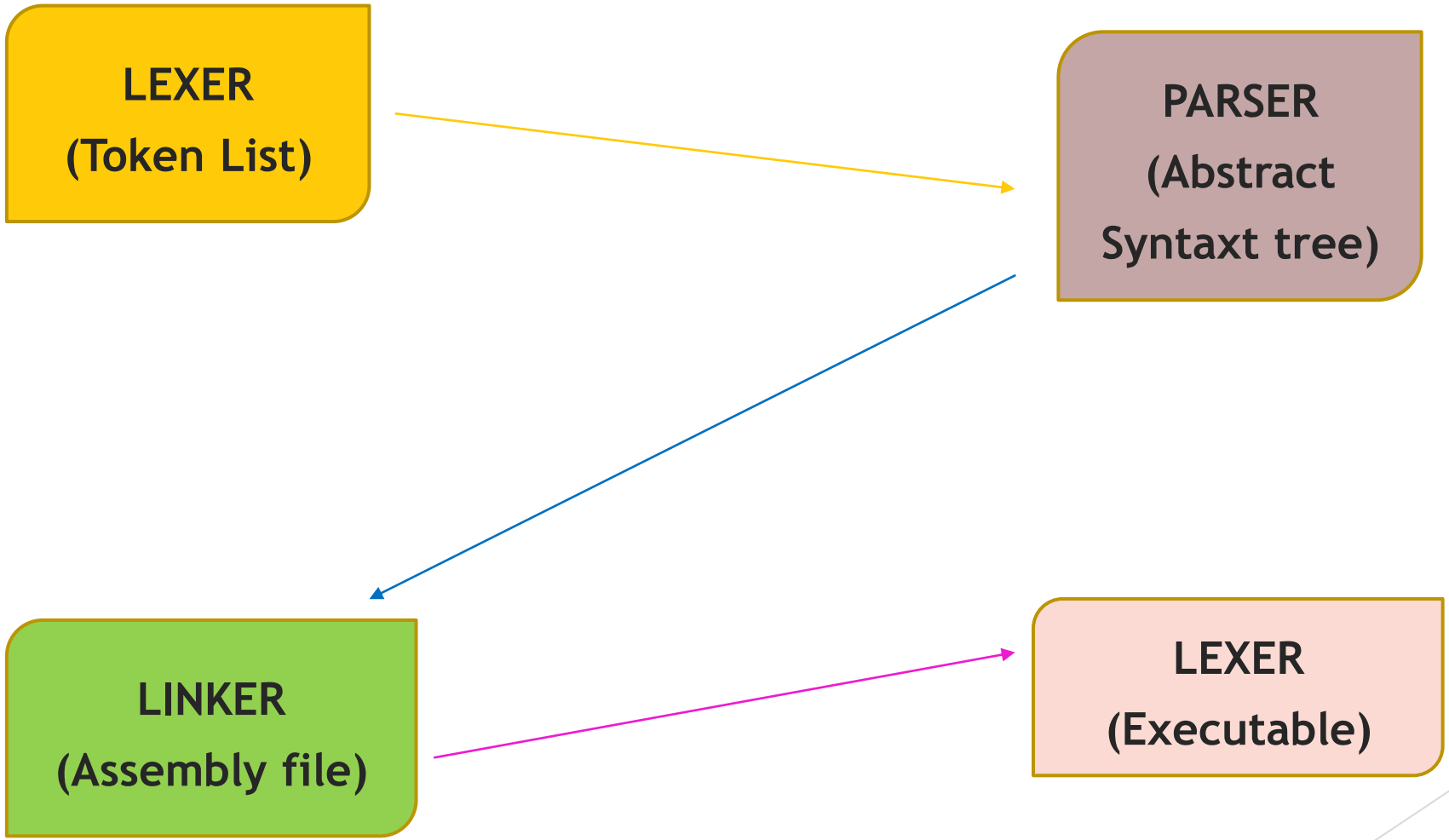
Gold Compilers: Compiler “Foxy”

First stage

Integrants:

- García Felipe Miguel (Project Manager)
- Felix Flores Paul Jaime (Tester)
- SanJuan Aldape Diana Paola (The System Integrator)

How is our compiler composed?



Lexer:

This integration will validate this:

- Validate that list of tokens.
- The output will be a list of atom strings tuples.
- If there is an error, a list of tuples with the token will be displayed, as well as the wrong column and row.

Parser:

- This integration will allow us to establish the following basic functionality:
- Generate an AST with the list of tuples created by the Lexer.
- If there is some error, it will display a list of tuples with the token generating the error, the column, and the row.

Code generator:

- This integration will allow us to establish the following basic functionality:
- Take the AST generated by the Parser to build the code in assembler, from the leaves to the root.
- The output will be a string with the representative code in assembler.

