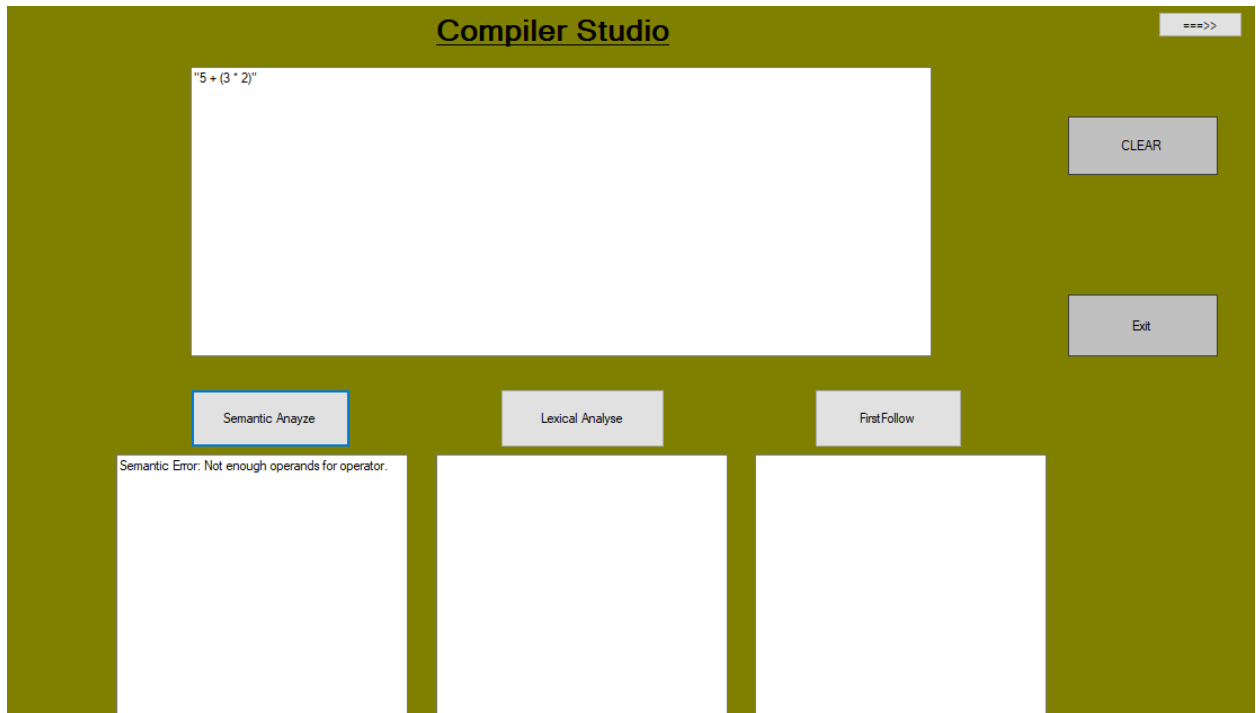# Q2: Function Details:

I.   **Semantic Analysis (PerformSemanticAnalysis):**

Parses the input expression into tokens.
Iterates through the tokens, identifying operators and operands.
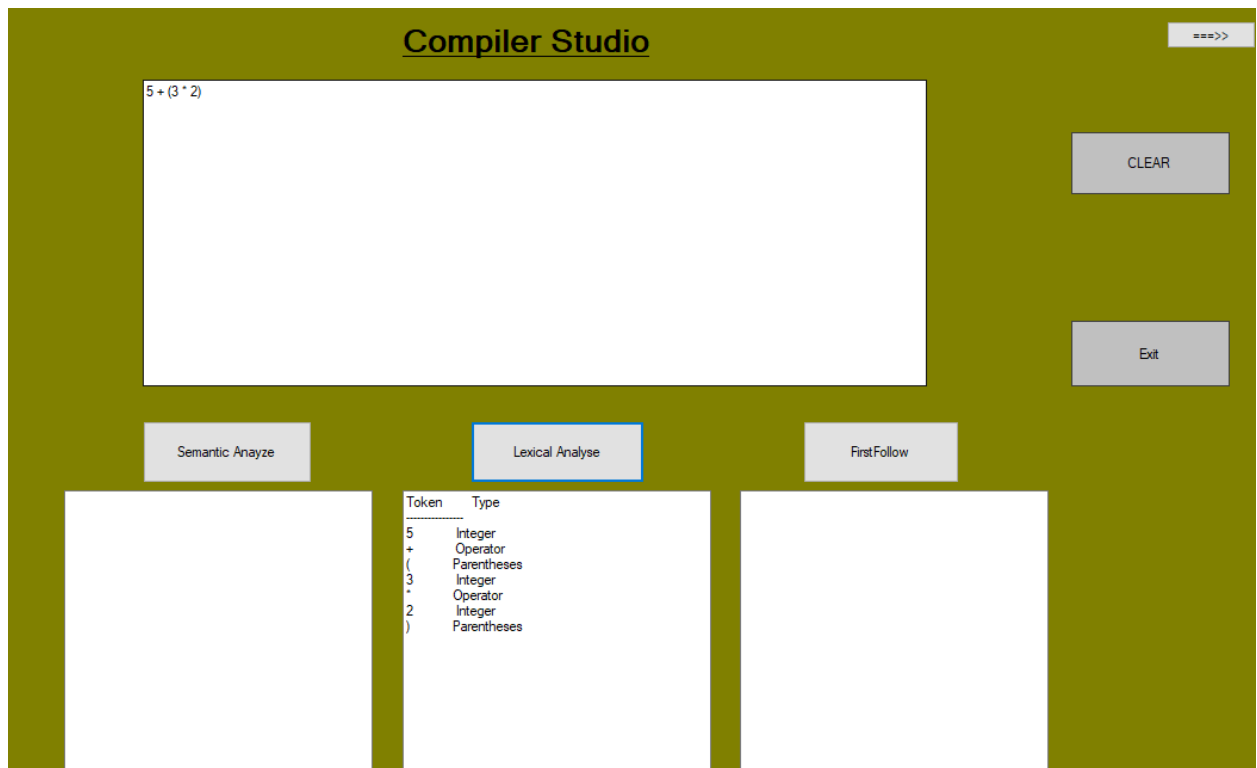Performs a basic check for the presence of enough operands for each operator.
Returns a result indicating whether the expression is semantically valid.

II. **Lexical Analysis (CreateToken, DisplayTokens):**

CreateToken classifies input words into different token types based on specific criteria.
DisplayTokens method displays the generated tokens in a user interface text box.

Compiler Studio

===>>

```
5 + (3 * 2)
```

CLEAR

Exit

Semantic Anayze   Lexical Analyse   FirstFollow

```
Token     Type
-------------------
5         Integer
+         Operator
(         Parentheses
3         Integer
*         Operator
2         Integer
)         Parentheses
```

III. First/Follow Sets (ComputeFirstSet, ComputeFollowSet):

ComputeFirstSet calculates the First set for each non-terminal symbol in the provided context-free grammar productions.
ComputeFollowSet calculates the Follow set for each non-terminal symbol in the provided context-free grammar productions.
The results are displayed in the application's text box.

Compiler Studio

S -> A B
A -> a | ε
B -> b | ε

CLEAR

Exit

Semantic Anayze

Lexical Analyse

FirstFollow

First Set:A: a, εB: bS: a, ε, bFollow Set:S: $A: b, $B:
$