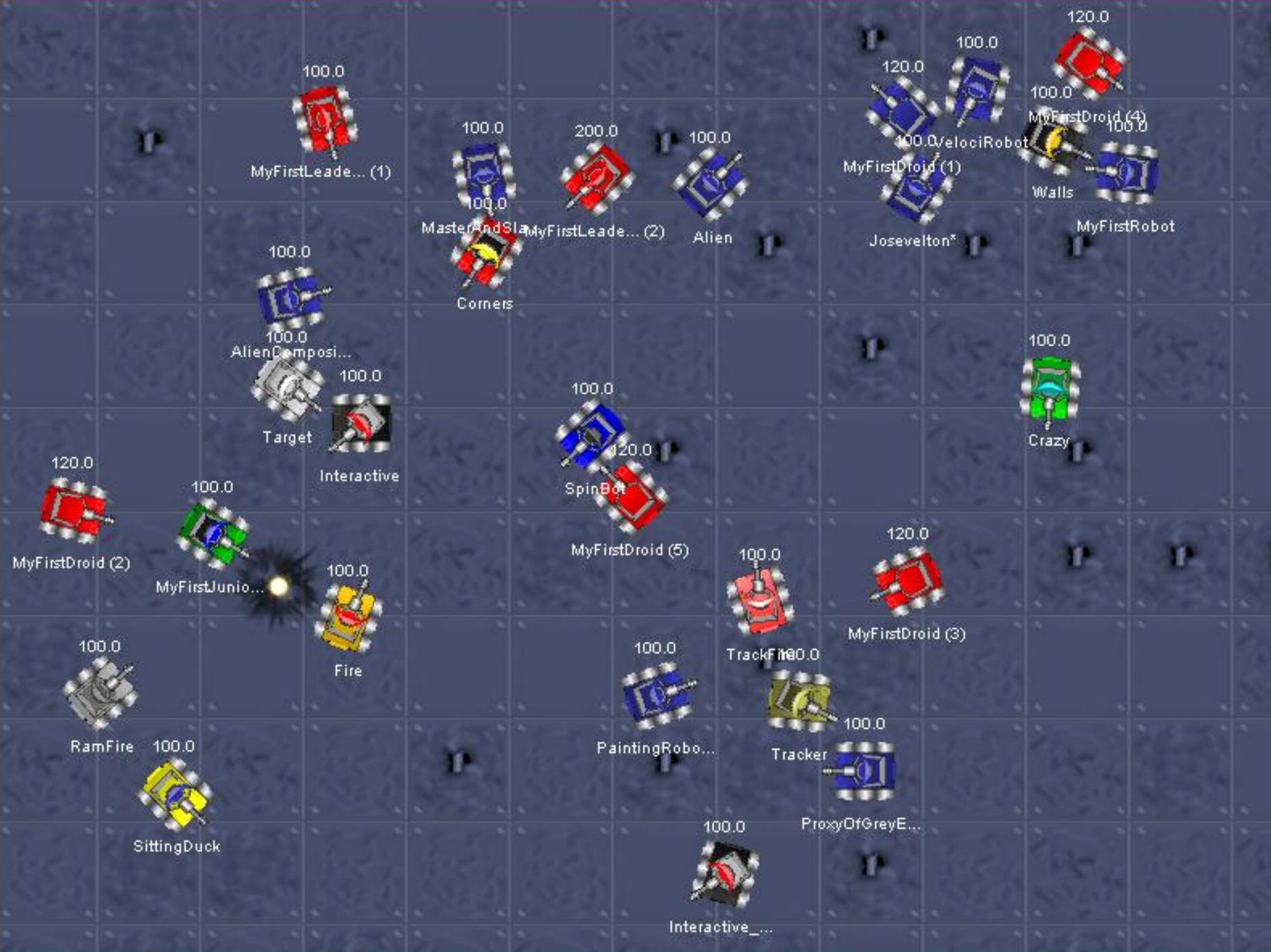


Introdução ao Robocode

SSCo713 - Sistemas Evolutivos e Aplicados à Robótica

Aluno PAE – Maurício A Dias

Professor – Claudio F. M. Toledo



100.0

MyFirstLeade... (1)

100.0

MasterAndSlam

Corners

200.0

MyFirstLeade... (2)

100.0

Alien

120.0

100.0

MyFirstDroid (1)

Josevelton*

120.0

100.0

MyFirstDroid (4)

Walls

MyFirstRobot

100.0

AlienComposi...

