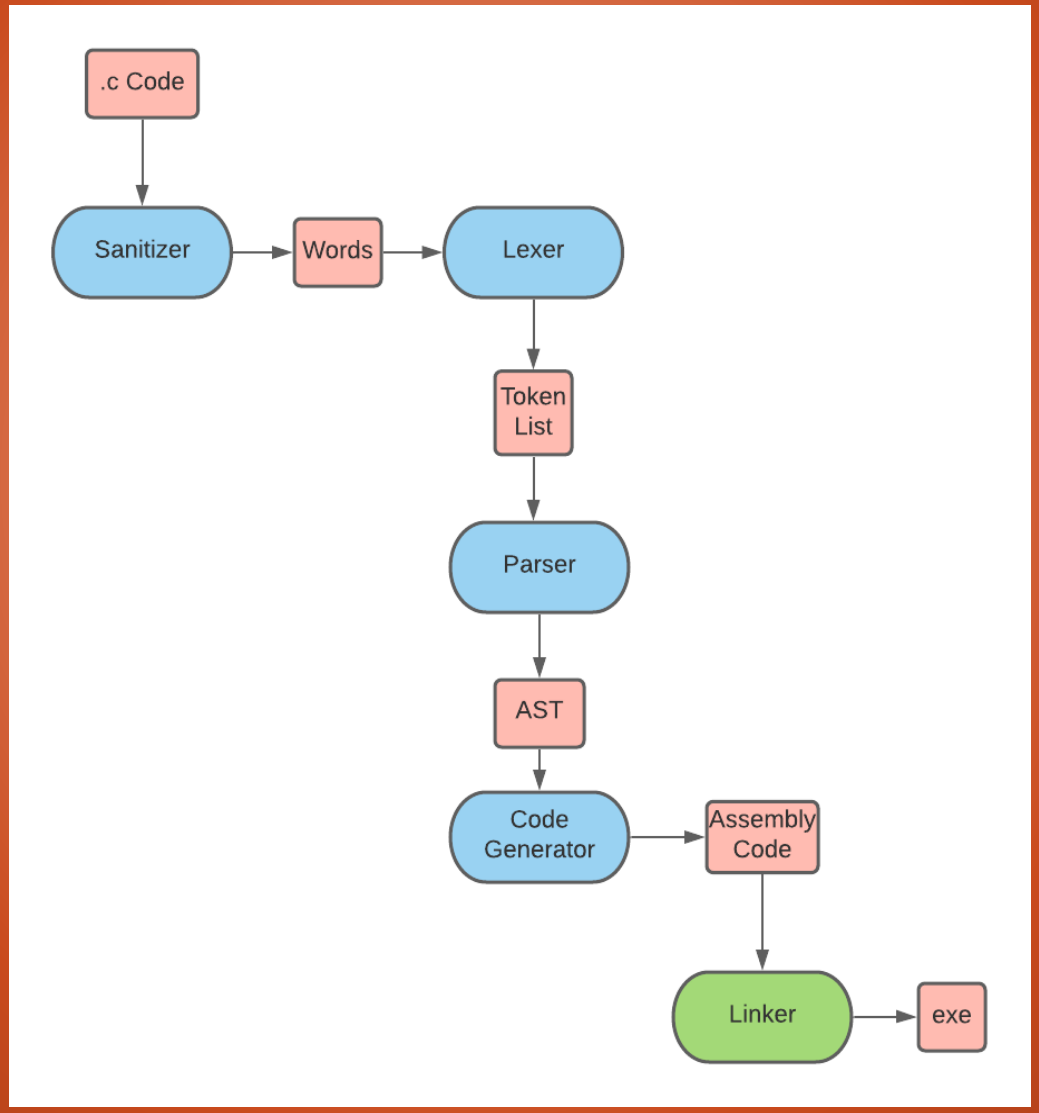
BRIGADA DE LOS AZTECAS.

COMPILER.

Compiler flow.



