

OS-LAB-1

1. Write a program to print the lines of a file that contain a word given as the program argument (a simple version of grep UNIX utility).

pgm1.c

```
#include <stdio.h>
#include <unistd.h>
#include <sys/stat.h>
#include <fcntl.h>
#include <stdlib.h>
#include <string.h>
int main(int argc, char *argv[])
{
    int file, i = 0, j = 0;
    char s[100], c;
    if (argc != 3)
    {

        printf("Insufficient arguments\n");
        exit(1);
    }
    if ((file = open(argv[2], O_RDONLY)) == -1)
    {
        printf("No such file found...\n");
        exit(1);
    }
    while ((read(file, &c, 1)) > 0)
    {
        if (c != '\n')
        {
            s[i] = c;
            i++;
        }
        else
```

```

{
j++;
s[i] = '\\0';
i = 0;
if (strstr(s, argv[1]) != NULL)
printf("Line:%d '%s' \\n", j, s);
}
}
exit(0);
}

```

OUTPUT :

```

linuxcode@linuxcode: ~/190905514/FIFTH-SEM/OS-LAB/LAB1
linuxcode@linuxcode:~/190905514/FIFTH-SEM/OS-LAB/LAB1$ cat input.txt
welcome to Manipal.
welcome to Udupi.
welcome to Karnataka.
welcome to Delhi.
welcome to Bangalore.
linuxcode@linuxcode:~/190905514/FIFTH-SEM/OS-LAB/LAB1$ ./pgm2 welcome
gcc pgm2.c -o pgm2
linuxcode@linuxcode:~/190905514/FIFTH-SEM/OS-LAB/LAB1$ ./pgm2 welcome input.txt
Line:1 'welcome to Manipal.'
Line:2 'welcome to Udupi.'
Line:3 'welcome to Karnataka.'
Line:4 'welcome to Delhi.'
linuxcode@linuxcode:~/190905514/FIFTH-SEM/OS-LAB/LAB1$

```

2. Write a program to list the files given as arguments, stopping every 20 lines until a key is hit. (a simple version of more UNIX utility).

pgm2.c

```

#include <stdio.h>
#include <unistd.h>
#include <sys/stat.h>
#include <fcntl.h>

```

```

#include <stdlib.h>
#include <string.h>

int main(int argc, char *argv[])
{
    int sfd1;
    int sfd2;
    int i=0;
    int k=0;
    int p=0;
    char myFile1[100];
    char myFile2[100];
    char chracter;

    if(argc!=3)
    {
        printf("Insufficient Arguments\n");
        exit(1);
    }

    if( (sfd1=open(argv[1],O_RDONLY))==-1)
    {
        printf("Error : File does not found\n");
        exit(1);
    }

    while((read(sfd1,&chracter,1))>0)
    {
        if(chracter!='\n')
        {
            myFile1[i]=chracter;
            i++;
        }

        else
        {
            k++;
            p++;
            myFile1[i]='\0';
            i=0;
            printf("Line:%d \t %s \n", p,myFile1);
            if(k==20)
            {
                fgetc(stdin);
                k=0;
            }
        }
    }
    close(sfd1);

    if( (sfd2=open(argv[2],O_RDONLY))==-1)
    {
        printf("Error : File not found\n");
        exit(1);
    }

    p=0;

    while((read(sfd1,&chracter,1))>0)
    {
        if(chracter!='\n')
        {
            myFile2[i]=chracter;
            i++;
        }
    }
}

```

```

    }
else
{
    k++;
    p++;
    myFile1[i]='\0';
    i=0;
    printf("Line:%d \t %s \n", p,myFile2);
    if(k==20)
    {
        fgetc(stdin);
        k=0;
    }
}
}exit(0);
}

