

Operating System Home Assignment -1

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Question 1

The sample program that is written in order to suspect the services provided by the operating system is shown in *fig 1*.

```
1#include<stdio.h>
2
3int main(int argc, char *argv[])
4{
5    FILE *input;
6    input = fopen(argv[1],"r");
7    int Val, Temp;
8    while(!feof(input))
9    {
10        fscanf(input,"%d",&Val);
11        if(feof(input))
12            break;
13        Temp = Val + 1;
14        printf("%d\n",Temp);
15    }
16}
```

Figure 1 : Sample C Program

The above program takes a file containing integers as input and adds one to each integer and prints them on the console.

Operating System(OS) is a program that acts as an intermediary between the user and the hardware. It provides an environment for the users to run the programs. When the above C program is executed the following are the some of the services provided by the Operating system :

- OS loads the program into the memory and allocate the resources required in order to execute the program.

- OS handles the I/O operations effectively. In this case when the input is given as an input file from the console, OS takes the input from the input file and returns the output on to the console.
- OS gives permissions for operations on the file. Since the input file in the program is opened in the read mode OS allows the user to access the file only in the read mode and the will not be able to write/append in to file.
- OS also handles the errors. Example of the errors that can be encountered while executing this program may be a segmentation fault when the input file is not given etc. Operating system handles such type of errors and reports it to the user.