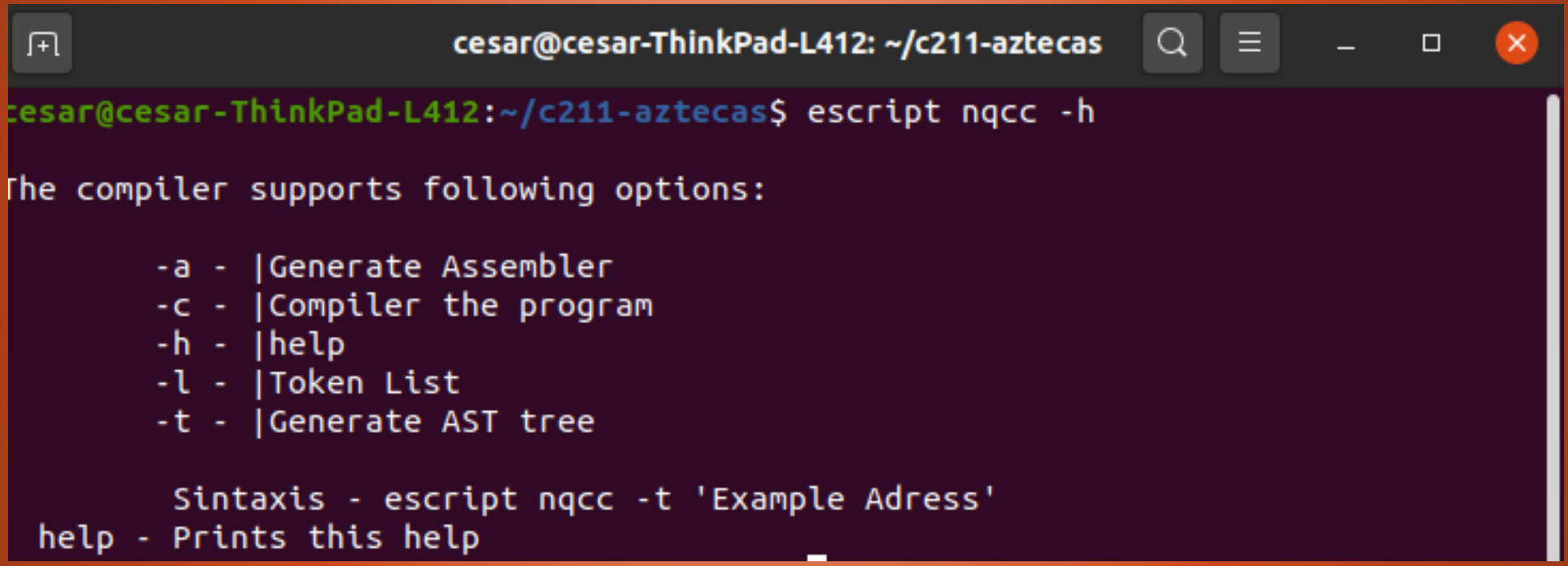
BA.

Important note.

For the implementation and execution of this compiler is very important have installed Elixir and gcc in our computer.