```

OUTPUT :

```

student@V310Z-000: ~/190905514/FIFTH-SEM/LAB1
File Edit View Search Terminal Help

student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ gcc pgm2.c -o pgm2
student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ ./pgm2 pgm2.c input.txt
Line:1  #include <stdio.h>
Line:2  #include <unistd.h>
Line:3  #include <sys/stat.h>
Line:4  #include <fcntl.h>
Line:5  #include <stdlib.h>
Line:6  #include <string.h>
Line:7
Line:8  int main(int argc, char *argv[])
Line:9  {
Line:10
Line:11      int sfd1;
Line:12      int sfd2;
Line:13      int i=0;
Line:14      int k=0;
Line:15      int p=0;
Line:16      char myFile1[100];
Line:17      char myFile2[100];
Line:18      char chracter;
Line:19
Line:20      if(argc!=3)

```

```
student@V310Z-000: ~/190905514/FIFTH-SEM/LAB1
File Edit View Search Terminal Help
Line:8  int main(int argc, char *argv[])
Line:9  {
Line:10
Line:11      int sfd1;
Line:12      int sfd2;
Line:13      int i=0;
Line:14      int k=0;
Line:15      int p=0;
Line:16      char myFile1[100];
Line:17      char myFile2[100];
Line:18      char chracter;
Line:19
Line:20      if(argc!=3)
Line:21      {
Line:22          printf("Insufficient Arguments\n");
Line:23          exit(1);
Line:24      }
Line:25
Line:26      if( (sfd1=open(argv[1],O_RDONLY))== -1)
Line:27      {
Line:28          printf("Error : File does not found\n");
Line:29          exit(1);
Line:30      }
Line:31
Line:32      while((read(sfd1,&chracter,1))>0)
Line:33      {
Line:34          if(chracter!='\n')
Line:35          {
Line:36              myFile1[i]=chracter;
Line:37              i++;
Line:38          }
Line:39
Line:40      else
```

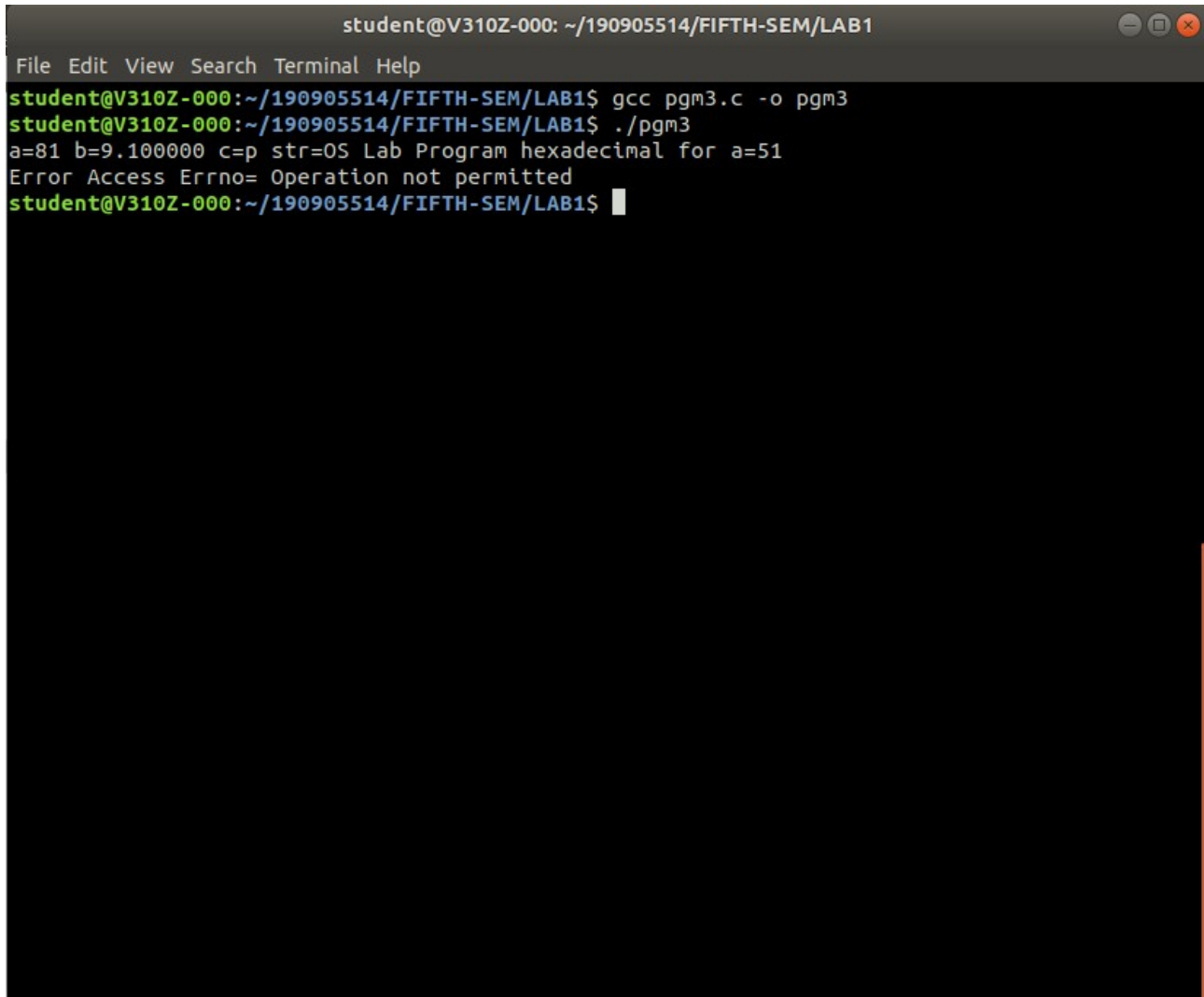
3.Demonstrate the use of different conversion specifiers and resulting output to allow the items to be printed.

