Ahsanullah University of Science and Technology

Department of Computer Science and Engineering

CSE 4130

Formal languages and Compilers lab

Assignment No: 01

Submitted By:

Name: Anika Tanzim

ID: 16.02.04.072

Group: B1

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Question:

A C source program with single and multiple line comments is given. As the first step toward compilation you need to remove the comments and white space (extra spaces, tabs and newline characters). Develop a program that takes as input file the given source program and produces a filtered file as stated above. The program must also display both the files

Code:

```c
#include <stdio.h>

FILE *p1,*p2;

int main(void)

{

  char c,d,e,f,g;

 p1 = fopen("input.c", "r");

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


 while((c = fgetc(p1)) != EOF)

 {

   //removing new line

   if(c=='\n'){

     continue;

   }

   if( c == ' ')

   {
```

```c
        //one space

        fputc(c, p2);

        while((c = fgetc(p1))==' ')

        {

            continue;

        }

        fputc(c, p2);



    }
    else if (c=='/') // removing comment
    {

        d=fgetc(p1);

        if(d=='/')

        {

            //single line comment

            while((e=fgetc(p1))!=EOF)

            {

                if(e=='\n'){

                    break;

                }

            }
```

```c
        }
    else if( d == '*')
    {
        //multiple line comment
        while((f=fgetc(p1))!=EOF)
        {
            if(f=='*')
            {
                g=fgetc(p1);
                if(g=='/'){
                    break;
                }
            }
        }
    }
    else
    {
        fputc(c,p2);
        fputc(d,p2);
    }

}
```

```c
        else{
            fputc(c,p2);
        }
    }


    fclose(p1);
    fclose(p2);


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


    while((c=fgetc(p2))!=EOF){
        printf("%c",c);
    }
    fclose(p2);
    return 0;
}
```

Input:

```c
#include<stdio.h>

int    main(void)

{

// Single    Line Comment

printf   ("Hello");
/* Multi

    Line

              Comment
*/
printf("World");

return 0;

}
```

Output:

```c
#include<stdio.h>int main(void){printf ("Hello");printf("World");return 0;}
```