100.0

Target

100.0

Interactive

100.0

SpinBot

MyFirstDroid (5)

100.0

Crazy

120.0

MyFirstDroid (2)

100.0

MyFirstJunio...

100.0

Fire

100.0

RamFire

100.0

SittingDuck

100.0

PaintingRobo...

100.0

TrackFit

120.0

MyFirstDroid (3)

100.0

Tracker

100.0

ProxyOfGreyE...

100.0

Interactive_...

Agenda

- O que é o Robocode
- Instalação
- Interface
- Como programar um Robô
- Links Úteis

Robocode

- Simulador robótico de tanques de guerra que brigam entre si para ver quem é o melhor
- São robôs pois:
 - Possuem comportamento programável
 - Possuem sensores e atuadores

Atuadores

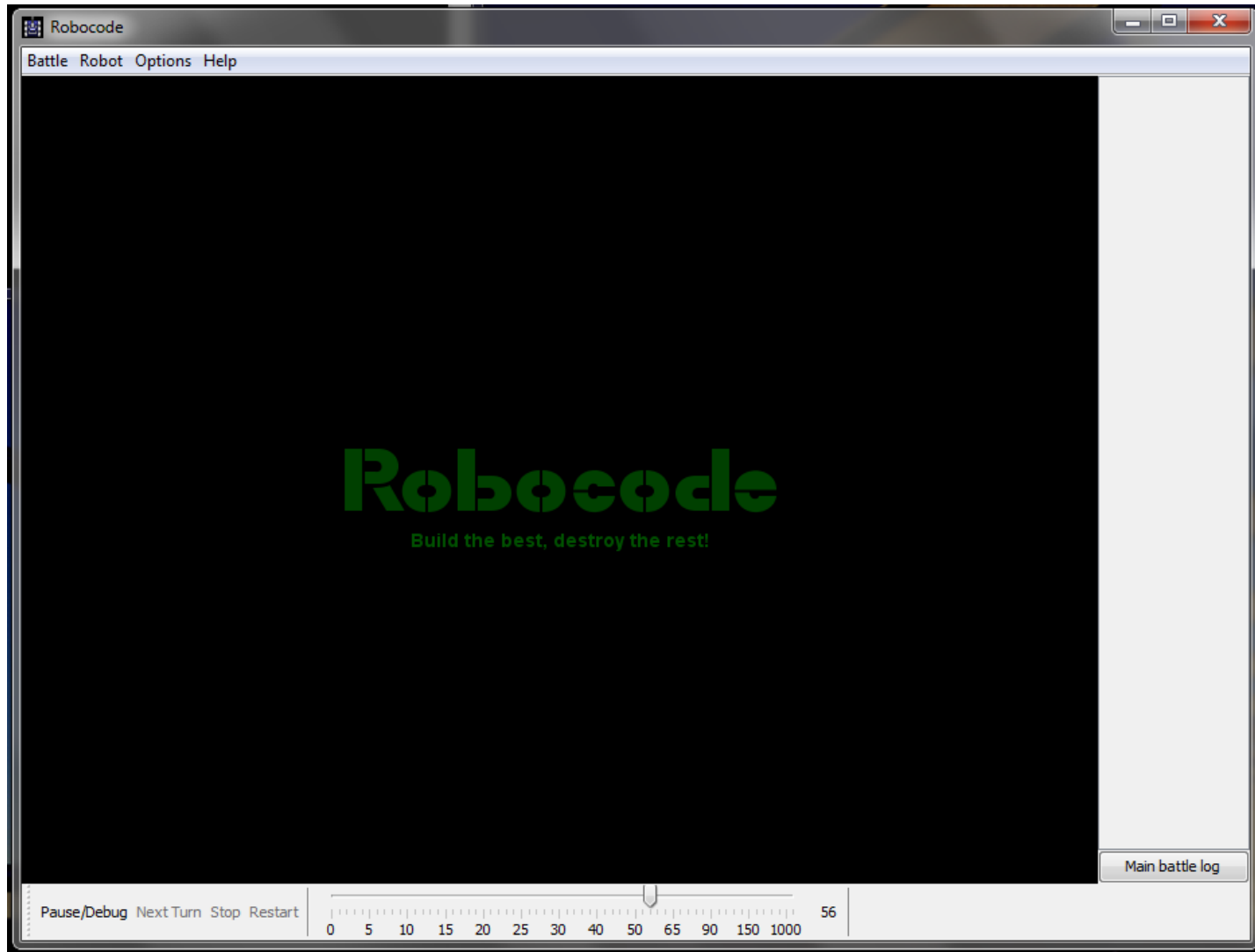


Sensores

Instalação

- Arquivo robocode.zip
 - É necessário ter instalado o JRE ou o JDK
 - Arquivo : jdk-7u9-windows-i586
 - Depois é necessário configurar as variáveis de ambiente
 - JAVA_HOME must be set up to point at the home directory for Java (JDK or JRE).
 - Windows example: JAVA_HOME=C:\Program Files\Java\jdk1.5.0_22
 - UNIX, Linux, MacOS example: JAVA_HOME=/usr/local/jdk1.5.0_22
 - PATH must include the path to the bin of the Java home directory (JAVA_HOME) that includes java.exe for starting the Java virtual Machine (JVM).
 - Windows example: PATH=%PATH%;%JAVA_HOME%
 - Instalar o ROBOCODE
 - Arquivo : robocode-1.7.4.2-setup

Interface



