fabricOS Documentation

by click07

Installation

- Download Source from https://github.com/click07/fabric-os/fabricos.urcl
- Download a file of your liking from https://github.com/click07/fabric-os/

⚠️ The system can only run one file at a time as I haven't implemented a directory system yet

- Use Bram to Emulate https://bramotte.github.io/urcl-explorer

FabricIL – Programming for fabricOS

⚠️ There isn't any compiler for fabricIL -> .bin yet, so all machine code needs to be entered manually.

Syntax is:
`0xGGHH 0xJJKK`
G is the first operand
H is the second operand
J is the third operand
K is the OPCode

So for Example:

```
IMM R2 7
IMM R1 3
ADD R3 R1 R2
SYS EXIT 1
```

would be:

```
0x0207 0x0002
0x0103 0x0002
0x0301 0x0203
0x0001 0x0001
```

To translate the HEX Values to a .bin file use a tool like
https://tomeko.net/online_tools/hex-to-file.php

Instructions

⚠️ Instructions that are marked as gray are not implemented yet.

⚠️ This is incomplete.

OPCode	HEX	Name	Description	Operands
NOP	0x00	No OP	This does nothing.	
SYS	0x01	Syscall	Performs System Operation. Probably something I/O related.	SYSCALL, OP2, OP3
IMM	0x02	Immediate	Writes a value to a register.	REGISTER, VALUE
ADD	0x03	Addition	Adds two registers together, then stores it in a third.	DESTINATION, REGISTER1, REGISTER2
AND	0x04	And Operation	Performs AND Operation on two registers, then stores it in a third.	DESTINATION, REGISTER1, REGISTER2
NOR	0x05	Nor Operation	Performs NOR Operation on two registers, then stores it in a third.	DESTINATION, REGISTER1, REGISTER2
HLT	0x10	Halt	Halts the CPU.	

SYSCALLS

⚠️ Syscalls that are marked as gray are not implemented yet.

OPCode	HEX	Name	Description	Operands
EXIT	0x00	Exit	Exits the system with a provided exit code.	EXIT CODE
SET	0x01	Set System Variable	Sets variable to the value of a register and stores it.	VARIABLE, REGISTER
GET	0x02	Get System Variable	Reads variable and stores it in a register.	VARIABLE, REGISTER
CHAR	0x03	Char I/O	Outputs char from to console or reads a char and stores it in a register. The Program is paused until the char is read.	IN/OUT (1/0), REGISTER
NUMB	0x04	Number I/O	Outputs a number to the console from a register. Input is yet to be implemented	IN/OUT, REGISTER
NEWL	0x05	New Line	Prints '\n' to the console	

Planned: Graphical and Note I/O