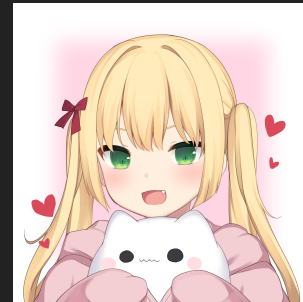


# Brainfunc

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                                                                    |
|-------------------------------------|--------------------------------------------------------------------------------|
| <code>x{y}</code>                   | Declare a function that executes <code>y</code> with the name <code>x</code> . |
| <code>&gt;</code> <code>&lt;</code> | Increment and decrement the index of the current cell.                         |
| <code>+</code> <code>-</code>       | Increment and decrement the value of the current cell.                         |
| <code>,</code> <code>.</code>       | Input to and output from the value of the current cell.                        |
| <code>(x)</code>                    | Execute <code>x</code> if the value of the current cell is not equal to 0.     |
| <code>x</code>                      | Call a function with the name <code>x</code> .                                 |

See also: [README.md](#)

## How can we enjoy Brainfunc?

- Try coding on [Brainfunc visualizer](#).
- Install a Brainfunc compiler with a command below.

```
brew install shuzaei/brainfunc/brainfunc
```

- Usage: `bcc <filename> [output filename]`

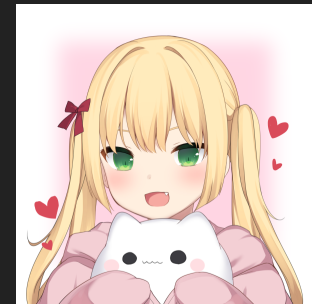
- Install a Visual Studio Code extension from [here](#).

## 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](#)