Compiler

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Compiler proyect made as final practice in the subject HLC. 2ºSMR
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Github proyect

How it works

The compiler receives a code[1] that will be translated into binary instrucions which will be executed. It uses 2Bytes instructions, where the first 5 bits will be used fort he instruction, the next 3 bits for the registry and the last byte for its value. If the instruction line is 255 or greater the execution will exit.

[1]Ex: valor R1 65

Posible instructions

imprime RZ

Prints the value stored in the registry Z

Example

```
R3 == 64 R7 == 5
imprime R3 → 00000011 00000000 → 64
imprime R7 → 00000111 00000000 → 5
```

imprimec RZ

Prints the Unicode character of the value stored in the registry Z

Example

```
R2 == 72
imprimec R2 → 00001010 00000000 → H
```

valor RZ VALUE

Sets the RZ value to VALUE

Example

```
R2 == 0
valor R2 40→ 00010010 00101000
imprime R2 → 00000010 00000000 → 40
```

borra RZ

Delete the value stored in the registry Z

Example

```
R2 == 72
borra R2 → 00011010 00000000
imprime R2 → 00000010 00000000 → 0
```

suma RZ VALUE

Sum VALUE to the value stored in the registry Z

Example

```
R2 == 72
suma R2 5 → 00100010 00000101
imprime R2 → 00000010 00000000 → 77
```

resta RZ VALUE

Substract VALUE to the value stored in the registry Z

Example

```
R2 == 72
resta R2 4 → 00101010 00000100
imprime R2 → 00000010 00000000 → 68
```

salta POSITION

Continues the execution on the line POSITION

Example

```
salta 15 → 00110000 00001111
```

saltasi0 RZ POSITION

Continues the execution on the line POSITION if RZ value is 0

Example

```
saltasi0 R7 15 → 00111111 00001111
```

Functions

generar(intrucciones) ⇒ `String`

Receives code as parameter and converts it into binary

calcularBinario(num) ⇒ `num`

Converts a decimal number into binary number

ejecutar(maquina)

Excutes the binary code and write its result in txtEjecucion

calcularDecimal(bin) ⇒ `number`

Converts a binary number into decimal

generar(intrucciones) ⇒ `String`

Generar Receives code as parameter and converts it into binary

Kind: global function
Returns: `String` - Binary code

Param	Type	Description
intrucciones	`String`	Code that is going to be converted into binary instructions

calcularBinario(num) ⇒ `num`

Converts a decimal number into binary number

Kind: global function
Returns: `num` - num converted into binary

Param	Type	Description
num	`num`	Decimal number which is going to be converted

ejecutar(maquina)

Excutes the binary code and write its result in txtEjecucion

Kind: global function

Param	Type	Description
maquina	`String`	Binary code that is going to be executed

registroDec `{String}` - Contains the decimal registry
valorDec `{String}` - Contains the decimal value

calcularDecimal(bin) ⇒ `number`

Converts a binary number into decimal

Kind: global function
Returns: `number` - bin in decimal

Param	Type	Description
bin	`String`	Binary number which is going to be converted