Index

S. No.	Name of the Experiment	Page No.	Date of Experiment	Date of Submission	Remarks
1	Program to check if a string is keyword or not.	1	10/10/22	10/10/22	
2.	Program to check no. of lines and characters in a file	2	10/10/22	10/10/22	
3.	Program to identify comment	3	17/10/22	17/10/22	
4.	Program to calculate frequency of all characters.	4	17/10/22	31/10/22	
5	Program to count no. of operators in a file.	5	31/10/22	31/10/22	
6	Installation and setup of Codeblocks and Flex Gnuy.	6	14/10/22	14/11/22	
7	Lex program to identify valid phone number.	9	28/11/22	12/12/22	
8	Lex program to count vowels and consonants.	10	28/11/22	12/12/22	
9	YACC program to print Hello world.	11	10/1/23		
10	YACC program to recognize a string by a rule.	12	10/1/23		

Expt. No. _____ Date 10/10/22

Page No. 1

Program-1 → C program to check whether a given string is keyword or not.

```
#include<stdio.h>
#include<string.h>

int main(){
    int flag = 0;
    char kwd[32][10] = {"auto", "break", "case", "char",
    "const", "continue", "default", "do", "double", "enum",
    "extern", "float", "for", "goto", "if", "int", "long", "register",
    "return", "short", "signed", "sizeof", "static", "struct", "switch",
    "typedef", "union", "unsigned", "void", "volatile", "while"};
    char str[10];
    scanf("%s", str);
    for(int i=0; i<32; i++){
        if(strcmp(kwd[i], str)==0) flag=1
    }
    if(flag==1) cout<<"It is a keyword."<<endl;
    else cout<<"Not a keyword"<<endl;

    return 0;
}
```

while long

C

Output →

fff.
Not a keyword.

char.
It is a keyword.

Expt. No. _____ Date 10/10/22

Page No. 2

Program 2 → C program to count no. of lines and characters in a file.

```
#include<stdio.h>
#include<fstream>

int main(){
    FILE *dp;
    dp = fopen("dp.txt","r");
    int count=0, line=0;
    for(c=getc(dp); c!=EOF; c=getc(dp)){
        count++;
        if(c=='\n') line++;
    } line++;
    fclose(dp);
    printf("No. of lines is %d", line);
    printf("\n No. of characters is %d", char);

    return 0;
}
```

Algo
10/10/22

Teacher's Signature _____

dp.txt :-

Hello
123

Output :- No. of lines is 2
No. of characters is 8

Expt. No. _____ Date 17/10/22

Page No. 3

Program - 3 → Write a C program to identify whether a given line is comment or not.

```
#include <stdio.h>

int main(){
    int flag;
    char com[30];
    gets(com);
    if(com[0]=='/'){ flag=1;}
    else if(com[1]=='*'){
        for(int i=2;i<30;i++){
            if(com[i]=='*' && com[i+1]=='/'){
                flag=2; break;
            }
        }
    }

    if(flag==1){
        printf("Single line comment found\n");
    }
    else if(flag==2){
        printf("Multiline comment found\n");
    }
    else printf("No comment found\n");

}
```

Output
17/10/22

Teacher's Signature _____

Output ->

This is line number 1.

No comment found.

// This is line number 2.

Single line comment found.

/* This is line number 3 */

Multiline comment found.

Program-4 → Write a C program to calculate frequency of all characters in a file.

```
#include<stdio.h>

int main(){

    FILE *dp;
    char c;
    int freq[26] = {0};
    for(c = getc(dp); c != EOF; c = getc(dp)){
        freq[c-97]++;
    }
    c = 'a';
    for(int i=0; i<26; i++){
        printf("%c: %d\n", c++, freq[i]);
    }
    return 0;
}
```

Teacher's Signature

Output :-

dp.txt ⇒ hello, this is a sample file.

a : 2
b : 0
c : 0
d : 0
e : 3
f : 1
g : 0
h : 2
i : 3
j : 0
k : 0
l : 4
m : 1
n : 0
o : 1
p : 1
q : 0
r : 0
s : 3
t : 1
u : 0
v : 0
w : 0
x : 0
y : 0
z : 0

Expt. No. _____ Date 31/10/22

Page No. 5

Program-5 → Write a C program to count total no. of operators in a given file.

```
#include<stdio.h>

int main(){
        FILE *dp;
        int count=0;
        dp=fopen("dp.txt","r");
        if(d==NULL){
            printf("File does not exist\n");
            return 1;
        }
        else{
            char c;
            for(c=getc(dp); c!=EOF; c=getc(dp)){
                if(c=='+'||c=='-'||c=='*'||c=='/')
                    count++;
            }
            fclose(dp);
            printf("No. of operators are: %d",count);
        }
    return 0;
}
```

Eof
31/10/22

Teacher's Signature _____

Output →

dp.txt → 3+3-4*5

No. of operators are 3

Expt. No. 6 Date 14/10/22

Page No. 6

Objective → Installing Flex and set environment variable for Flex and gcc and execute a simple lex program to print "hello world".

