Brainfunc

A programming language like brainf*ck

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Language background

- 🤔 C++ templates are Turing complete.
- 🤔 Brainf*ck is also Turing complete.
- 🤔 How about introducing functions into brainf*ck?
- 😄 While-statements are substitutable with recursive functions and if-statements!

What is Brainfunc?

- It is a derivative of brainf*ck.
- There is a void function declaration in the language.
- There is an operation () in the language, which means an if-statement.
- There is no operation [] which means a while loop in brainf*ck in the language.

Sample code (an echo program)

```
# function main
_ {
    # input
    ,
    # if (input + 1 != 0) (<=> input != EOF)
    + ( -
        # print input
        .
        # continue echoing
        _
    )
}
```

Try it on Brainfunc visualizer now!

Commands

Command	Description
`x{y}`	Declare a function that executes `y` with the name `x`.
`>` `<`	Increment and decrement the index of the current cell.
`+` `-`	Increment and decrement the value of the current cell.
`,` `.`	Input to and output from the value of the current cell.
`(x)`	Execute `x` if the value of the current cell is not equal to 0.
`x`	Call a function with the name `x`.

See also: README.md

How can we enjoy Brainfunc?

- Try to code Brainfunc from Brainfunc visualizer.
- Install a Brainfunc compiler with a command below.

  `brew install shuzaei/brainfunc/brainfunc`

  - Usage: `bcc <filename> [output filename]`
- Install a Visual Studio Code extension from here.

What are the merits and the demerits of Brainfunc?

- ✓ You can use functions and write brainfunc-like code more with ease.
- ✓ You can use if-statement without affecting surrounding cells.
- ✓ You can leave comments more formally and efficiently.
- ❌ You can use only 63 functions in the current status.

Good luck with your life on Brainfunc!

Thank you for watching,

Shuz*

The history and release notes

- 2021/06/25 Invented Brainfunc on the evening
- 2021/06/25 Created the first transpiler
- 2021/06/26 Created the first compiler
- 2021/06/26 Released an alpha version of the package
- 2021/06/26 Created the first visual studio code extension
- 2021/06/27 Created the first homebrew package
- 2021/06/27 Released a beta version of the package
- 2021/07/02 Started to create a visualizer
- 2021/07/03 Released an alpha version of the visualizer
- 2021/07/05 Released a beta version of the visualizer

Links

- GitHub repository
- GitHub repository of the homebrew package
- Visual Studio Code extension
- Brainfunc visualizer