

USER GUIDE SPAGHETTI JARBAL

During the CodeCup contest 2022 it is possible to use a Java application to play Spaghetti games between:

- Humans
- Bots (player1, player2 and player3 are included)
- A bot written by yourself (can be in any programming language)
- An opponent somewhere on the Internet using a server (if available)
- An opponent on an intranet when running a server

You can download the jarbal from www.codecup.org or www.informaticaolympiade.nl.

Three people contributed to this application:

- Emil Riedeman wrote the code for the Spaghetti client and server. Emil is a NIO-contestant.
- Marcel Vlastuin wrote the three Spaghetti bots that are included in the jarbal. The bots are the same players that are included in the Caia tarbals.
- Ludo Pulles worked on a problem with the visualization.
Marcel and Ludo are two of the organizers of the CodeCup.

Starting the application

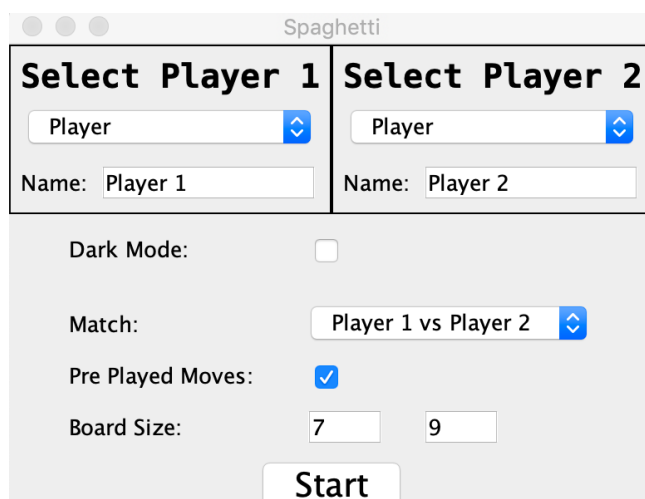
You can start the application in two ways:

- Just click on the application in Explorer or Finder
- Execute in a terminal from the command line or prompt:

```
java -jar spaghetti.jar
```

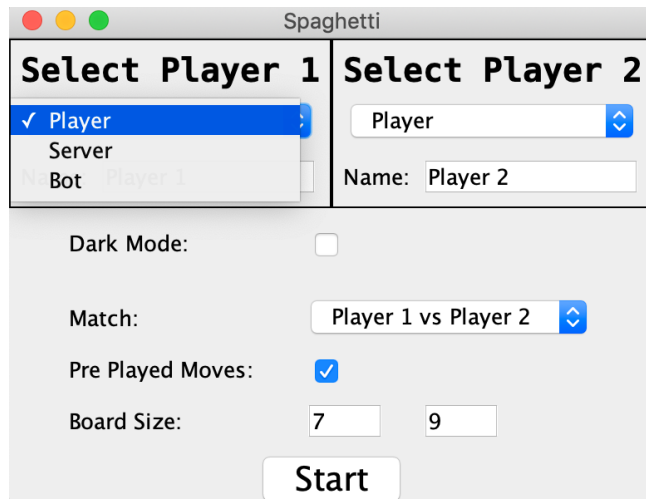
The second method gives you extra information in the terminal about what is going on and seems to be more stable while executing. You can download Java at java.com.

After starting, you will see this interface:



The screenshot shows a window titled "Spaghetti" with a light gray background. It is divided into two main sections. The top section has two columns, each with a title "Select Player 1" and "Select Player 2". Each column contains a dropdown menu labeled "Player" with a blue arrow icon, and a text input field labeled "Name:" with "Player 1" and "Player 2" respectively. The bottom section contains several settings: "Dark Mode:" with an unchecked checkbox, "Match:" with a dropdown menu showing "Player 1 vs Player 2", "Pre Played Moves:" with a checked checkbox, and "Board Size:" with two input fields containing "7" and "9". At the bottom center is a large "Start" button.

