

OPERATING SYSTEMS LAB 1

Q1.

PROGRAM:

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

void match_pattern(char *argv[])
{
    int fd,r,j=0;
    char temp,line[100]; int lineno=0;
    memset(line,0,sizeof(line));

    if((fd=open(argv[2],O_RDONLY)) != -1)
    {
        while((r=read(fd,&temp,sizeof(char)))!= 0)
        {
            if(temp!='\n')
            {
                line[j]=temp;
                j++;
            }
            else
            {
                lineno++;
                line[j]='\0';
                if(strstr(line,argv[1])!=NULL)
                    printf("%d\t%s\n",lineno,line);
                memset(line,0,sizeof(line));
                j=0;
            }
        }
    }
}

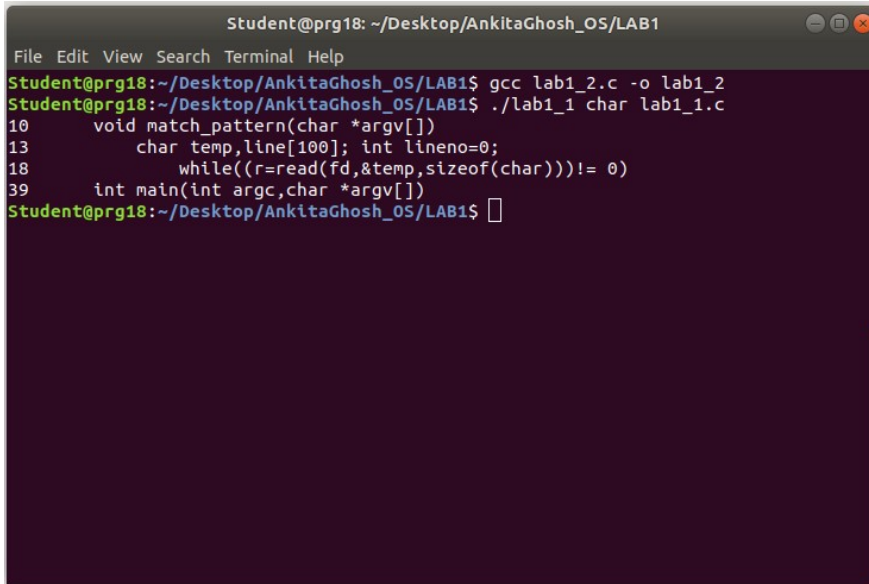
int main(int argc,char *argv[])
{
    struct stat stt;
    if(argc==3)
    {
        if(stat(argv[2],&stt)==0)
            match_pattern(argv);
        else
```

```

    {
        perror("stat()");
        exit(1);
    }
}
}

```

OUTPUT:



```

Student@prg18: ~/Desktop/AnkitaGhosh_OS/LAB1
File Edit View Search Terminal Help
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ gcc lab1_2.c -o lab1_2
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ ./lab1_1 char lab1_1.c
10 void match_pattern(char *argv[])
13 char temp,line[100]; int lineno=0;
18 while((r=read(fd,&temp,sizeof(char)))!= 0)
39 int main(int argc,char *argv[])
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ 

```

Q2.

PROGRAM:

```

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

```

```

void print_lines(int argc,char *argv[])
{
    int fd,r,j=0;
    int lineno=0; char temp,line[100];
    int count;
    for(int i=1;i<argc;i++)
    {
        if((fd=open(argv[i],O_RDONLY)) != -1)
        {
            printf("Filename: %s\n",argv[i]);
            count=0;

```

```

while((r=read(fd,&temp,sizeof(char)))!= 0)
{
    if(temp!='\n')
    {
        line[j]=temp;
        j++;
    }
    else
    {
        lineno++; count++;
        line[j]='\0';
        if(lineno%20==0)
        {
            printf("%d\t%s\n",count,line);
            printf("Enter a key to see more lines: ");
            char c = getchar();

        }
        else
        {
            printf("%d\t%s\n",count,line);
        }
        memset(line,0,sizeof(line));
        j=0;
    }
}
}}
}
int main(int argc,char *argv[])
{
    print_lines(argc,argv);
}

```

OUTPUT:

```

Student@prg18: ~/Desktop/AnkitaGhosh_OS/LAB1
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ gcc lab1_2.c -o lab1_2
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ ./lab1_2 lab1_1.c lab1_2.c lab1_3.c
Filename: lab1_1.c
1  #include<stdio.h>
2  #include<unistd.h>
3  #include<stdlib.h>
4  #include <sys/types.h>
5  #include <sys/stat.h>
6  #include <unistd.h>
7  #include<string.h>
8  #include <fcntl.h>
9
10 void match_pattern(char *argv[])
11 {
12     int fd,r,j=0;
13     char temp,line[100]; int lineno=0;
14     memset(line,0,sizeof(line));
15
16     if((fd=open(argv[2],O_RDONLY)) != -1)
17     {
18         while((r=read(fd,&temp,sizeof(char)))!= 0)
19         {
20             if(temp!='\n')
21             {
22                 line[j]=temp;
23                 j++;
24             }
25             else
26             {
27                 lineno++;
28                 line[j]='\0';
29                 if(strstr(line,argv[1])!=NULL)
30                     printf("%d\t%s\n",lineno,line);
31                 memset(line,0,sizeof(line));
32                 j=0;
33             }
34         }

```

