AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
Department of Computer Science and Engineering

Program: Bachelor of Science in Computer Science and Engineering

Course Code : **CSE 4130**
Course Title : **Formal Languages & Compilers Lab**
Academic Semester : **Spring 2023**

Assignment 1

Submitted on: **19-11-2023**
Submitted by

     Name: **Meherin Sultana**
     Student ID: **20200104036**
     Lab Section: **A2**

Question:

Develop a program that takes an input file given source program and produces a filtered file by removing the comments and white space (extra spaces, tabs and newline characters).

Code (implemented in C++):

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

int main(void)
{
    FILE *p1,*p2;
    char c;
    p1 = fopen("input1.c", "r");
    p2 = fopen("output.txt","w");

    if(!p1) printf("\nFile can't be opened!");
    else
    {
    bool flag1 = false;
    bool flag2 = false;
    bool flag3 = false;
    while((c = fgetc(p1)) != EOF)
    {
    if(c!=' ')
    {
        flag3 = false;
    }
    if(c=='/')
    {
        if(((c = fgetc(p1)) != EOF))
```

```c
                {
                if(c=='/')
                {
                flag1 = true;
                }
                if(c=='*')
                {
                flag2 = true;
                }
                }
        }
        else if(c!='\n' && c!='\t' && flag1 == false && flag2 == false &&
flag3 == false)
        {
                fputc(c, p2);
        }
        else if(flag1==true && c=='\n')
        {
                flag1=false;
        }
        else if(flag2==true && c=='*')
        {
                if((c = fgetc(p1)) != EOF && c=='/')
                {
                flag2=false;
                }
        }
        else
        {
                printf("skipped: %c\n",c);
        }
        if(c==' ' && flag3 == false)
        {
                flag3=true;
```

```c
        }
        }
        }

    fclose(p1);
    fclose(p2);

    p2 = fopen("output.txt","r");

    while((c=fgetc(p2))!=EOF)
    printf("%c",c);

    fclose(p2);
    return 0;
}
```

Input (input1.c):

```c
#include<stdio.h>
int main(void)
{
// Single Line Comment
printf ("Hello");
/* Multi
 Line
Comment
*/
printf("World");
return 0;
}
```

Output:

```
skipped:
skipped: S
skipped: i
skipped: n
skipped: g
skipped: l
skipped: e
skipped:
skipped: L
skipped: i
skipped: n
skipped: e
skipped:
skipped: C
skipped: o
skipped: m
skipped: m
skipped: e
skipped: n
skipped: t
skipped:

skipped:
skipped: M
skipped: u
skipped: l
skipped: t
skipped: i
skipped:

skipped:
skipped: L
skipped: i
skipped: n
skipped: e
skipped:

skipped: C
skipped: o
skipped: m
skipped: m
skipped: e
skipped: n
skipped: t
skipped:

skipped:

skipped:

skipped:

skipped:

#include<stdio.h>int main(void){printf ("Hello");printf("World");return 0;}
Process returned 0 (0x0)   execution time : 0.610 s
Press any key to continue.
```