You can select *Player1* and *Player2* from a menu:



Spaghetti

Select Player 1

- ✓ Player
- Server
- Bot

Select Player 2

Player

Name: Player 2

Dark Mode: ☐

Match: Player 1 vs Player 2

Pre Played Moves: ☒

Board Size: 7 9

Start

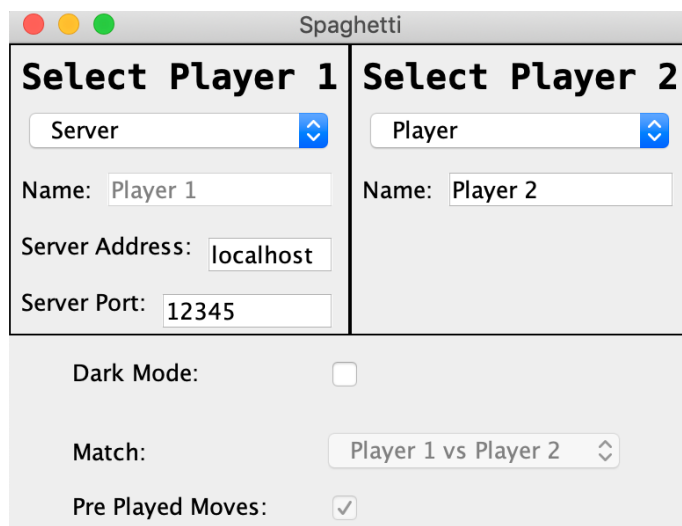
Choosing a human player

If you want to play Spaghetti yourself, just choose the default option, which is *Player*. You can type a name for each player.

In the CodeCup contest bots must always play with two pre played tiles or moves. As a human player you have the option to play from scratch, starting with an empty board. And you have the option as a human player to play on a board with different size. If you are playing with or against a bot, you do not have these options.

The other two menu options speak for themselves.

Choosing a server player



Spaghetti

Select Player 1

- Server
- Player
- Bot

Select Player 2

Player

Name: Player 2

Server Address: localhost

Server Port: 12345

Dark Mode: ☐

Match: Player 1 vs Player 2

Pre Played Moves: ☒

Start

You are free to choose *Server* as an opponent. If a server is available, just type in the address and the port in use. You can run your own server. For information and downloads:

<https://github.com/EmilRiedeman/CodeCup-Spaghetti-Java-GUI>.

Choosing a bot player

The screenshot shows the 'Spaghetti' application window. It has two main tabs: 'Select Player 1' and 'Select Player 2'. The 'Select Player 1' tab is active and contains the following elements:

- Bot:** A dropdown menu with a blue arrow icon.
- Name:** A text input field containing 'Player 1'.
- Executable:** A radio button selected, followed by a 'Search File' button and a minus sign.
- Java:** An unselected radio button, followed by a 'Search File' button and a minus sign.
- Other:** An unselected radio button, followed by an empty text input field.
- Write stderr to log file:** An unchecked checkbox.
- log.txt:** A text input field.
- Search Dire...:** A button.

The 'Select Player 2' tab is also visible and contains:

- Player:** A dropdown menu with a blue arrow icon.
- Name:** A text input field containing 'Player 2'.

At the bottom of the window, there are additional settings:

- Dark Mode:** An unchecked checkbox.
- Match:** A dropdown menu showing 'Player 1 vs Player 2'.
- Pre Played Moves:** A checked checkbox.
- Board Size:** Two input fields, the first containing '7' and the second containing '9'.
- Start:** A button.

You can choose from three options:

- A compiled program player. Three bots are provided in the package: *player1*, *player2* and *player3*. You can also add your own compiled bots. See www.codecup.org for more details. Just click on *Search File* and select the executable.
- A Java player. You can select a Java class or a Java jar. You must write in Java the bots yourself and compile them. For more information: www.codecup.org.
- Some bots can be executed from the command line or prompt, e.g. programs made in Python 2, Python 3 or in Java. In that case select *Other* and specify the command.

Examples:

- A Python 2 player can be executed with:

```
python2 player.py
```

- A Python 3 player can be executed with:

```
python3 player.py
```

The exact commands depend on the OS. The examples given are for OSX.

