

UNIT 1: INTRODUCTION TO LANGUAGE PROCESSORS

1.- Write which is the phase and module of the compiling process that would carry out the following functions:

- a) Assign a variable to the register 5.
- b) Identify loop as a label.
- c) Detect that in an assignment sentence, types are not compatible.
- d) Change $\text{ind} + 4*4$ by $\text{ind}+16$.
- e) Create the syntax tree.
- f) Detect that a variable has not been declared.

2.- Describe the structure of a compiler, explaining briefly each one of the modules. What does the intermediate code generation phase provide?

Solution

Exercise 1

- a) **Assign a variable to the register 5.**
Code generation
- b) **Identify loop as a label.**
Lexical Analysis
- c) **Detect that in an assignment sentence, types are not compatible.**
Semantic Analysis
- d) **Change $\text{ind} + 4*4$ by $\text{ind}+16$.**
Code Optimization
- e) **Create the syntax tree.**
Syntax Analysis
- f) **Detect that a variable has not been declared.**
Semantic Analysis

Exercise 2

See slides Unit 1