Linker:

- Linker: is a computer System program that takes one or more object files generated by a compiler or an assembler and combines them into a single executable file, library file, or another 'object' file

Stage one:

First delivery:

- Compile a C source code and return a integer when executes de .exe file.
- To achieve this objective, we will base ourselves on how to create a compiler according to Nora's documentation, as well as the tests that must be executed.

First Implentation:

```
{:type, :intKeyWord},#                  int
{:ident, :returnKeyWord},#              return
{:ident, :mainKeyWord},#                main
{:left_brace},#                         {
{:right_brace},#                        }
{:left_paren},#                         (
{:right_paren},#                        )
{:semicolon},#                          ;
############################ Segunda entrega ##
```

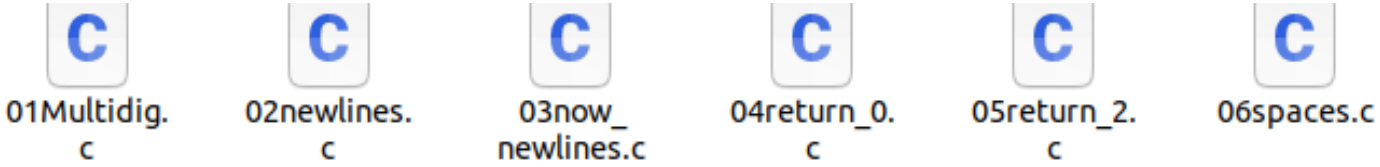
Test that the compiler must to do:

- You can compile several tests that we have, if you want it in the same way, but here we will only do one

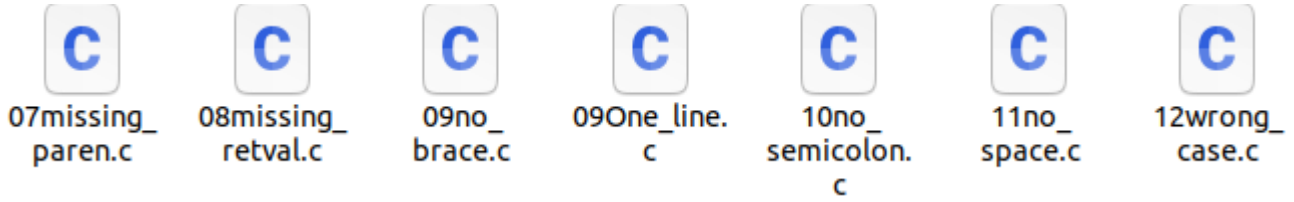
  You can see the examples valid e invalids in the

  folders:

Valids :



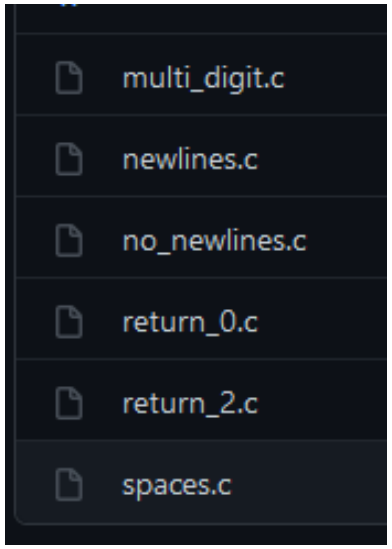
Invalids:



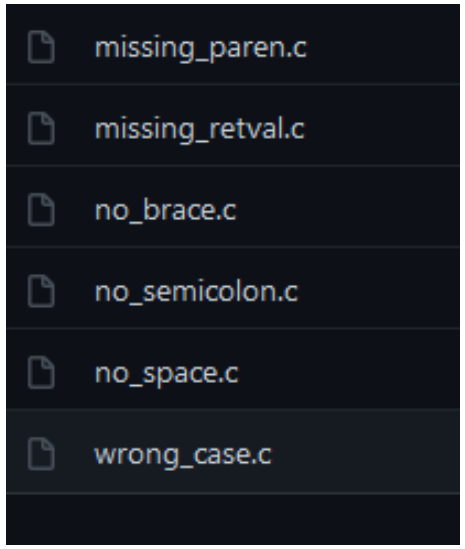
Test of Nora first stage:

https://github.com/nlsandler/write_a_c_compiler/tree/master/stage_1

- Valids:



- Invalids:



Example stage one:

