ALMA MATER STUDIORUM - UNIVERSITY OF BOLOGNA

Rock Paper Scissors Lizard Spock

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1. Introduction

Rock Paper Scissors Lizard Spock (RPSLS) is an expansion of the classic selection method game rock-paper-scissors. It operates on the same basic principle, but includes two additional weapons: the lizard (formed by the hand as a sock-puppet-like mouth) and Spock (formed by the Star Trek Vulcan salute). The game was invented by Sam Kass with Karen Bryla, as "Rock Paper Scissors Spock Lizard"[1].

This software version of the game is developed at University of Bologna and has three main nodes:

SIB Server: provides the users interacions and stores the games informations (status, players, scores, etc.)

Client GUI: represents the playing node, which allows the users to play with each other

Admin GUI: supply to the SIB Server Administrator a graphical interface useful to manage the game ontology and the game's entries.

2. Requirements

2.1. SIB Server

To be able to play with RPSLS the Semantic Information Broker (SIB) Server is srictly necessary: all game information and users interacions are stored into it.

A SIB Server is a GNU/Linux 64bit PC that runs SmartM3[2] environment. The installation of SmartM3 follows the standard procedure:

— download SmartM3 package [3]
— unpack it
— with the terminal go to the unpacking folder and type:

```
$ ./configure
$ make
# make install
```

or, if the PC runs a GNU/Linux Debian based:

```
$ cd deb_amd64
# dpkg -i *.deb
```

Now is possible to run the SIB Server instance using two terminals and launching the following commands:

```
$ redsibd
```

```
$ sib-tcp
```

2.2. Client and Admin

The only requirements to use client and admin GUI is the installation of Java Virtual Machine.

For running the admin and/or the client is just necessary run the following code in their directory:

```
$ java -jar rpsls-admin.jar
```

or

```
$ java -jar rpsls-client.jar
```

[1] http://en.wikipedia.org/wiki/Rock-paper-scissors-lizard-Spock
[2] http://en.wikipedia.org/wiki/Smart-M3
[3] http://sourceforge.net/projects/smart-m3/

3. Admin GUI

The Admin GUI is a support application for SIB Server administrators that provides some features. At startup, the application requires the SIB Server IP and Port [Figure 1].

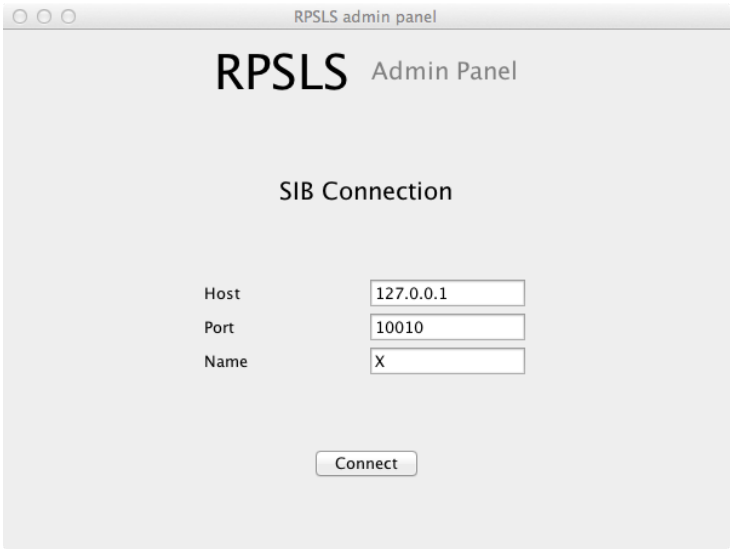


Figure 1: RPSLS-Admin -connection view-

The main view is shown after that the application is connected to the SIB Server and is represented in Figure 2. The admin now can use the buttons placed in the bottom of the application to initialize the SIB with the static description of the game (button Init), remove all RPSLS entries (button Clean), remove all entries from the SIB (Reset). Using the Delete button in the right of the panel the administrator can delete the ended game(s) selected (and its all informations).