- A Java class can be executed with:

```
java -classpath ~/caia/spaghetti/bin/ JavaName
```

In this case *JavaName* is the name of the called class. In this example `~/caia/spaghetti/bin/` is the path to the class. The name should be the same of the file *JavaName.class*. In general, you shall not use this because you can use the *Java* option instead.

- A Java jar can be executed in a similar way:

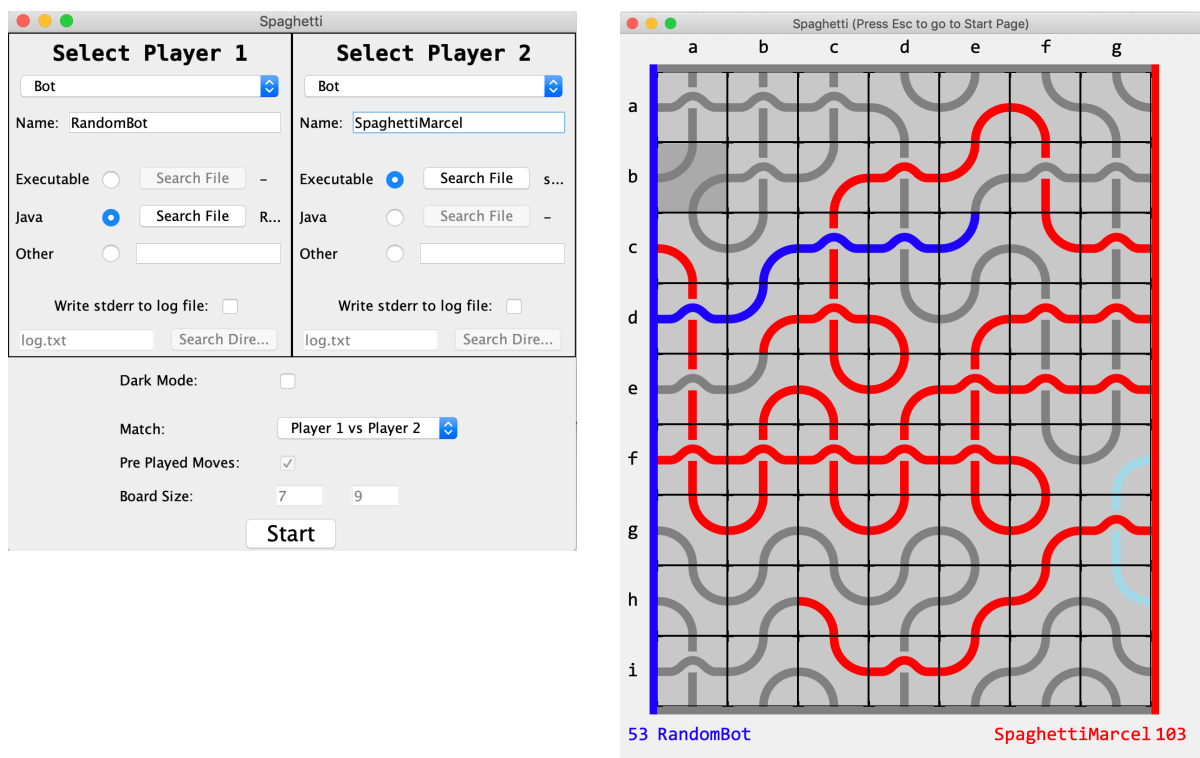
```
java -jar -classpath ~/caia/spaghetti/bin/ JavaName
```

In this case *JavaName* is the name of the called class. In this example `~/caia/spaghetti/bin/` is the path to the class. The name should be the same of the file *JavaName.class*. In general, you shall not use this because you can use the *Java* option instead.

If you tick off the standard error option, the stderr produced by your bot will be written to the file *log.txt*. You can change the filename and its destination by choosing a folder.

Starting a game

Once both players are selected, just press *Start* and the game will be played. First, we let two bots play against each other.