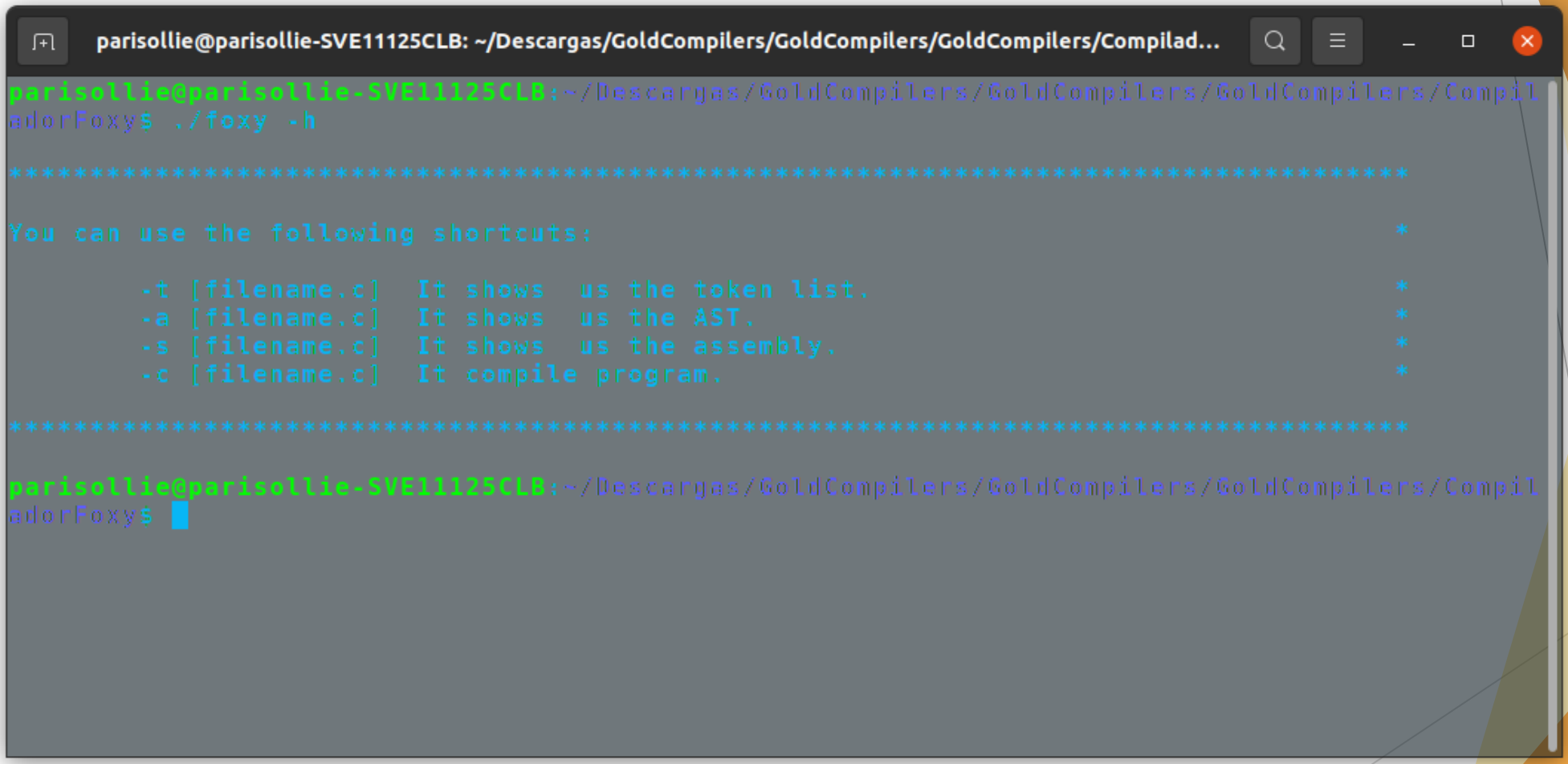
Valid example:

```
int main(){
    return 2;
    }
```