Interface

Robocode: Turn 48, Round 1 of 10, 48 TPS, 0 FPS, Used mem: 22 of 494 MB

Battle Robot Options Help

The interface displays a top-down view of a battle arena on a grid. Various robots are positioned across the grid, each with a health value displayed above it. A large fire explosion is visible on the left side of the arena. The robots and their health values are:

- Fire: 68.0
- SpinBot: 85.5
- MyFirstDroid (2): 75.0
- MyFirstDroid (5): 103.0
- Tracker: 132.0
- MyFirstJunior...: 95.0
- MyFirstRobot: 72.2
- Josevelton*: 102.8
- MyFirstLeader (1): 188.8
- BlockFire: 103.0
- Tracker: 99.8
- MyFirstRobot: 93.0
- Josevelton*: 88.6
- Corners: 100.8
- MasterAndSlave: 123.0
- MyFirstDroid (4): 123.0
- Interactive: 93.0
- MyFirstLeader (1): 107.2
- Target: 100.0
- Interactive: 83.4
- MyFirstLeader (1): 68.2
- TeamFire: 95.8
- ProxyOfGreyE...: 96.8
- PaintingRobot...: 120.0
- Target: 100.0
- Interactive: 96.8
- ProxyOfGreyE...: 96.8
- MyFirstDroid (1): 103.0
- VelociRobot: 123.0
- MyFirstDroid (3): 123.0
- MyFirstLeader (1): 100.0
- SittingDuck: 100.0
- MyFirstDroid (1): 103.0
- VelociRobot: 120.0
- Alien: 102.0
- MyFirstDroid (3): 94.0
- Walls: 94.0
- SittingDuck: 100.0
- MyFirstDroid (1): 103.0
- VelociRobot: 120.0
- Alien: 102.0
- Walls: 94.0

Right sidebar (Robot list):

