Lab: 3

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Laboratory Objective: To implement I/O calls of UNIX

Learning Outcomes: Students will be able to understand and implement I/O calls

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Write programs using the I/O System calls of UNIX operating system

1. open()

```
#include<stdio.h>
#include<sys/types.h>
#include<sys/stat.h>
#include<fcntl.h>
#include<string.h>
#include<errno.h>

int main(int argc,char *argv[]){
        int fd;
        if(2 !=argc){
                printf("\n Usage: \n");
                return 1;
        }

        errno =0;
        fd=open(argv[1],O_RDONLY);

        if(-1==fd){
                printf("\n open() failed with error [%s]\n", strerror(errno));
                return 1;
        }
        else{
                printf("\n open() successful\n");


        }
}
```

```
$ ./open

 Usage:

LAB ~
$ nano openCall.c

LAB ~
$ ./open newfile.txt

 open() successful
```

2. read()

```
#include<unistd.h>
#include<fcntl.h>

int main()
        {
                char data[128];

                int f =open("newfile.txt", O_RDONLY);

                if(f<0)
                        return -1;

                if(read(0, data, 128)< 0)
                        write(2,"An error ocurred in the read.\n",31);
                exit(0);
        }
```

```
$ ./read
```

3. write()

```c
#include<unistd.h>
#include<fcntl.h>

int main(void){
        int filedesc = open("newfile.txt",O_WRONLY | O_APPEND);

        if(filedesc<0){
                return -1;
        }

        if(write(filedesc,"This will be output to newfile.txt\n",36)!=36){
                write(2, "There was an error writing to newfile.txt\n",43);
                return -1;
        }

        return 0;
}
```

```
$ ./write
```

```
$ cat newfile.txt
hi!!This will be output to newfile.txt
This will be output to newfile.txt
```

4. stat()