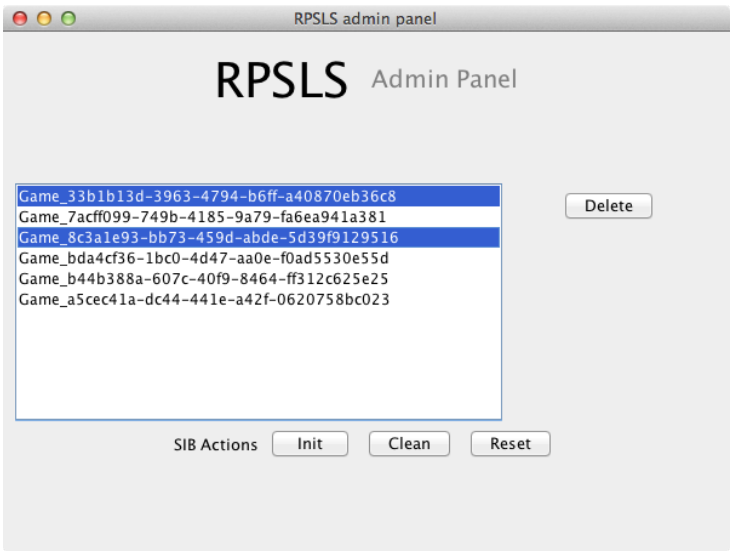


Figure 2: RPSLS-Admin -main view-

4. Client GUI

Client GUI is the main application which users uses to play the game.
At startup, Client GUI, like Admin GUI, requires the SIB Server IP and port [Figure 3].

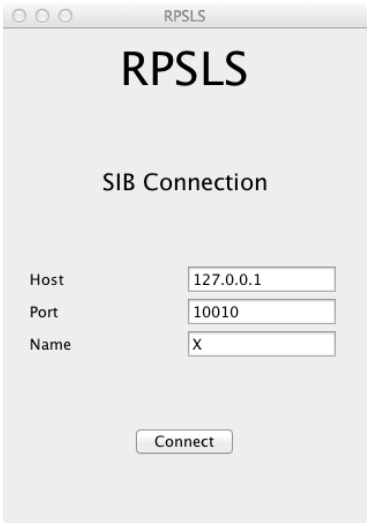


Figure 3: RPSLS-Client -connection view-

When the connection is established, the user can insert his name and choose if he wants to start a new game or join an existing game [Figure 4].

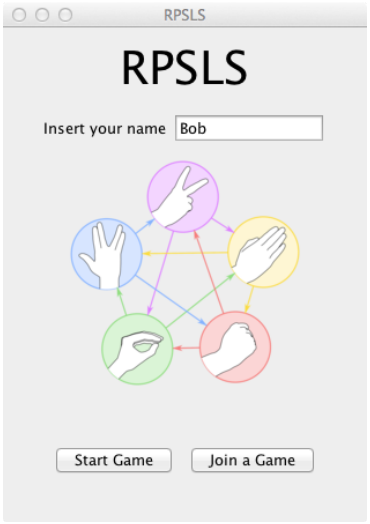
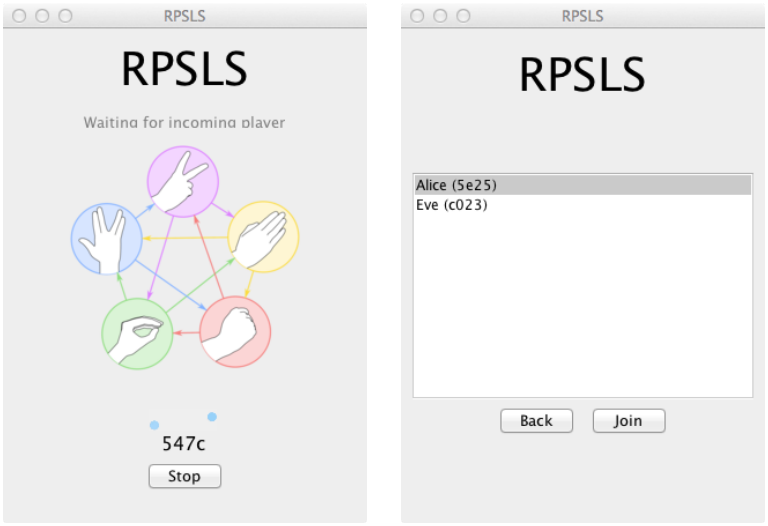


