Compiler project for FLC exam
C - Wat

Aim of this project is to implement a compiler which transform a C source file into a text file (.wat), written using s-expressions.

Compiler will produce a set of files:
.wat -> textual version of WebAssembly code
.wasm -> binary version of WebAssembly code
.html -> html page to show result
.css -> small style file
.js -> javascript to instantiate a WebAssembly module

Building Instruction

Software requirements

This compiler need the following tools: Flex, Bison, Xdot (optional), WABT. Here is how to install them

```
// Install Flex (mandatory)
sudo apt-get install flex
// Install Bison (mandatory)
sudo apt-get install bison
// Install Xdot (optional)
sudo apt install xdot
// Install WABT (mandatory)
git clone --recursive https://github.com/WebAssembly/wabt
cd wabt
make
```

Installation process

```
// clone project
git clone https://github.com/gAllegr/C-Wat_compiler.git
cd C-Wat_compiler
```

```
// create compiler, will be saved into bin folder as compiler.ou
make
```

Commands available

Run compiler

Run compiler using command `make run`, it will ask a C source file as input. Output files will be saved into output_code folder.

Example:

```
$ make run
Enter C source code:
./example_programs/correct1.c
```

Clean output files

All previous compiled files could be easily removed by running `make clean`. It will delete immediately all files inside output_code folder.

Load output files to local server

Compiled files can be copied to local server folder by running `make load`. This command will require root privilege!

Create a compiler image

If you have installed Xdot, an image with all states generated by compiler can be created by running `make image`. Image will be saved into project main folder.