Hamburg Elixir Meetup

Let's build RealTimeBattle Bots

Welcome to April Edition!

1. Hi there :)
2. Recap
   a. ElixirConf EU
   b. Erlang 21 Release Candidate
   c. August: Code Elixir (formerly Elixir.LDN)
3. Whats RTB and how to build a bot?
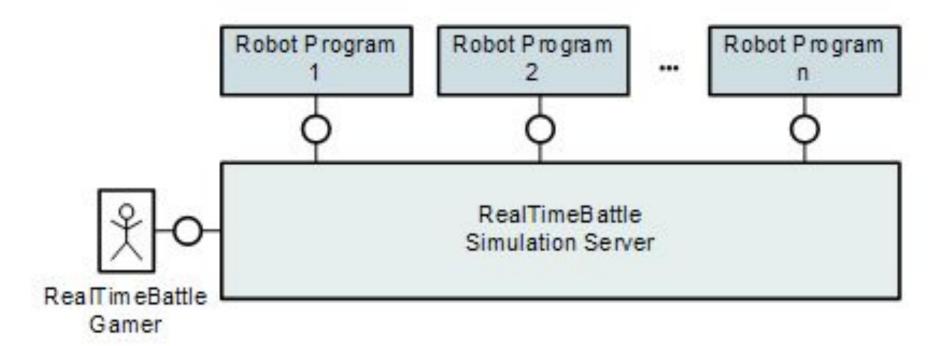4. Lets starting coding
5. Chitchat and Beer

RealTimeBattle is a programming game, in which robots controlled by programs are fighting each other. The goal is to destroy the enemies, using the radar to examine the environment and the cannon to shoot.

Here is a list of features of RealTimeBattle:

- Game progresses in real time, with the robot programs running as child processes to RealTimeBattle.
- The robots communicate with the main program using the standard input and output.
- Robots can be constructed in almost any programming language.
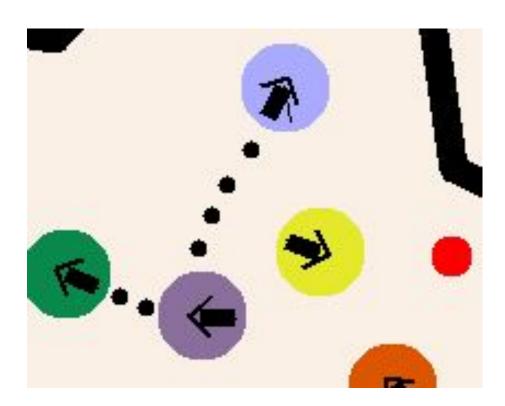- Any number of robots can compete simultaneously if allowed by

Server and Clients

Parts of a Robot

- Front (thin line)
- Radar (corner angle)
- Canon (thick rectancle)

Each can be rotated
or sweeped independent

How does it work?

Stdin Examples:

- Initialize 1
- YourName foobar
- GameOption 3 1.23
- Radar 1.23 3 2.765
- Energy 78
- Collision 3 0.45
- Dead
- GameFinishes

Stout Examples:

- Name barbaz
- Rotate 2 2.0 1.2
- Accelerate 0.5
- Brake 0.2
- Shoot 12

Do's and Dont's

- Losing health:
  - Hit a wall
  - Hit a mine
  - Get shot
  - Shooting bullets (very little)
- Gaining health:
  - Eat cookies
- Calculations:
  - RAD everywhere!
  - -pi to pi instead of -180..180
  - Energy is 0..100 (or so)

- Driving
  - Accelerate
  - Brake if needed
  - Avoid objects
  - Target cookies
- Shooting
  - Better at close range
  - You can shoot mines and cookies
  - Control power of bullets

Lets have a look at the code ...

https://github.com/hh-ex/kata-realtimebattle

- Dockerfile
- Tournament.rtb
- Makefile   (`make start`)
- lib/real_time_battle_bot.ex
  - StdinReader
  - Protocol
  - BotHandler
  - BotContext
  - Bot
  - YourBot

Lets have a Tournament next month!

Fork the repo and build your bot