**Compiler Design and Construction**

Project (Phase-1) Spring (2024)

Submission Before: 6:00 PM - 08-04-2024

(Late will be penalty of deduction of 2 absolute marks per day)

***CLO: <1> Bloom Taxonomy Level: <Apply>***

**Objective:**

The objective of this assignment is to design a lexical analyzer for a simplified version of the PHP programming language. The lexical analyzer should be capable of tokenizing input PHP code into lexical units, focusing on essential constructs and omitting complexities, using a transition table-based approach.

**Language Features:**

The mini PHP language includes basic constructs such as variables, arithmetic operations, conditional statements (if), loops (while), and multiline comments.

Detailed specifications for each lexical unit are provided below.

**Lexical Units:**

Keywords: if, while.

Identifiers: Alphanumeric strings starting with a $.

Literals: Integer numbers, string literal enclosed in single quote.

Operators: Assignment operator (=), comparison operators (==, !=)

punctuations: ;, (, ), {, }

Comments: Multiline comments enclosed between /\* and \*/

**Submission Requirements:**

1. Design DFA to handle above mentioned lexical units.
2. Design the transition table to handle transitions between different states based on input characters and the current state of the machine.

Ensure that the lexical analyzer correctly tokenizes input PHP code according to the provided specifications using the transition table-based approach.

# Rules:

1. This is an individual assignment. Each student has to submit his/her assignment work.
2. Group discussion is allowed but don’t share code and other part of assignment with other student.
3. Plagiarism is not tolerable in any of its form. Minimum penalty would be **ZERO** marks in the Assignment/ Project module.

# Evaluating Criteria:

1. All points discussed in the class related to scanner implementation should reflect in the assignment.
2. Application should not do which is not supposed to do.

# Tools:

MS – WORD or Microsoft Visio, Excel