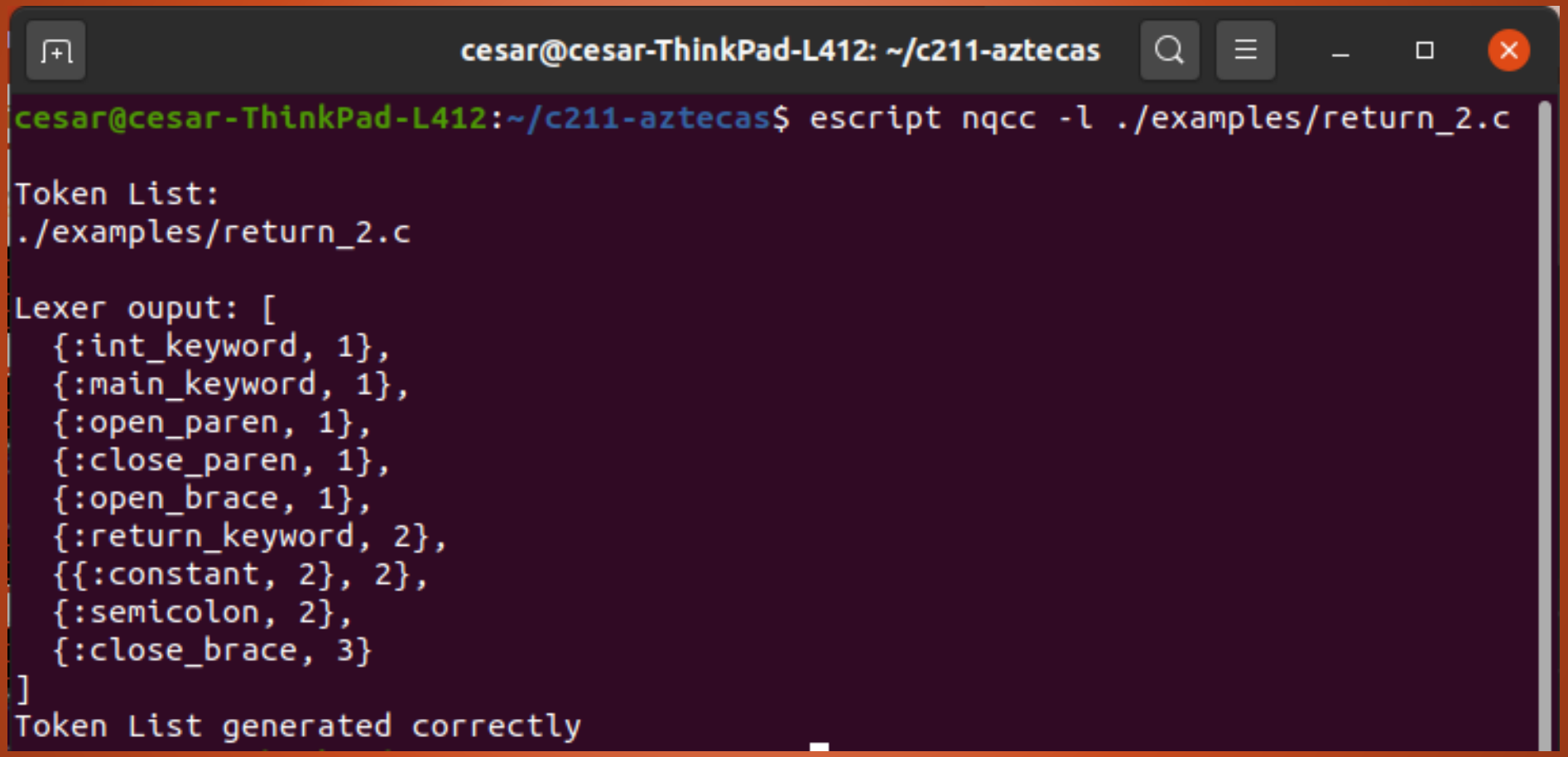
BA.

Aid flags.


cesar@cesar-ThinkPad-L412: ~/c211-aztecas
cesar@cesar-ThinkPad-L412:~/c211-aztecas$ escript nqcc -h
The compiler supports following options:
-a - |Generate Assembler
-c - |Compiler the program
-h - |help
-l - |Token List
-t - |Generate AST tree
Sintaxis - escript nqcc -t 'Example Adress'
help - Prints this help