Figure 4: RPSLS-Client -welcome view-

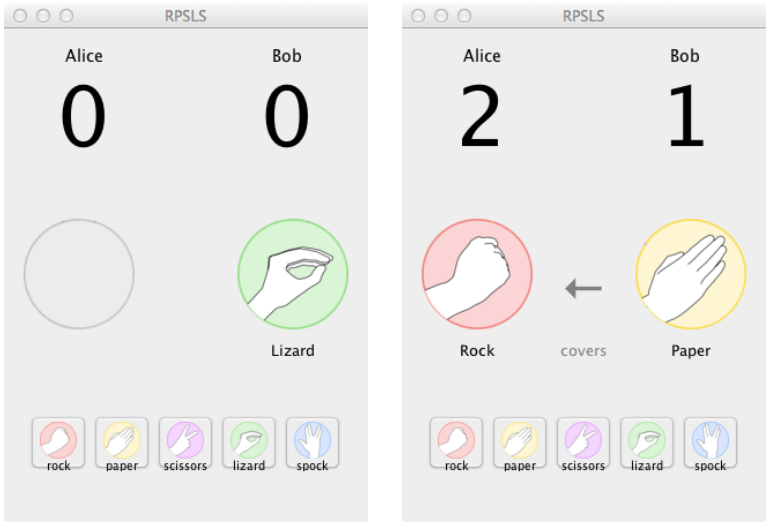
If the user chooses to start a new game RPSLS starts to wait an opponent [Figure 5a], else, if the user chooses to join an existing game the GUI shows the list of all waiting games (that waits an opponent) [Figure 5b].



(a) RPSLS-Client -waiting opponent- (b) RPSLS-Client -joining game-

Figure 5: RPSLS-Client -starting game-

After that the user joins a game, or an opponent join the new game created by the user, the GUI shows the game view that presents players' names and scores, hit sended and a button for each type of hit. The player waits for the opponent's hit, which is shown only after the user sends its [Figures 6a and 6b].



(a) RPSLS-Client -waiting hit- (b) RPSLS-Client -hit received-

Figure 6: RPSLS-Client -game view-

If a player reaches three points the game finishes and another view shows if the player wins or looses and the game's score [Figure 7]. By clicking on the back button the view in Figure 2 is shown.

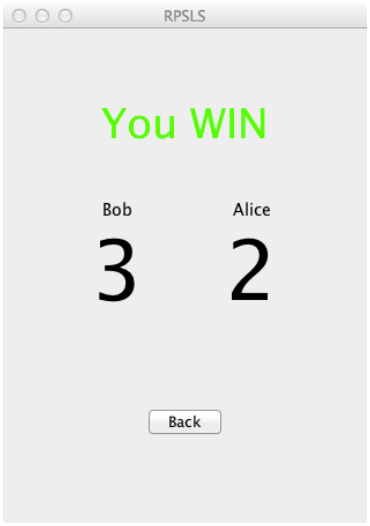


Figure 7: RPSLS-Client -win view-

4.1. Game's rules

When the game receives the opponent's hit and the player sends its own the core evaluate who wins the round by applying the following rules:
— Scissors cut paper
— Paper covers rock
— Rock crushes lizard
— Lizard poisons Spock
— Spock smashes scissors
— Scissors decapitate lizard
— Lizard eats paper
— Paper disproves Spock
— Spock vaporizes rock
— Rock crushes scissors