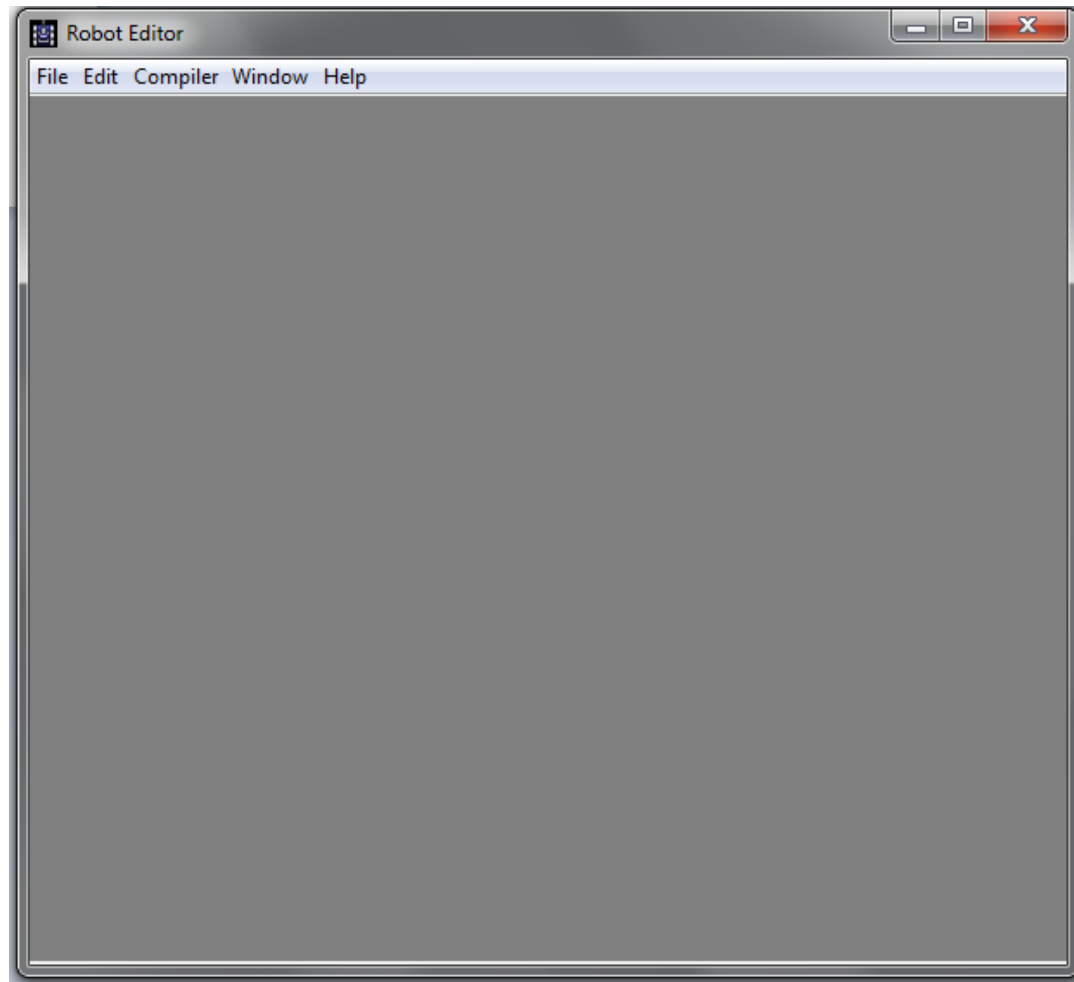
- Josevelton*
- Corners
- Crazy
- Fire
- Interactive
- Interactive_v2
- MyFirstJuniorRobot
- MyFirstRobot
- PaintingRobot
- RamFire
- SittingDuck
- SpinBot
- Target
- Tracker
- TrackFire
- VelocRobot
- Walls
- Alien
- AlienComposition
- MasterAndSlave
- ProxyOfGreyEmine...
- Slave
- MyFirstDroid (1)
- Main battle log

Bottom bar: Pause/Debug Next Turn Stop Restart 0 5 10 15 20 25 30 40 50 65 90 150 1000 56

Como programar um robô

- Para programar o robô é necessário iniciar o *robot editor*
 - Robot->Editor
 - File -> new robot
 - Escrever um nome para o Robô
 - E do diretório onde serão armazenados os Robôs

Como programar um robô



Como programar um robô

```
Robot Editor
File Edit Compiler Window Help
Editing - Dfd *
1 package dfd;
2 import robocode.*;
3 //import java.awt.Color;
4
5 // API help : http://robocode.sourceforge.net/docs/robocode/robocode/Robot.html
6
7 /**
8  * Dfd - a robot by (your name here)
9  */
10 public class Dfd extends Robot
11 {
12     /**
13      * run: Dfd's default behavior
14      */
15     public void run() {
16         // Initialization of the robot should be put here
17
18         // After trying out your robot, try uncommenting the import at the top,
19         // and the next line:
20
21         // setColors(Color.red,Color.blue,Color.green); // body,gun,radar
22
23         // Robot main loop
24         while(true) {
25             // Replace the next 4 lines with any behavior you would like
26             ahead(100);
27             turnGunRight(360);
28             back(100);
29             turnGunRight(360);
30         }
31     }
32 }
```