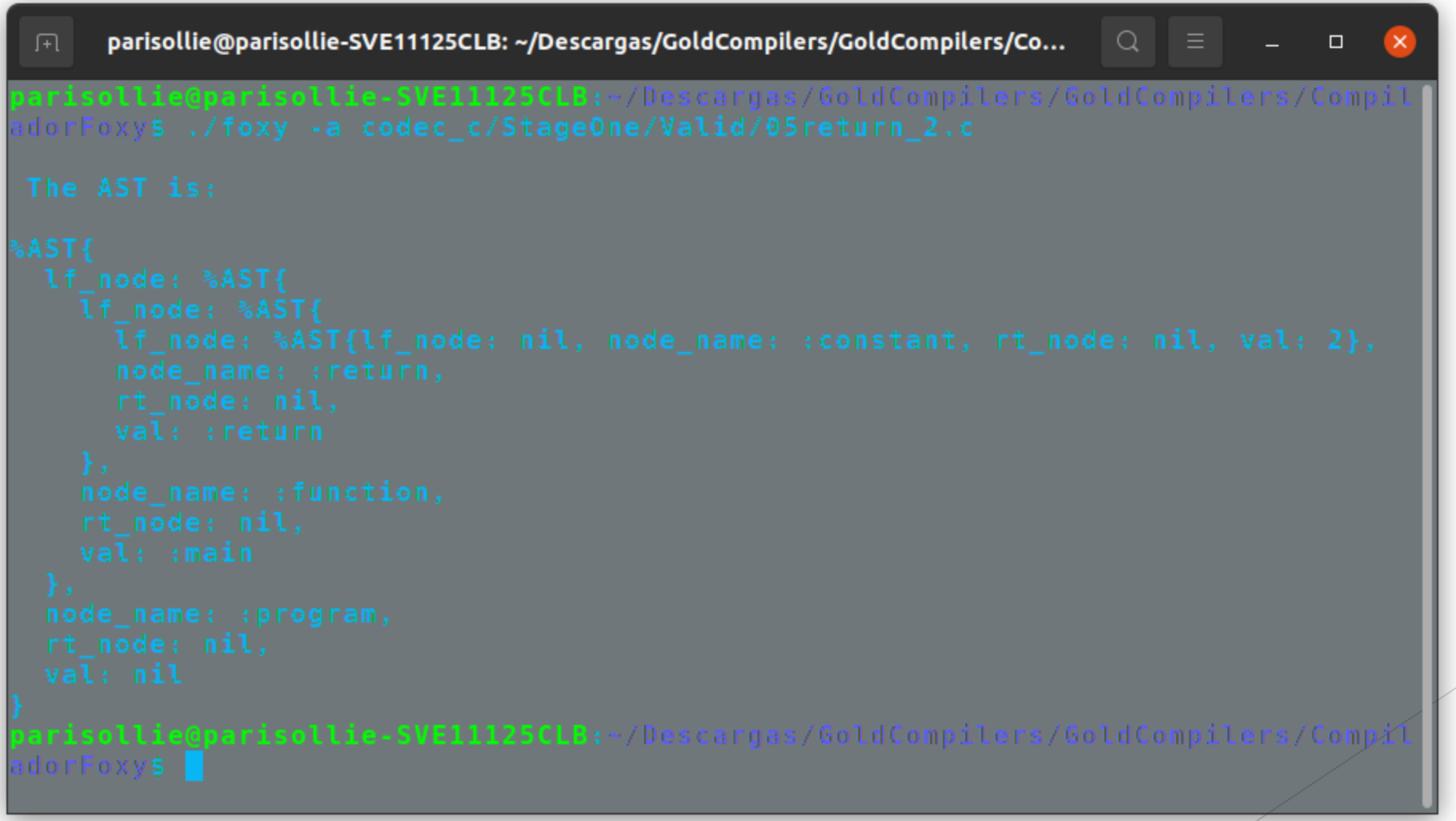
Invalid example:

```
int main(){
    return 2
    }
```