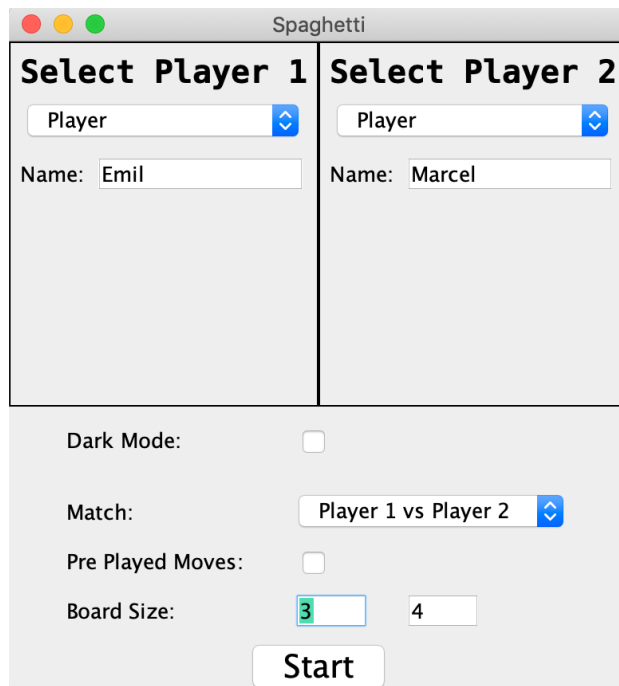


In this example the Java player *RandomBot.class* played against the executable *spaghettiMarcel*, which was written in C++ and compiled by a g++ compiler. In Windows such a executable would be recognized as *spaghettiMarcel.exe*.

When clicking on *Esc* you will return to the previous menu to start a new game.

Starting a game between two human players

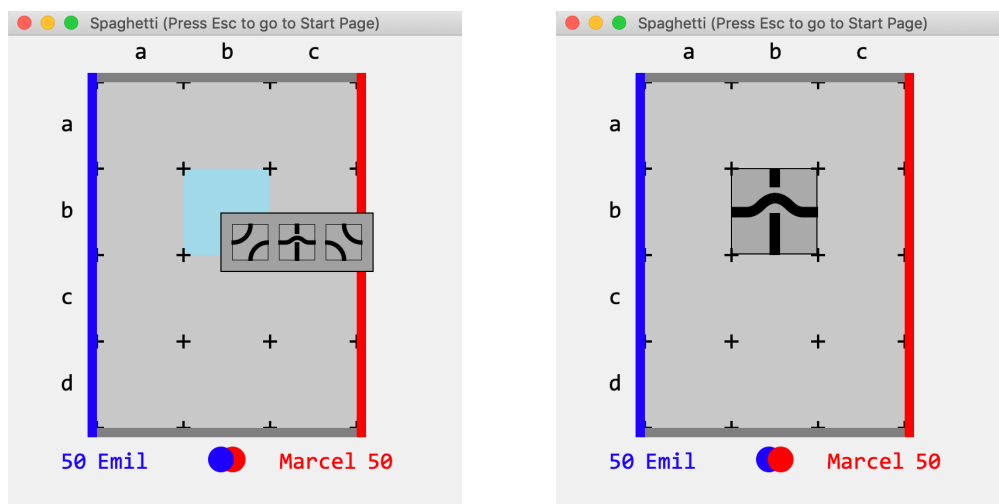
Assume *Emil* wants to play against *Marcel*. Like this:



The screenshot shows a window titled "Spaghetti" with two columns for player selection. The left column, "Select Player 1", has a dropdown menu set to "Player" and a text field containing "Emil". The right column, "Select Player 2", has a dropdown menu set to "Player" and a text field containing "Marcel". Below these are settings for "Dark Mode" (unchecked), "Match" (set to "Player 1 vs Player 2"), "Pre Played Moves" (unchecked), and "Board Size" (set to 3). A "Start" button is at the bottom.

Emil and *Marcel* decide to play on a smaller board without pre played moves.

Emil starts by using his mouse, first clicking on an empty spot, and then making a selection:



Marcel should reply and so on...

Development of spaghetti.jar

If there are issues to report consult: <https://github.com/EmilRiedeman/CodeCup-Spaghetti-Java-GUI/issues>. For new releases of this application visit the address: <https://github.com/EmilRiedeman/CodeCup-Spaghetti-Java-GUI/releases>.