Como programar um robô

```
package man;
import robocode.*;

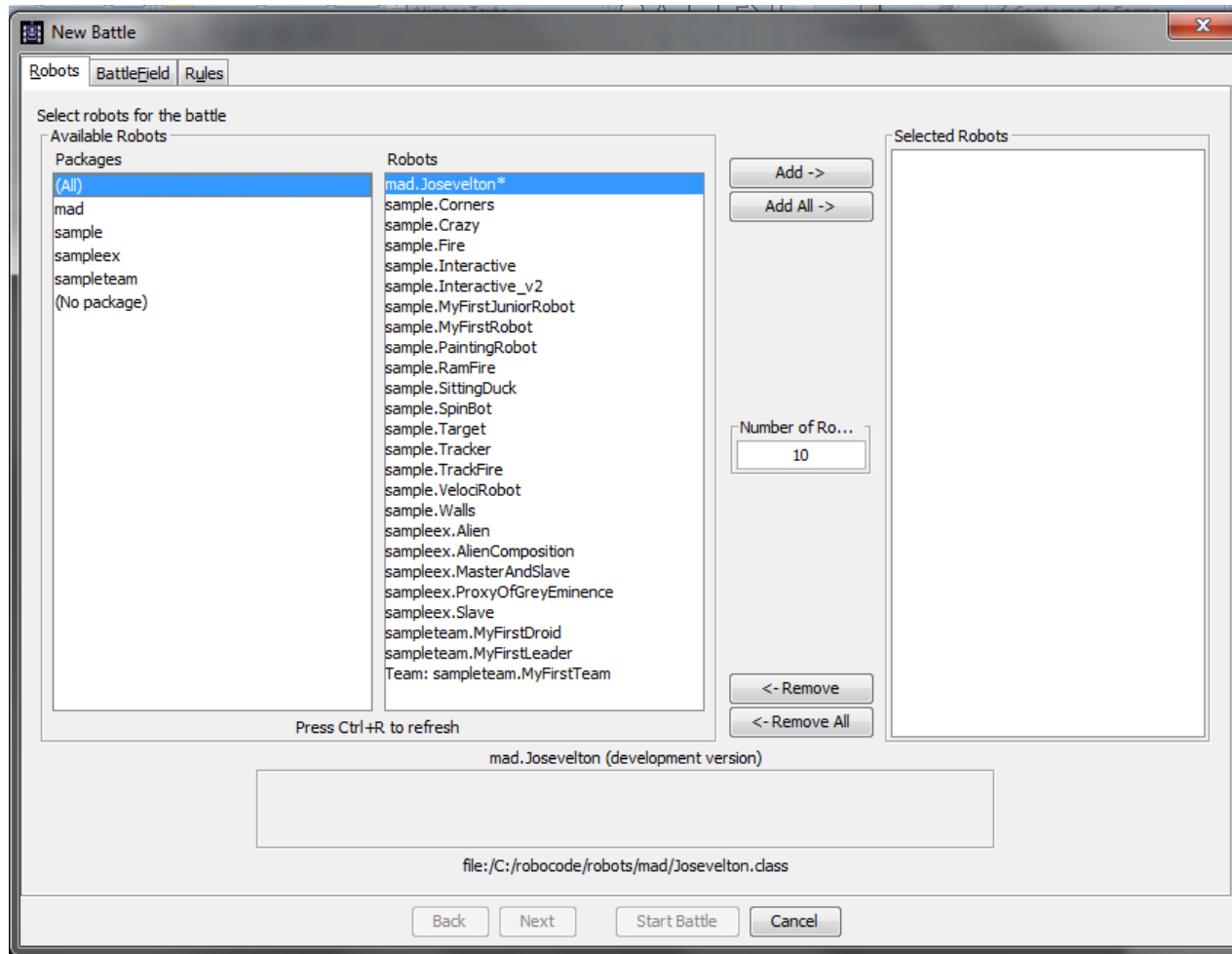
public class MyFirstRobot extends Robot {
    public void run() {
        while (true) {
            ahead(100);
            turnGunRight(360);
            back(100);
            turnGunRight(360);
        }
    }

    public void onScannedRobot(ScannedRobotEvent e) {
        fire(1);
    }
}
```

