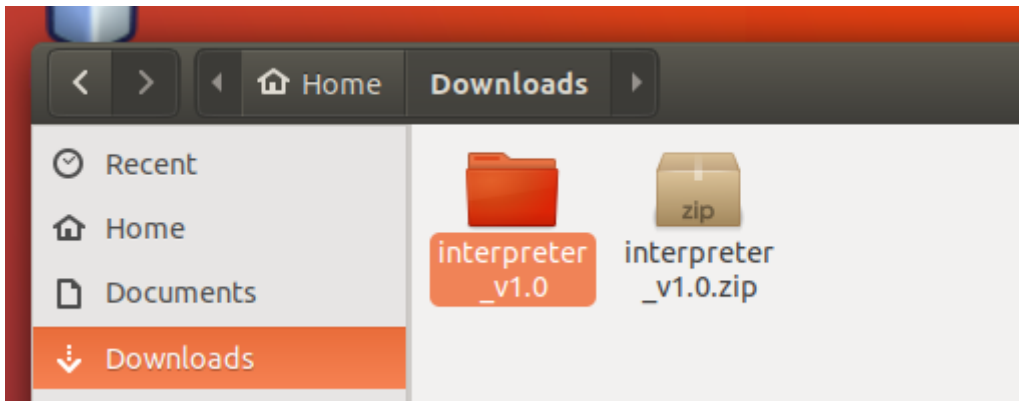


# Usage instructions

1. Download the project and open the main folder:



2. Open a shell in this folder:

```
nicola@nicola-VirtualBox: ~/Downloads/interpreter_v1.0
File Edit View Search Terminal Help
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$ ls -l
total 132
-rwxr--r-- 1 nicola nicola 12411 apr 10 11:41 ast.c
-rwxr--r-- 1 nicola nicola 9003 apr 9 21:20 ast.h
drwxr--r-- 4 nicola nicola 4096 apr 10 17:26 bin
-rwxr--r-- 1 nicola nicola 36883 apr 10 11:49 eval.c
drwxr--r-- 2 nicola nicola 4096 apr 10 12:00 examples
-rwxr--r-- 1 nicola nicola 14788 apr 10 17:59 funcs.c
-rwxr--r-- 1 nicola nicola 1513 apr 10 10:51 funcs.h
-rwxr--r-- 1 nicola nicola 5003 apr 10 18:13 lexer.l
-rwxr--r-- 1 nicola nicola 469 apr 10 18:42 Makefile
-rwxr--r-- 1 nicola nicola 10960 apr 10 18:13 parser.y
drwxr--r-- 2 nicola nicola 4096 apr 10 15:53 producedFiles
-rwxr--r-- 1 nicola nicola 267 apr 10 18:42 runDarwin.sh
-rwxr--r-- 1 nicola nicola 218 apr 10 18:42 runLinux.sh
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$
```

3. Build the project with the `make` command:

```
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$ make
./runLinux.sh
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$
```

4. Try interactive mode typing `./bin/interpreter`:

```
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$ ./bin/interpr
Welcome to subset JS interpreter!
> a = 2;
= 2
> for (i = 0; i < 3; i++) {
a = i * 2;
}
= 4
> a;
= 4
>
```

5. Use `quit` or `exit` to terminate interactive mode:

```
> a;  
= 4  
> quit  
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$
```

6. Try normal mode. A set of 12 examples is provided together with the interpreter. 10 examples are correct JS, while the other 2 present mistakes.

```
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$ ./bin/interpr examples/  
10_search_array.js      4_reverse_array.js  
11_insert_delete_array.js 5_fat.js  
12_update_array.js      6_reverse_string.js  
1_avg_array.js          7_error.js_  
2_max_min_array.js      8_error_func.js_  
3_ord_array.js          9_mediana_array.js
```

7. For example, in `5_fat.js` example you can calculate the factorial of a number in a loop. Digit 0 to exit the loop and the program. This example requires interactive input using `readline()`.

```
Defined function fat  
= 0  
Output <= 'Inserisci 0 per uscire dal loop'  
Input => 5  
Output <= 'Entering in fat() with: 5'  
Output <= 'Entering in fat() with: 4'  
Output <= 'Entering in fat() with: 3'  
Output <= 'Entering in fat() with: 2'  
Output <= 'Entering in fat() with: 1'  
Output <= 'Entering in fat() with: 0'  
Output <= 'Il fattoriale di 5 vale: 120'  
Input => 3  
Output <= 'Entering in fat() with: 3'  
Output <= 'Entering in fat() with: 2'  
Output <= 'Entering in fat() with: 1'  
Output <= 'Entering in fat() with: 0'  
Output <= 'Il fattoriale di 3 vale: 6'  
Input => 0  
Output <= 'Entering in fat() with: 0'  
Output <= 'Il fattoriale di 0 vale: 1'  
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$
```

8. You can try to see how error reporting and error recovery work in this interpreter. Note that for each error it is reported both the line and the position (as column numbers):

```
Output <= 'Il fattoriale di 0 vale: 1'
nicola@nicola-VirtualBox:~/Downloads/interpreter_v1.0$ ./bin/interpr examples/7_
error.js_
Defined array aa
Line 4:[0-2]: error: syntax error, unexpected NAME, expecting ';'
Defined array bb
= [ 10, 20, 30 ]
Output <= ' 10'
Output <= ' 20'
Output <= ' 30'
Line 8:[0-1]: error: Semantic error. Accessing array out of range
Output <= ' 0'
Line 11:[10-11]: error: Semantic error. Accessing array out of range
= 0
Line 14:[6-11]: error: Lexical error. Unterminated string: 'ciao'
Line 17:[0-2]: error: Lexical error. Identifier name: '2a' starts with a number.
= 20
= 'ciao'
Line 22:[0-3]: error: syntax error, unexpected NAME
= 'i'
Line 22:[12-13]: error: Semantic error. 'str' is string, invalid operation
= 0
Line 25:[3-5]: error: syntax error, unexpected NAME
= 1
Line 28:[3-5]: error: syntax error, unexpected NUMBER
= 10
Line 34:[0-2]: error: syntax error, unexpected NAME
Defined array aa
Line 34:[21-22]: error: Semantic error. Trying to insert non-double element in a
rray. Forcing to 0.
= [ 10, 0, 20 ]
Line 37:[16-17]: error: Semantic error. Trying to make push() of non double elem
ent in array. Forcing to 0.
= 4
Line 43:[0-1]: error: syntax error, unexpected '*'
Line 49:[0-2]: error: Lexical error. Unclosed comment
Found: 14 errors
```