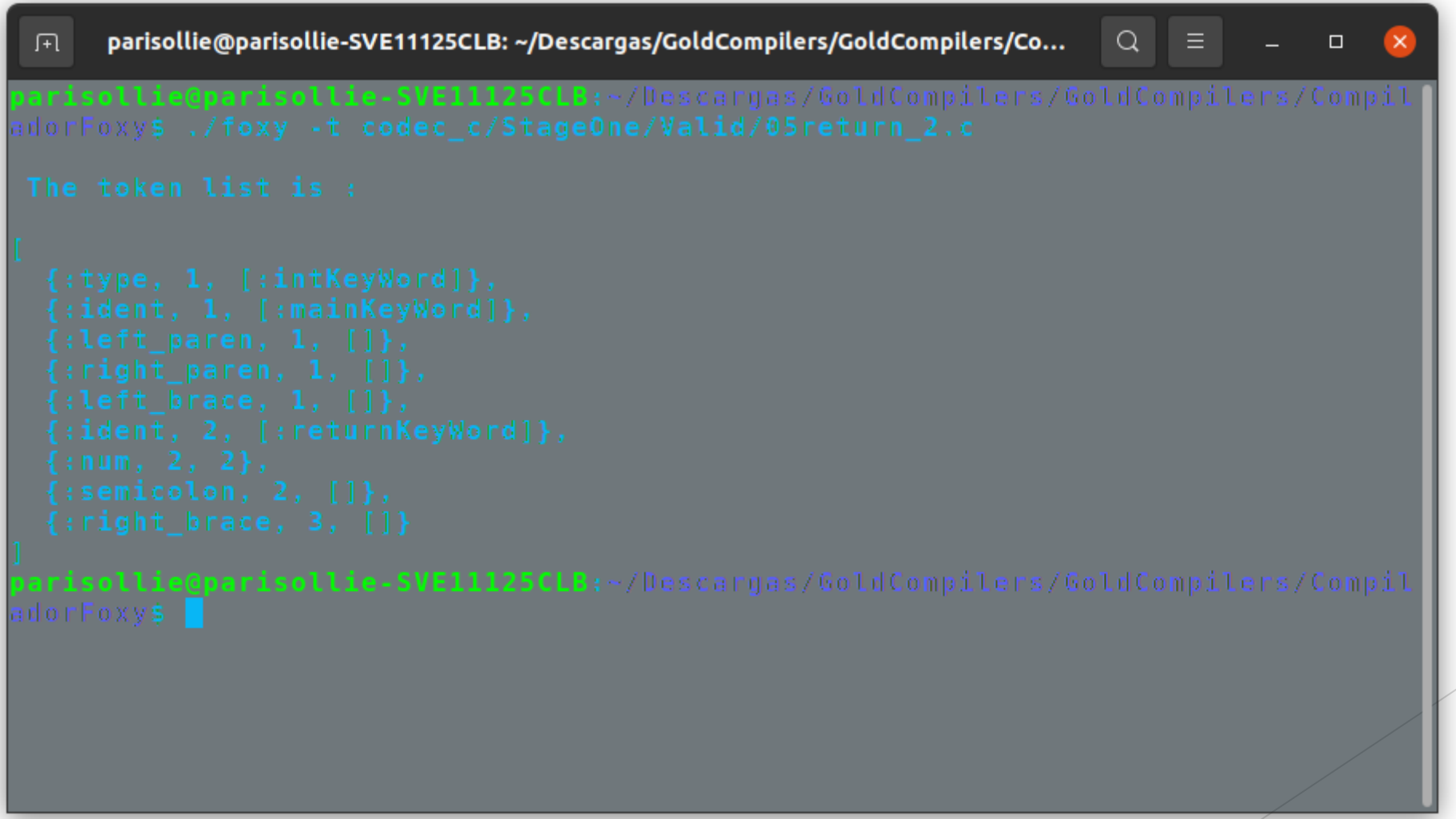
How to use the compiler Foxy with:



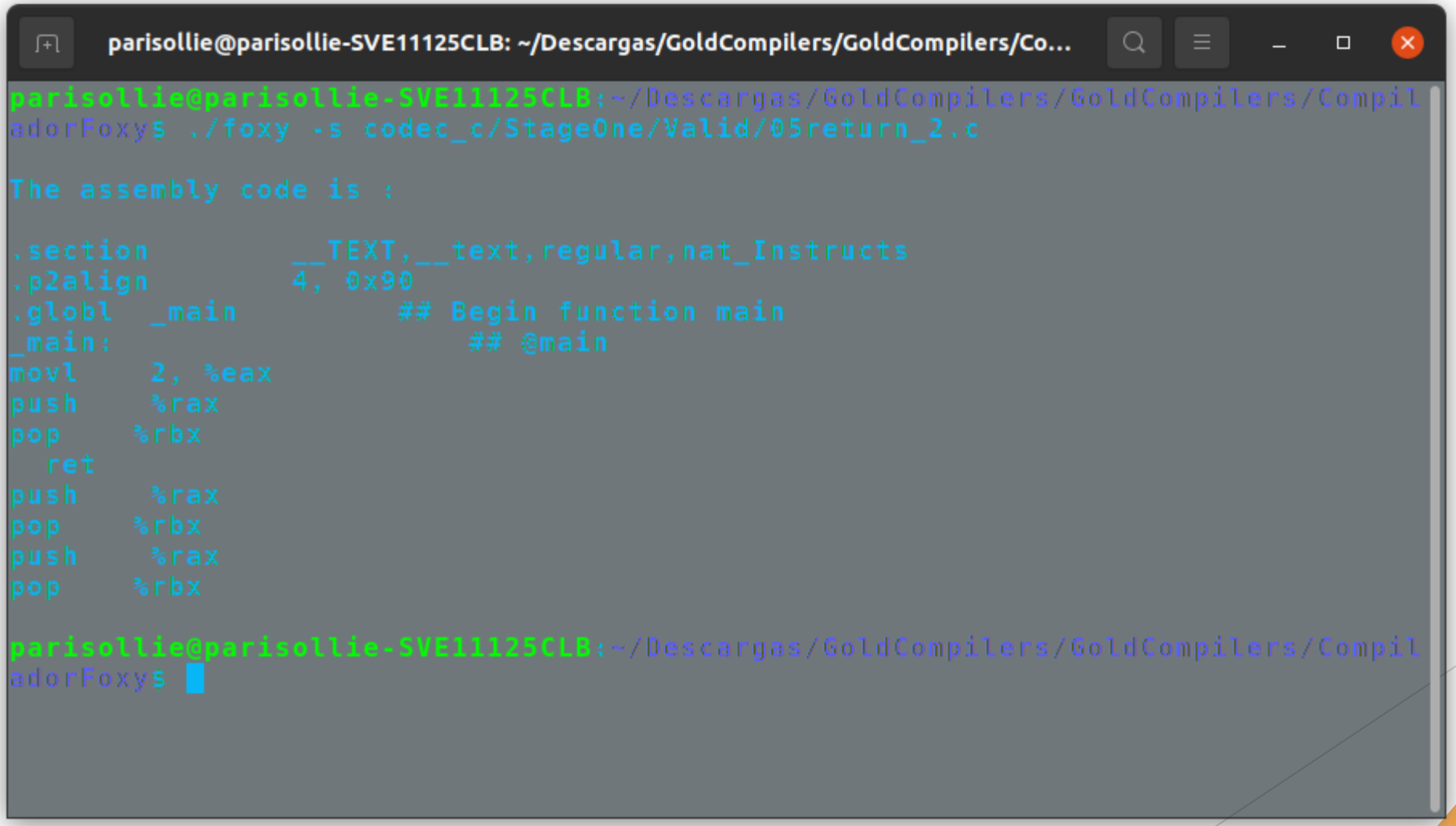
(-a)Development language must be a matching pattern to easily build an Abstract Syntax Tree (AST), however, phase I the right side's tree must be nil.



