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| **Faculty of Engineering**  **Credit Hours System** |  | **Cairo University** |

**Compilers Project**

**Report**

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| **Name** | **ID** |
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**Project Files :**

1. **Lexer File :** Contain our tokens.
2. **Parser File :** Contain our grammar rules.
3. **Symbol Table :** Used to check the declared , initialized and used variables and their scope, also used to generate the Assembly code.
4. **Input file :** Contain the test case that is about to be tested.
5. **Run file :** Used to run the project and generate the output files.

**Output Files :**

1. **Output file :** Gives Successful if there is no errors , or contain the error and it’s line if exist.
2. **Assembly Code File :** Contains the corresponding Assembly code to the test case given in c.
3. **Variable Types :** Shows the type of each variable if it is used or initialized or not.

**List Of Tokens :**

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| --- | --- |
| **TOKEN** | **SYMBOL** |
| PLUS | + |
| MINUS | - |
| MULTIPLY | \* |
| DIVIDE | / |
| ASSIGN | = |
| AND | && |
| OR | || |
| NOT | ! |
| INC | ++ |
| DEC | -- |
| PLUSEQUAL | += |
| MINUSEQUAL | -= |
| MULTIPLYEQUAL | \*= |
| DIVIDEEQUAL | /= |
| PRINT | print |
| INT | int |
| CHAR | char |
| STRING | string |
| BOOL | bool |
| CONST | const |
| TRUE | true |
| FALSE | false |
| GREATERTHAN | > |
| LESSTHAN | < |
| GREATERTHANOREQUAL | >= |
| LESSTHANOREQUAL | <= |
| EQUALEQUAL | == |
| NOTEQUAL | != |
| OBRACE | { |
| CBRACE | } |
| OBRACKET | ( |
| CBRACKET | ) |
| SEMICOLON | ; |
| WHILE | while |
| FOR | for |
| IF | If |
| ELSE | else |
| INTEGERNUMBER | [0-9]+ |
| FLOATNUMBER | [0-9]+\.[0-9]+ |
| TEXT | \".\*\" |
| CHARACTER | \'.?\' |
| Var\_Name | [a-zA-Z][\_a-zA-Z0-9]\* |

**Work Distribution :**

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| --- | --- |
| Marwan Medhat | Grammar Rules |
| Mohamed Haitham | Symbol Table |
| Ali Yasser | Semantic Error |
| Hazem Ayman | Lexer, Assembly code Generation |

And All of us cooperate during the integration phase to obtain this output.