Pgm3.c

```
#include<stdio.h>
#include<stdlib.h>
#include<errno.h>
// extern int errno;

int main()
{
    int a=81;
    float b=9.1;
    char c='p';
    char storage[]="OS Lab Program";
    printf("a=%d    b=%f    c=%c    str=%s    hexadecimal    for    a=%x    \n",a,b,c,storage,a);
    errno=EPERM;
    printf("Error Access Errno= %m\n");
}
```

OUTPUT :

A terminal window titled 'student@V310Z-000: ~/190905514/FIFTH-SEM/LAB1' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ gcc pgm3.c -o pgm3
student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ ./pgm3
a=81 b=9.100000 c=p str=OS Lab Program hexadecimal for a=51
Error Access Errno= Operation not permitted
student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$
```

4. Write a program to copy character-by character copy is accomplished using calls to the functions referenced in `stdio.h`.

pgm4.c

```
#include<stdio.h>
#include <unistd.h>
#include<sys/stat.h>
#include<fcntl.h>
#include<stdlib.h>
```

```
int main(int argc, char *argv[])
{

    char ch;
    int inFile;
    int outFile;
    char storage[128];
    int readFile;

    if(argc!=3)
    {
        printf("Insufficient Arguments\n");
        exit(1);
    }

    inFile=open(argv[1],O_RDWR);
    outFile=open(argv[2],O_WRONLY|O_CREAT, S_IRUSR|S_IWUSR);

    if( inFile== -1 || outFile== -1)
    {
        printf("Error : File not found\n");
        exit(1);
    }

    while(read(inFile,&ch,1) == 1)
    {
        write(outFile,&ch,1);
    }

    printf("\nContents of file copied\n");
    exit(0);
}
```

OUTPUT :

```
student@V310Z-000: ~/190905514/FIFTH-SEM/LAB1
File Edit View Search Terminal Help
Line:75      p++;
Line:76      myFile1[i]='\0';
Line:77      i=0;
Line:78      printf("Line:%d \t %s \n", p,myFile2);
Line:79      if(k==20)
Line:80      {
Line:81          fgetc(stdin);
Line:82          k=0;
Line:83      }
Line:84      }
Line:85      }exit(0);
Line:1
Line:2
student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ cat input.txt
hello bro

student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ cat index.txt
hello bro

y bro ! what are you doing.
Server : I am doing good.
Client : How your lab is going on.
Server : My lab is going good.student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ gcc pgm4.c -o
pgm4
student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ ./pgm4 input.txt index.txt

Contents of file copied
student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$ cat index.txt
hello bro

y bro ! what are you doing.
Server : I am doing good.
Client : How your lab is going on.
Server : My lab is going good.student@V310Z-000:~/190905514/FIFTH-SEM/LAB1$
```