Resource → CodeBlocks and Flex GNU 32.

Step 1:→

/* For downloading CodeBlocks */

→ Open browser and type in "codeblocks"
→ Goto codeblocks and goto download section
→ Click on "Download binary release"
→ Download codeblocks-20.3mingw-32bit-setup.exe"
→ Install the software by clicking on next.

/* For downloading Flex GNU 32 */

→ Open browser and type in "download Flex GNU WIN 32"
→ Goto "Download GnuWin from SourceForge.net"
→ Download will start automatically
→ Install the software keep clicking on next.
/* save it inside C folder */

Step 2 →

/* Path setup for CodeBlocks */

→ After successfully installing, go to program files in C drive.
→ Goto Codeblocks
→ Goto Mingw
→ Goto Bin
→ Copy the address of bin
→ C:/Program files/Codeblocks/mingw/bin
→ From search panel type Environment variables.

Teacher's Signature

→ Goto Environment variables.
→ Click on Path which is inside System variables.
→ Click on edit.
→ Click on new and paste the copied path to it.
→ Press ok.

Step 3 ⇒
/* Path setup for Gnuwin32 */
→ After successful installation Goto C drive.
→ Goto GnuWin32.
→ Goto bin
→ Copy the address of bin.
→ C:/GnuWin32/bin.
→ From search panel, type Environment variables.
→ Goto Environment variables.
→ Click on Path which is inside System variables
⇒ Click on Edit.
→ Click on new and paste the copied path to it.
→ Press ok.

/* Note → Make sure the path of CodeBlocks is before GNUWin32
--- The order is important */

Step 4 →
→ Create a folder on Desktop with any name.
→ Open notepade type in a Hex program.
→ Save it inside the Folder like filename.1
⇒ /* Make sure while saving save it as all files rather than as a text document */

Teacher's Signature _____

Step 5 →

→ Go to Command Prompt.
→ Go to directory where you have saved the program.
→ Type in command :- flex filename.l
→ Type in command :- gcc lex.yy.c
→ Execute / Run for windows command prompt :- a.exe

Program →

```
%{
    #undef yywrap
    #define yywrap() 1
%}
%%
[\n] {
    printf("Hello world");
}
%%
main()
{
    yylex(); // calling the rules
    section
}
```

Output
14/11/22

Output → Hello world.

Expt. No. _____ Date 28/11/22

Page No. 9

Program-7 → Write a lex program to identify valid mobile number input by user.

```
%{
    #include<stdio.h>
%}
%%

[1-9][0-9]{10} {printf("Valid mobile number.");}
.*             {printf("Invalid mobile number.");}

%%
main(){
    printf("Enter a string");
    yylex();
}
yywrap(){
    return 1;
}
```

Teacher's Signature _____

Output →

Enter a string: 7474872487.

Valid mobile number.

Expt. No. _____ Date 28/11/22

Page No. 10

Program-8 → Write a lex program to identify ~~valid~~ count vowels and consonants in a given string.

```
%{
    #include<stdio.h>
    int vow=0;
    int cons=0;
%}
%%
[aeiouAEIOU] {vow++;}
[bcdf...BCDF...] {cons++;}
%%
main(){
    printf("Enter somestring");
    yylex();
}
yywrap(){
    return 1;
}
```

Prog 8 28/11/22

Teacher's Signature _____

Output →

Enter some string: Monkey D Luffy.

Vowels = 3
Consonants = 9

Expt. No. _____ Date 10/01/23

Page No. 11

Program - 9 → Write YACC program to print "Hello World".

```
%{
    #include<stdio.h>
    #include<stdlib.h>
    int yylex(void);
    int yyerror(const char *s);
%}

%token HI BYE

%%
program:
        hi bye
        ;
hi:
        HI {printf("Hello World\n");}
        ;
bye:
        BYE {printf("Bye World\n"); exit(0);}
        ;
```

Teacher's Signature _____

Output →

hi

Hello World.

bye

Bye World

exit

Expt. No. _____ Date 10/01/23

Page No. 12

Program-10 → Write a YACC program to recognize strings aaab, abbb using ~~a^n b^n~~ $a^n b^n$, where $b >= 0$

```
%{
   #include<stdio.h>
   #include<stdlib.h>
%}

%token A B NL

%%
  stmt : S NL { printf("Valid String\n"); exit(0); }
       ;
    S : A S B |
      ;
%%

int yyerror(char *msg)
{
   printf("invalid string\n");
   exit(0);
}
main()
{
   printf("Enter the string\n");
   yyparse();
}
```

Teacher's Signature _____

Output →

Enter a string aabbbc

Invalid string.

Enter a string aabb.

Valid string.