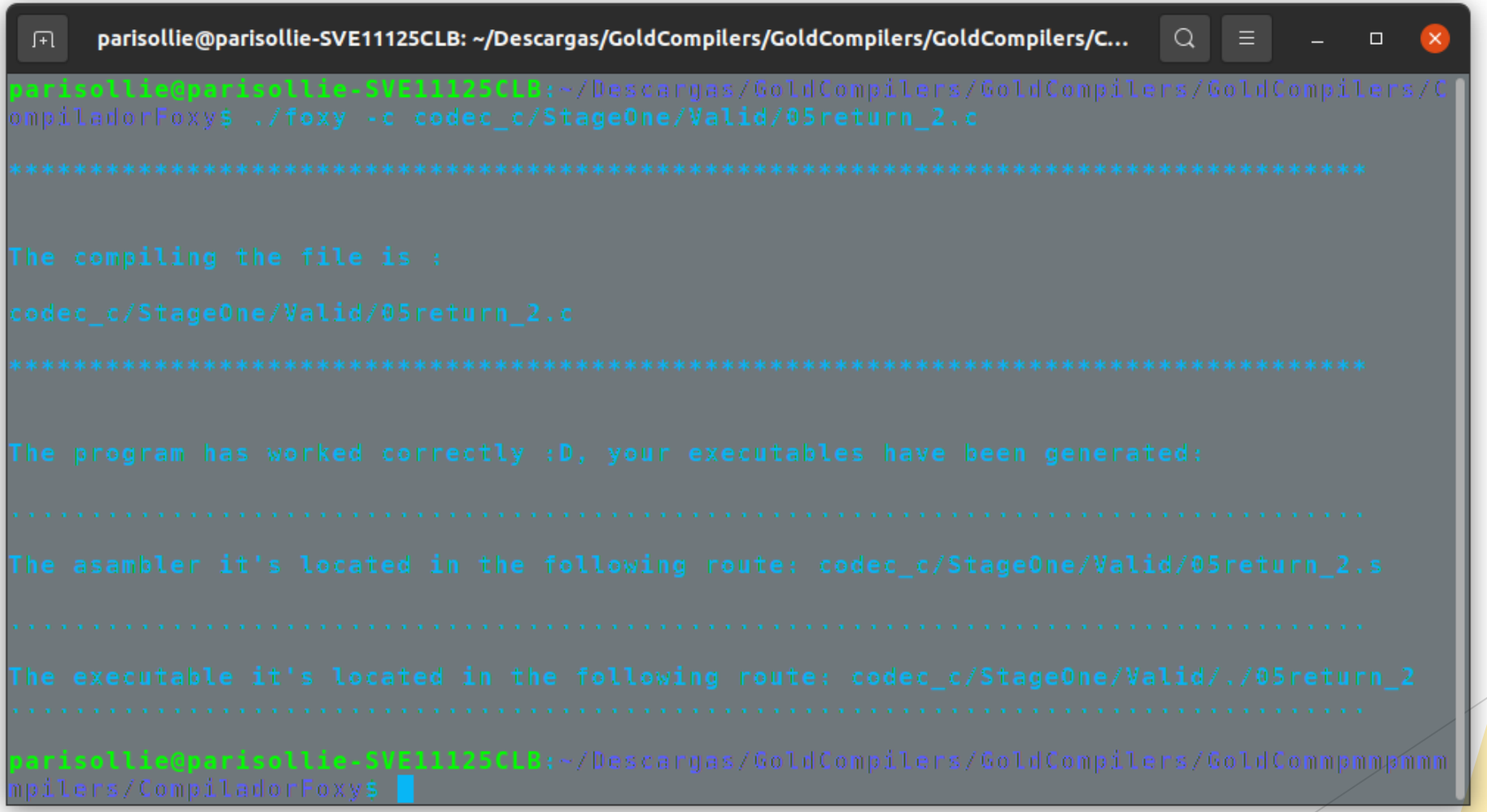
(-t)We show token's list form source code. Must check a relational couple to recognize every token.



