



Credit Hours System



Cairo University
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CMPN403 Project Simple Compiler

Submitted by:

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Project Tasks:

Member	Part
Reem Mohamed EL-Ayman	Writing the y.y file. (parser)
Ruba Ashraf	Writing the lex.l file (lexer)
Ayah Ayman	Writing symbolTable.h file
Ahmed Wael Hamdy	The parser logic and functions

Tokens:

1. **CONST:** const Keyword to define constants
2. **INT:** int Keyword to define Integer variables
3. **CHR:** char Keyword to define characters variables
4. **FLT:** float Keyword to define float variables
5. **EQUAL:** (=) operator used for assigning variables and constant
6. **PLUS:** (+) operator for adding variables
7. **MINUS:** (-) operator for subtracting variables
8. **SCOLON:** (;) operator for ending statements
9. **IDENTIFIER:** variables' name
10. **INTEGER:** integer value assigned to variable or constant
11. **FLOAT:** float value assigned to variable or constant
12. **CHARACTER:** character assigned to variable or constant

Production Rules:

- **program:** sentence program | epsilon
- **sentence:** assignment | declaration
- **declaration:** data_type IDENTIFIER SCOLON | data_type assignment | CONST data_type assignment
- **assignment:** IDENTIFIER EQUAL expr SCOLON
- **data_type:** INT | FLT | CHR
- **expr:** expr_element PLUS expr_element | expr_element MINUS | expr_element
- **expr_element:** INTEGER | FLOAT | CHARACTER | IDENTIFIER

Quadruples:

1. **MOV R1, R2: $R1 = R2$**
2. **ADD R1, R2, R3: $R1 = R2 + R3$**
3. **SUB R1, R2, R3: $R1 = R2 - R3$**

Running the Project and Test Cases:

There readme file explains how to run the project.

For each Testcase, there is a folder containing the test case file (test.txt) and the output assembly code (outputAssembly.txt) and errors if exists (errortest.txt).

To run a specific testcase go to y.y and in the main loop enter the file name you want to use a test case in variable testFile.