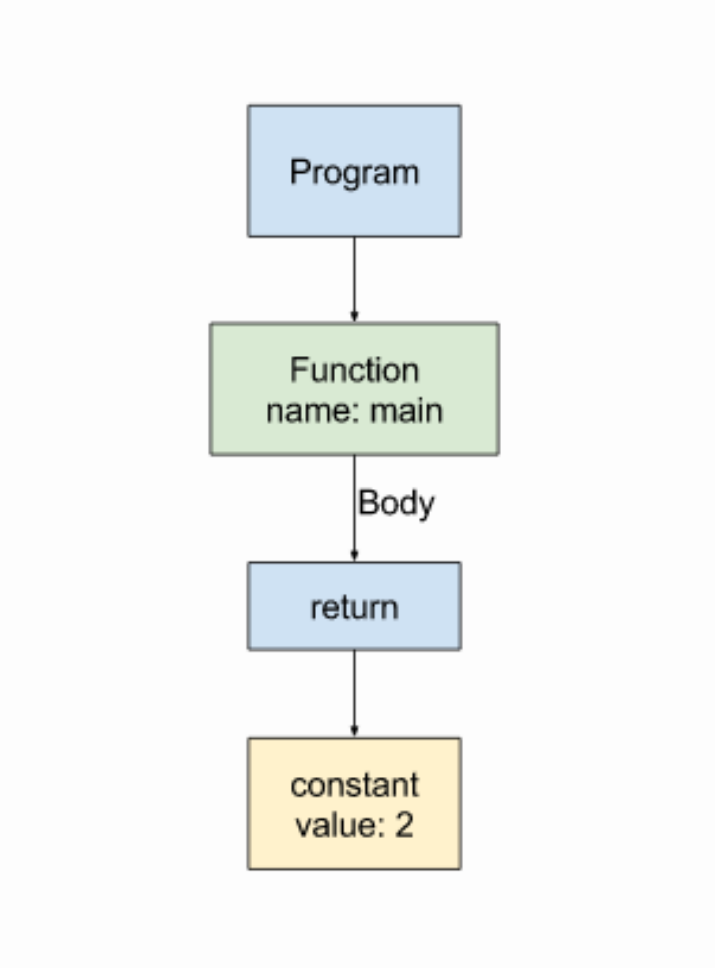
BA.

Token list.



BA.

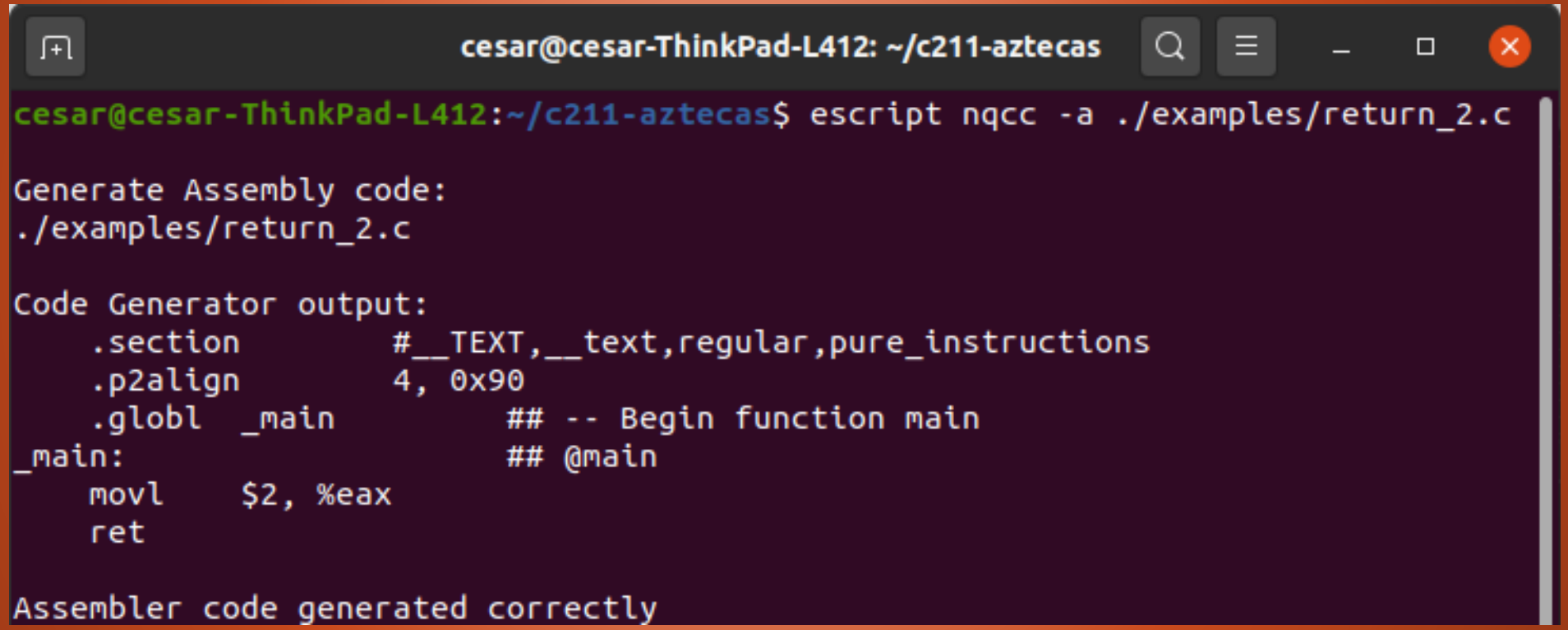
AST Tree.




```
Parser ouput: %AST{
  left_node: %AST{
    left_node: %AST{
      left_node: %AST{
        left_node: nil,
        node_name: :constant,
        right_node: nil,
        value: 2
      },
      node_name: :return,
      right_node: nil,
      value: nil
    },
    node_name: :function,
    right_node: nil,
    value: :main
  },
  node_name: :program,
  right_node: nil,
  value: nil
}
```