```
les Terminal Wed 10:14 AM Student@prg18: ~/Desktop/AnkitaGhosh_OS/LAB1
File Edit View Search Terminal Help
Enter a key to see more lines:
21 {
22     line[j]=temp;
23     j++;
24 }
25 else
26 {
27     lineno++;
28     line[j]='\0';
29     if(strstr(line,argv[1])!=NULL)
30         printf("%d\t%s\n",lineno,line);
31     memset(line,0,sizeof(line));
32     j=0;
33 }
34 }
35 }
36 }
37 }
38 }
39 int main(int argc,char *argv[])
40 {
Enter a key to see more lines:
41 struct stat stt;
42 if(argc==3)
43 {
44     if(stat(argv[2],&stt)==0)
45         match_pattern(argv);
46     else
47     {
48         perror("stat()");
49         exit(1);
50     }
51 }
Filename: lab1_3.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <errno.h>
4
```

```
les Terminal Wed 10:14 AM Student@prg18: ~/Desktop/AnkitaGhosh_OS/LAB1
File Edit View Search Terminal Help
40 {
Enter a key to see more lines:
41 struct stat stt;
42 if(argc==3)
43 {
44     if(stat(argv[2],&stt)==0)
45         match_pattern(argv);
46     else
47     {
48         perror("stat()");
49         exit(1);
50     }
51 }
Filename: lab1_3.c
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <errno.h>
4
5 int main()
6 {
7     int i=-9;
8     unsigned int ui=89;
9     float f=2.345;
Enter a key to see more lines:
10 double d=68354.65897406;
11 char c='a';
12 char s[]="hello";
13 errno = EPERM;
14
15 printf("Integer : %d\n",i);
16 printf("Unsigned Integer : %u\n",ui);
17 printf("Float : %f\n",f);
18 printf("Double : %lf\n",d);
19 printf("Char : %c\n", c);
20 printf("String : %s\n",s);
21 printf("Error NO. : %m\n");
22 return 0;
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$
```

Q3.

PROGRAM:

```
#include <stdio.h>
#include <stdlib.h>
#include <errno.h>
```

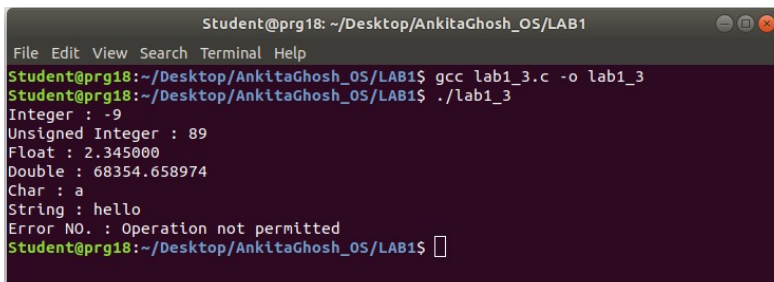
```

int main()
{
    int i=-9;
    unsigned int ui=89;
    float f=2.345;
    double d=68354.65897406;
    char c='a';
    char s[]="hello";
    errno = EPERM;

    printf("Integer : %d\n",i);
    printf("Unsigned Integer : %u\n",ui);
    printf("Float : %f\n",f);
    printf("Double : %lf\n",d);
    printf("Char : %c\n", c);
    printf("String : %s\n",s);
    printf("Error NO. : %m\n");
    return 0;
}

```

OUTPUT:



```

Student@prg18: ~/Desktop/AnkitaGhosh_OS/LAB1
File Edit View Search Terminal Help
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ gcc lab1_3.c -o lab1_3
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ ./lab1_3
Integer : -9
Unsigned Integer : 89
Float : 2.345000
Double : 68354.658974
Char : a
String : hello
Error NO. : Operation not permitted
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ 

```

Q4.

PROGRAM:

```

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

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

    char src[100], dst[100];

    printf("Enter source name: ");
    scanf(" %s", src);

    printf("Enter dest name: ");
    scanf(" %s", dst);

```

```

int sfd = open(src, O_RDONLY);
int dfd = open(dst, O_RDWR | O_CREAT, 0640);

char buffer[1];
while ((read(sfd, buffer, 1)) > 0) {
    write(dfd, buffer, 1);
}

return 0;
}

```

OUTPUT:

```

Student@prg18: ~/Desktop/AnkitaGhosh_OS/LAB1
File Edit View Search Terminal Help
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ gcc lab1_4.c -o lab1_4
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ ./lab1_4
Enter source name: lab1_3.c
Enter dest name: copylab1_3.c
Student@prg18:~/Desktop/AnkitaGhosh_OS/LAB1$ 

```

```

lab1_3.c
~/Desktop/AnkitaGhosh_OS/LAB1
Save

#include <stdio.h>
#include <stdlib.h>
#include <errno.h>

int main()
{
    int i=-9;
    unsigned int ui=89;
    float f=2.345;
    double d=68354.65897406;
    char c='a';
    char s[]="hello";
    errno = EPERM;

    printf("Integer : %d\n",i);
    printf("Unsigned Integer : %u\n",ui);
    printf("Float : %f\n",f);
    printf("Double : %lf\n",d);
    printf("Char : %c\n", c);
    printf("String : %s\n",s);
    printf("Error NO. : %m\n");
    return 0;
}

```

```

copylab1_3.c
~/Desktop/AnkitaGhosh_OS/LAB1
Save

#include <stdio.h>
#include <stdlib.h>
#include <errno.h>

int main()
{
    int i=-9;
    unsigned int ui=89;
    float f=2.345;
    double d=68354.65897406;
    char c='a';
    char s[]="hello";
    errno = EPERM;

    printf("Integer : %d\n",i);
    printf("Unsigned Integer : %u\n",ui);
    printf("Float : %f\n",f);
    printf("Double : %lf\n",d);
    printf("Char : %c\n", c);
    printf("String : %s\n",s);
    printf("Error NO. : %m\n");
    return 0;
}

```