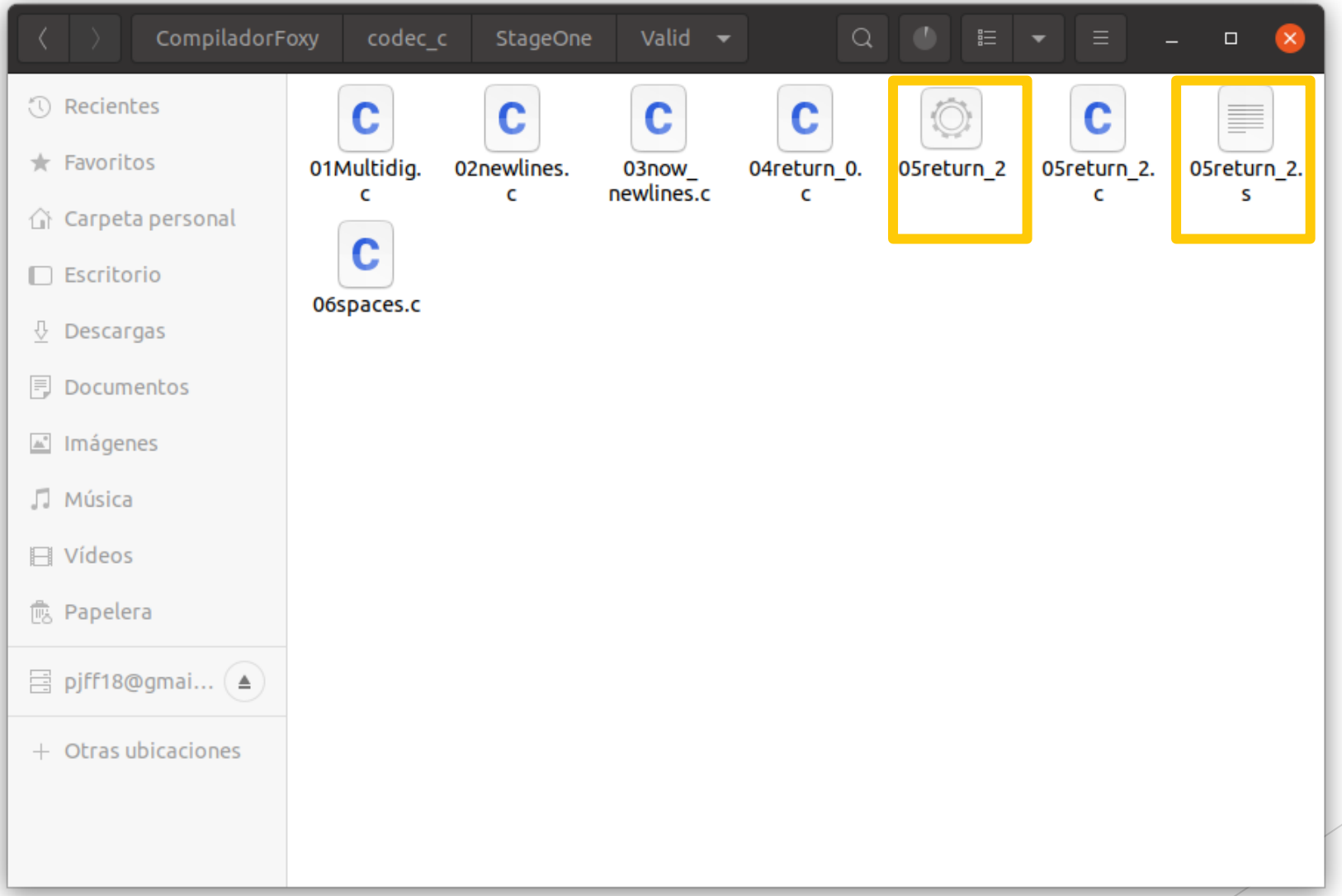
(-s)Assembly must write in 64-bits set instructions.
The assembly syntax must be a AT and T by default in GCC.



