DrBrainfuck Documentation

Tommaso Rodolfo Masera Claudio Maggioni

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1 User Level

1.1 Brief Introduction to Brainf*ck

*Brainf*ck* is a programming language supposed to resemble a working Turing machine and it consists of only eight commands.

A program written in *Brainf*ck* makes use of sequences of these commands and said sequence might actually have other characters in between that are promptly ignored and treated as comments instead.

The way *Brainf*ck* works includes a program and an instruction pointer, an array of byte cells initialized to 0 as well as a movable data pointer, starting from the leftmost position, to address such cells with the given instructions. What's more *Brainf*ck* makes use of the ASCII encoding for inputs and outputs.

The eight commands *Brainf*ck* is based on are the following:

`>` : increments the data pointer to point the cell to the right;

`<` : decrements the data pointer to point the cell to the left;

`+` : increases by one the byte at the data pointer;

`-` : decreases by one the byte at the data pointer;

`.` : prints as output the byte at the data pointer;

`,` : asks for an input to store in the byte at the data pointer;

`[` : if the byte at the data pointer is zero, jumps forward to the command after the matching `]` command instead of advancing the instruction pointer to the next instruction;

`]` : if the byte at the data pointer is non-zero, jumps backward to the command before the matching `[` command instead of advancing the instruction pointer to the next instruction;

1.2 About the Interpreter

1.2.1 Running the Program

You have two different options to run the program: a GUI and a CLI.

For the GUI open the "`gui.rkt`" file from either the 'DrRacket' environment or the Racket CLI tool.

As for the CLI version of the program you should use the "`./cli.rkt`" command followed by your "`filename.bf`" *Brainf*ck* file that you want to execute.

1.2.2 Current Features

TODO

2 Developer Level

2.1 Interpreter Execution

TODO