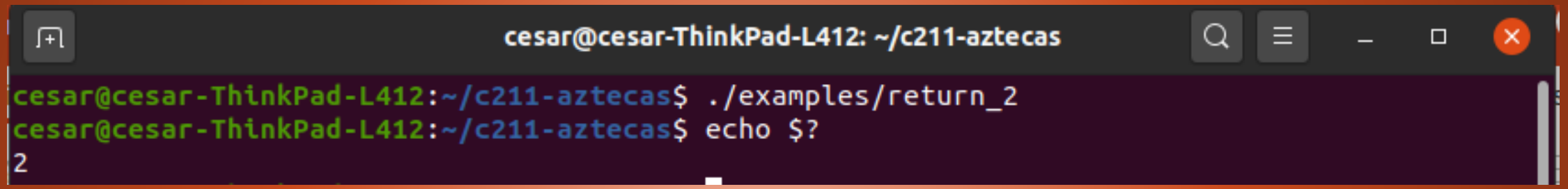
BA.

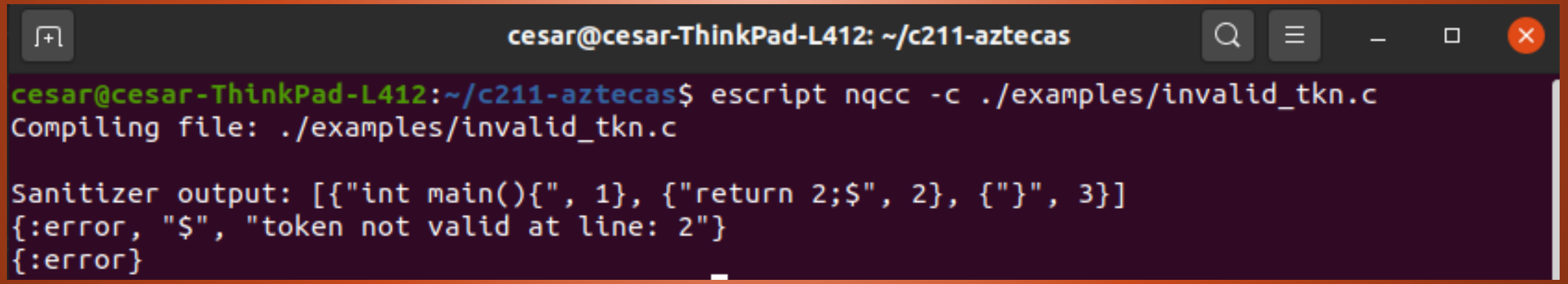
Assembler code generated.



BA.