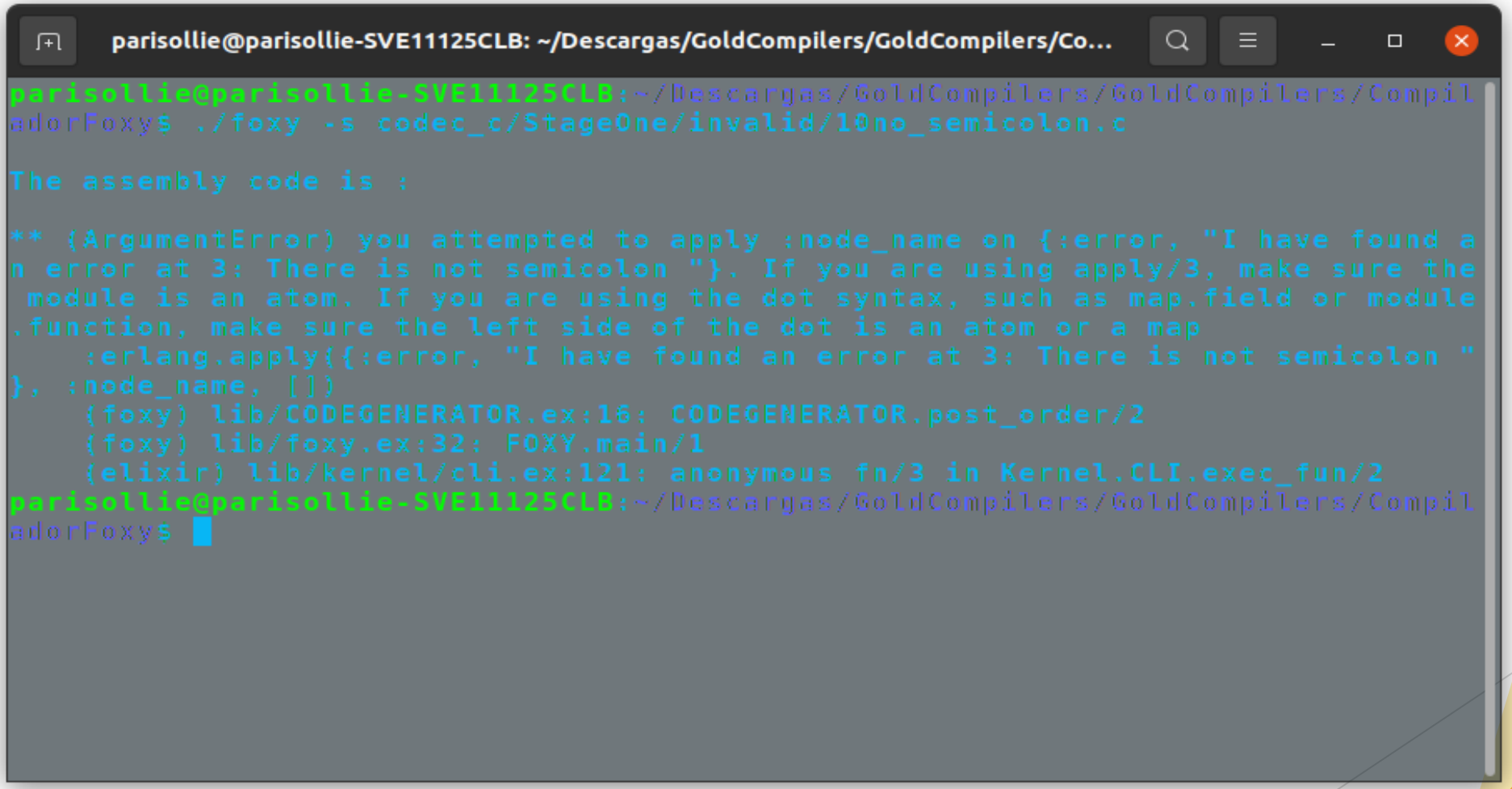
(-c) We get the assmbler and the executable:



It is generated in our folder:



Test Invalid:



Plan work:

Work plan: Gold Gompilers																	
Task				February				July								August	
				Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4					Week 1	Week 2
Requirements.																	
Client Requirements.																	
Read: Nora Sandler document.																	
Install elixir and read documentation.																	
First team meeting.																	
Stage 1: Lexer.																	
Project architecture definition.																	
Lexer code.																	
Stage 2: Parser.																	
Second team meeting.																	
Parser Code.																	
Stage 3: Code Generator.																	
x64 Instructions Set Review.																	
Code generator.																	
Stage 4: Tests.																	
Test building.																	
Final team meeting.																	
Documentation.																	
Deliverable.																	

- Thank you !