## **CSL302: Compiler Design**

## Lab-6 (Syntax Analysis)

Due Date: 5-Sept-2025

### Instructions:

- 1. Prepare a zip file and upload your solutions on canvas
- 2. Include a readme file

# Task-1: Execute the demo files of symbol table and the yylval codes

Download the demo lex and yacc files of the symbol table and yylval codes, which were discussed in the class. Execute them and make sure you get the expected output.

### Task-2: Writing Custom Syntax Analyzer

Extend the syntax and lexical analyzers that you have implemented in the Lab-5 with the following statements.

- a. if-then
- b. if-then-else
- c. if-then-elseif
- d. switch case
- e. while loop
- f. do-while loop.

The syntax for each of them is listed below.

**STMTS:** is a single or multiple statement, where each statement can be any of the statements listed from (a) to (f) along with the simple statement as mentioned in Lab-5.

```
BLOCK: {STMTS}
```

# if-then:

if (EXP) then BLOCK

## if-then-else:

if (EXP) then BLOCK else BLOCK

#### if-then-elif:

if (EXP) then BLOCK elif (EXP) BLOCK else BLOCK

#### Switch case:

```
SWITCH '(' EXP ')' '{' case_list '}'
```

case\_list can contain one or case statements. Where each case\_statement has the following syntax CASE NUMBER ':' statement\_list. There is no Default case. A number can be any integer.

## while loop:

while (EXP) BLOCK

## do-while loop:

do BLOCK while (EXP);