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COURSE ASSESSMENT 2023 FOR GROUP ASSIGNMENT/PRESENTATION
CTE711S COMPILER TECHNIQUES

COURSE DETAILS

Course Code:	CTE711S	Semester:	1
Course Title:	Compiler Techniques		
Lecturers:	Coordinator:	Dr. A. A. Azeta	
Title of Assessment:	Development of a Mini Compiler software using Java		

SUBMISSION

Soft Copy:	• Students should divide themselves into groups of minimum 4 and maximum 5 per group. • The Assignment should be done as a group, but each student should submit a copy of the documentation in MS Word file on elearning. • Each file should be giving the name and student number (i.e. Steven-2322220911). • All Submissions of documentations must be done on e-Learning on or before 11h59, 28 April 2023. • Date of Group Assignment presentation/defence via Face-to-Face (F2F) Will be 1-5 May 2023.	
Hard Copy:	Not required (If required will be communicated)	
Late Submission:	Late submission will not be entertained without prior approval	
Multiple Hand-ins:	Multiple hand-ins before the due date is allowed but the latest version will be graded.	
Assessment	**20%**	

Further information

1. EXTRA MARKS WILL BE AWARDED FOR CRITICAL THINKING, CREATIVE IDEAS AND MOST PRACTICAL APPLICATION
2. PLEASE NOTE THAT INABILITY TO EXPLAIN YOUR CODE WILL LEAD TO ALL THE MARKS BEING PEGGED AT ZERO(SEE TEACHING PHYLOSOPHY IN COURSE OUTLINE).
3. PLAGARISM WILL NOT BE TOLORATED AND HENCE IF ASSIGNMENTS ARE COPIED OR SHARED, THEN ALL STUDENTS INVOLVED ARE DISQUALIFIED.

GROUP ASSIGNMENT DETAILS

The Program below is written in V language to find the summation and multiplication of 3 numbers, And also calculate and print out temp.

```
BEGIN
INTEG num, numm, nummm, summation, multi
LET num = 5%2
LET numm = num -/ nummm
INPUT num, numm, nummm
temp = <s/t>*h - j / w - d +* q / y *% a + c - $&;
summation = num + numm +nummm
multi = num * numm *nummm
WRITE  summation, multi
WRITEE temp;
END
```

Note the following conditions in the above program:

- Words in capital letters are **Keywords**
- Words in small letters are **Identifiers**
- +, /, *, - are **Operators**
- Equals =, and semi colon ; are **Symbols**
- Any string must contain: **Keywords, Identifiers, Operators, or Symbols**
- Symbols such as: %, $, &, <, > $, %, !, ; , not allowed and would give **Semantic error**
- Two operators must not be combined such as: +* not allowed and would give **Syntax error**, same with other operators that are combined, for example -/, */, *+
- Semi colon ; at the end of a line not allowed and would give **Syntax error**
- Numbers 0,1 to 9 are not allowed and would give **Syntax error**
- The acceptable keywords are: BEGIN, INTEG, REAL,INPUT, WRITE, END.
- Misspelling in the keywords such as RAEL, WRITEE not allowed and would give **Semantic error**

(1) Write a Java program that will go through the following stages of compiler to translate the above program (iteratively) - line by line.

(2) Write a Java program that will go through the following stages of compiler to translate the above program (iteratively) – all at once.

STAGES OF COMPILER

- Lexical Analysis
- Syntax Analysis
- Semantic Analysis
- Intermediate Code Representation
- Code Optimization
- Code Generation