



# LAB REPORT

## CSE332: Compiler Design Lab

02

[Report Number]

Topic: Write a Flex program to recognize the following types of strings:

- Strings that consist of one or more occurrences of 'x'.  $[x+]$
- Strings that consist of one or more 'x' followed by one or more 'y'.  $[x+y+]$
- Strings that match exactly 'x', 'y', 'z' in that order.  $[xyz]$

Submitted To

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Experiment No: 02		Mapping: CO1 and CO2
Experiment Name	Write a Flex program to recognize the following types of strings: <ul style="list-style-type: none"> <li>❖ Strings that consist of one or more occurrences of 'x'. [x+]</li> <li>❖ Strings that consist of one or more 'x' followed by one or more 'y'. [x+y+]</li> <li>❖ Strings that match exactly 'x', 'y', 'z' in that order.[xyz]</li> </ul>	

**Experiment Details:****Lex Code:**

```

/*Defination section*/
%{
#include <stdio.h>
%}

/* Rules Section */
%%
x+ {
    printf("Matched pattern [x+]: %s\n", yytext);
}
x+y+ {
    printf("Matched pattern [x+y+]: %s\n", yytext);
}
xyz {
    printf("Matched pattern [xyz]: %s\n", yytext);
}
. {}
%%

int main() {
    yyin = fopen("input.c", "r");
    yylex();
    return 0;
}

int yywrap() {
    return 1;
}

```

Input.c File:

x  
xx  
xy  
xxyy  
xyz  
xyzzz

**Obtained Output:**

E:\DIU_ACADEMIC\FALL 2025\CSE332 Compiler Design Lab\Lab Work\LabReport2>a.exe Matched pattern [x+]: x	Desired Output?
Matched pattern [x+]: xx Matched pattern [x+y+]: xy Matched pattern [x+y+]: xxyy Matched pattern [xyz]: xyz Matched pattern [xyz]: xyz	YES
E:\DIU_ACADEMIC\FALL 2025\CSE332 Compiler Design Lab\Lab Work\LabReport2>	

**Observation/ Comments:**

1. The program correctly recognizes strings matching [x+], [x+y+], and [xyz].
2. Inputs like xx, xxyy, and xyz are identified accurately; others are ignored.
3. Regular expressions are used effectively for pattern matching.

**Appendix A:** Course Outcomes, Complex Engineering Problems (EP) and Complex Engineering Activities (EA) Addressing.

**Table: CSE312 Course Outcomes (COs) with Mappings**

COs	CO Statements	POs	Learning Domains	Knowledge Profile	Complex Engineering Problem	Complex Engineering Activities
CO1	Demonstrate a comprehensive understanding of fundamental database management concepts, including the relational data model, normalization techniques, and SQL basics.	PO1	C2 A2 P2	K2 K3 K4 K8	EP1 EP4	
CO2	Design, implement and optimize relational databases, incorporating advanced SQL queries, indexing techniques and query optimization strategies.	PO3	C3 A3 P3	K2 K3 K4 K6 K8	EP1 EP2 EP7	EA3
CO3	Understand and Analyze security measures, distributed database architectures and emerging trends in database management, demonstrating an understanding of the broader context and challenges in the field.	PO5	C4 A4 P3	K6	EP4	

**Table: Addressing CO (1 to 3), Knowledge Profile (K), Attainment of Complex Engineering Problems (EP):**

SN	Engineering Problem (EP) Definition	Attainment	CO	Justification (with Knowledge Profile)
01	EP1: Depth of Knowledge required	Yes/No	CO1, CO2	
02	EP2: Range of Conflicting Requirements	Yes/No	CO2	

03	EP4: Familiarity of Issues	Yes/No	CO1, CO3	
04	EP7: Interdependence	Yes/No	CO2	

**Table: Addressing CO's**

SN	COs	Attainment	Justification
01	CO1	Yes/No	These Lab activities attain CO1 by ..
02	CO2	Yes/No	N/A
03	CO3	Yes/No	These Lab activities attain CO3 by ..