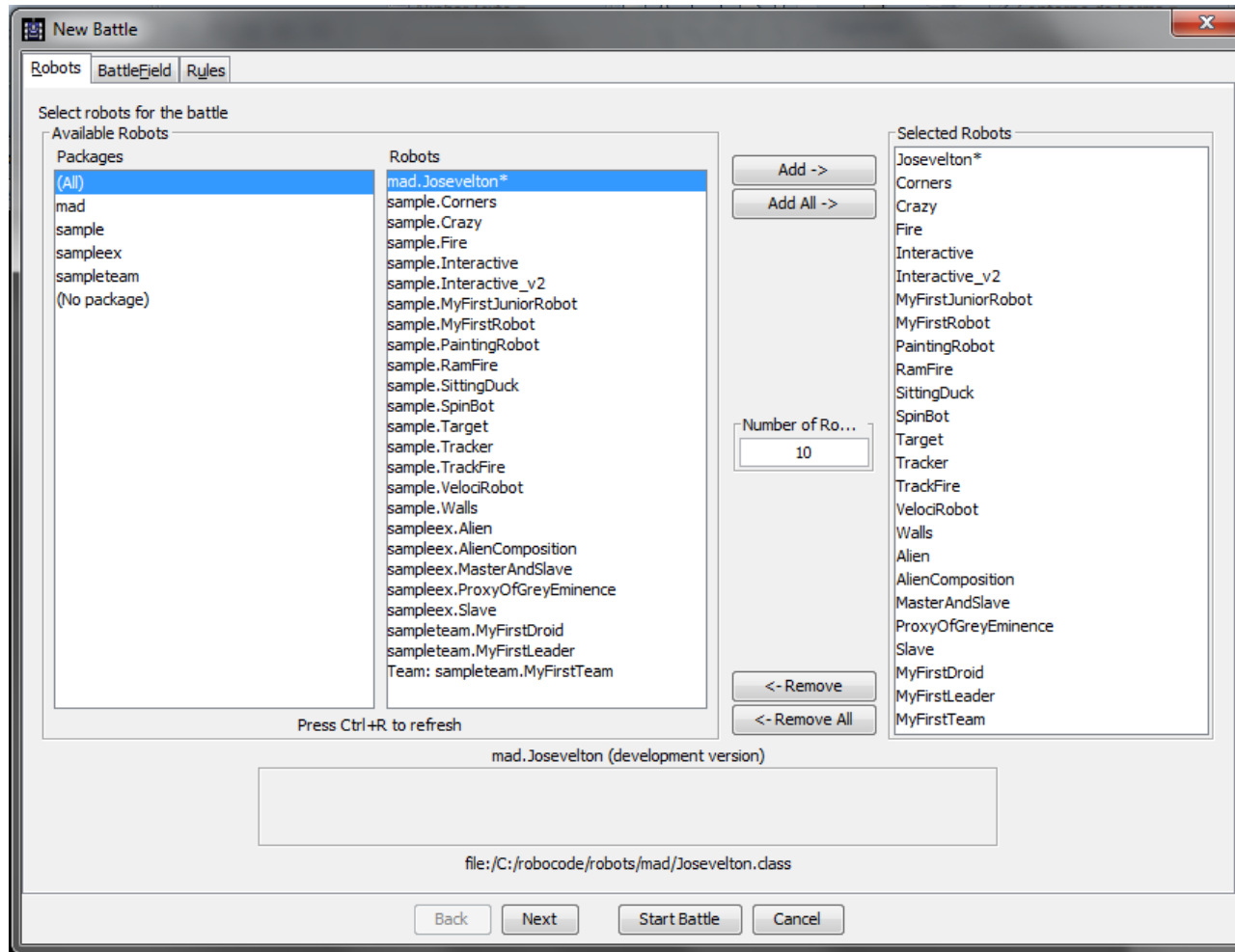
Como programar um robô

- Salve o robô
- Compile o robô
 - Compiler -> compile
- Pronto seu robô já aparece na tela de batalha

Como programar um robô



Como programar um robô



Links Uteis

- <http://robowiki.net/wiki/Robocode>
- <http://robocode.sourceforge.net/docs/robocode/>



Fim da Aula

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