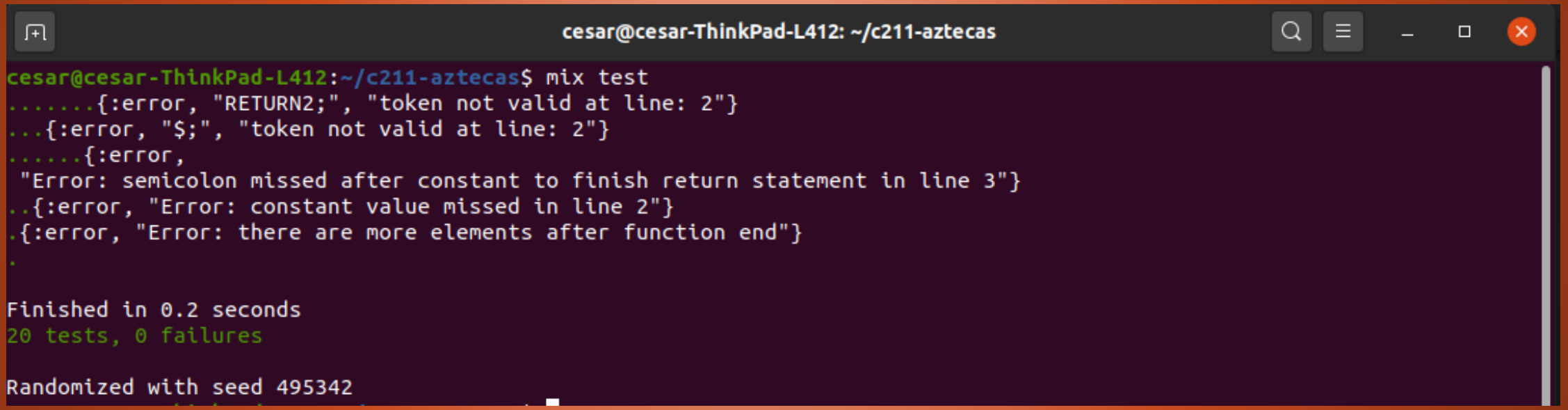
Test.


cesar@cesar-ThinkPad-L412: ~/c211-aztecas
cesar@cesar-ThinkPad-L412:~/c211-aztecas$ ./examples/return_2
cesar@cesar-ThinkPad-L412:~/c211-aztecas$ echo $?
2


cesar@cesar-ThinkPad-L412: ~/c211-aztecas
cesar@cesar-ThinkPad-L412:~/c211-aztecas$ escript nqcc -c ./examples/invalid_tkn.c
Compiling file: ./examples/invalid_tkn.c
Sanitizer output: [{"int main(){", 1}, {"return 2;$", 2}, {"}", 3}]
{:error, "$", "token not valid at line: 2"}
{:error}

BA.

Test.


cesar@cesar-ThinkPad-L412: ~/c211-aztecas
cesar@cesar-ThinkPad-L412:~/c211-aztecas$ mix test
.......{:error, "RETURN2;", "token not valid at line: 2"}
...{:error, "$;", "token not valid at line: 2"}
......{:error,
"Error: semicolon missed after constant to finish return statement in line 3"}
..{:error, "Error: constant value missed in line 2"}
.{:error, "Error: there are more elements after function end"}
.
Finished in 0.2 seconds
20 tests, 0 failures
Randomized with seed 495342

BA.

Test.

cesar@cesar-ThinkPad-L412: ~/c211-aztecas

```
cesar@cesar-ThinkPad-L412:~/c211-aztecas$ escript nqcc -c ./examples/return_2.c
Compiling file: ./examples/return_2.c

Sanitizer output: [{"int main() {", 1}, {"return 2;", 2}, {"}", 3}]

Lexer ouput: [
  {:int_keyword, 1},
  {:main_keyword, 1},
  {:open_paren, 1},
  {:close_paren, 1},
  {:open_brace, 1},
  {:return_keyword, 2},
  {{:constant, 2}, 2},
  {:semicolon, 2},
  {:close_brace, 3}
]

Parser ouput: %AST{
  left_node: %AST{
    left_node: %AST{
      left_node: %AST{
        left_node: nil,
        node_name: :constant,
        right_node: nil,
        value: 2
      },
      node_name: :return,
      right_node: nil,
      value: nil
    },
    node_name: :function,
    right_node: nil,
    value: :main
  },
  node_name: :program,
  right_node: nil,
  value: nil
}
```

BA.

Learned lessons.

- Elixir is a programming language very different to the others we have seen on the Faculty.
- Is very important to have a good communication with the client and with the team we are working.
- Is important a good management in the assignment tasks.
- With this way of telecommuting is helpful to know how to use a versions controller, in our case we work with GitHub.

BA.