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Section: CSE - D
Roll no: 23

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)

```
#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 FD;
    int i=0;
    int lines=0;
    char ch[100];
    char chr;

    if(argc<2)
    {
        printf("Insufficient Arguments\n");
        exit(1);
    }

    if( (FD=open(argv[1],O_RDONLY))!=-1)
    {
        printf("File not found\n");
        exit(1);
    }

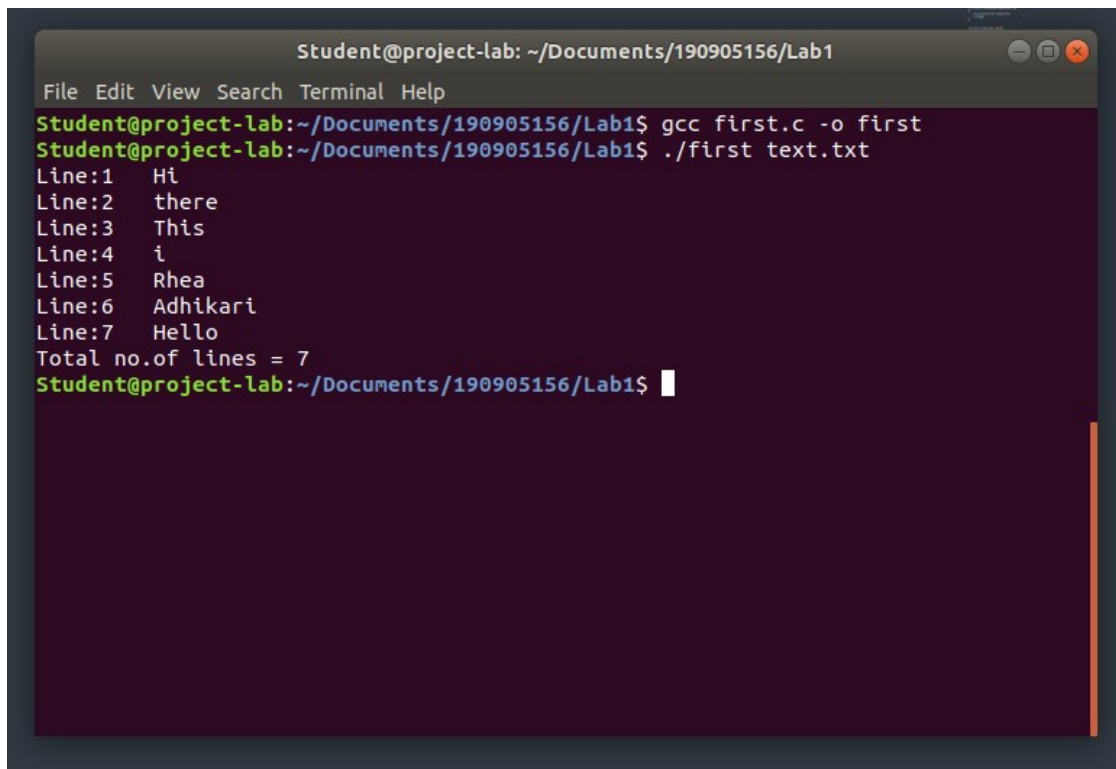
    while((read(FD,&chr,1))>0)
    {
        if(chr!='\n')
        {
            ch[i]=chr;
            i++;
        }

        else
        {
            lines++;
            ch[i]='\0';
            i=0;
            printf("Line:%d \t %s \n",lines,ch);
        }
    }
```

```

}
printf("Total no.of lines = %d\n",lines);
exit(0);
}

```



```

Student@project-lab: ~/Documents/190905156/Lab1
File Edit View Search Terminal Help
Student@project-lab:~/Documents/190905156/Lab1$ gcc first.c -o first
Student@project-lab:~/Documents/190905156/Lab1$ ./first text.txt
Line:1  Hi
Line:2  there
Line:3  This
Line:4  i
Line:5  Rhea
Line:6  Adhikari
Line:7  Hello
Total no.of lines = 7
Student@project-lab:~/Documents/190905156/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)

```

#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 FD1,FD2,i=0,k=0,p=0;
    char ch[100],ch2[100],chr;

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

    if( (FD1=open(argv[1],O_RDONLY))===-1)
    {
        printf("File not found\n");
        exit(1);
    }

```

```

while((read(FD1,&chr,1))>0)
{
    if(chr!='\n')
    {
        ch[i]=chr;
        i++;
    }

    else
    {
        k++;
        p++;
        ch[i]='\0';
        i=0;
        printf("Line:%d \t %s \n", p,ch);
        if(k==20)
        {
            fgetc(stdin);
            k=0;
        }
    }
}
close(FD1);

if( (FD2=open(argv[2],O_RDONLY))==-1)
{
    printf("File not found\n");
    exit(1);
}

p=0;

while((read(FD1,&chr,1))>0)
{
    if(chr!='\n')
    {
        ch2[i]=chr;
        i++;
    }

    else
    {
        k++;
        p++;
        ch[i]='\0';
        i=0;
        printf("Line:%d \t %s \n", p,ch2);
        if(k==20)
        {
            fgetc(stdin);
            k=0;
        }
    }
}
exit(0);
}

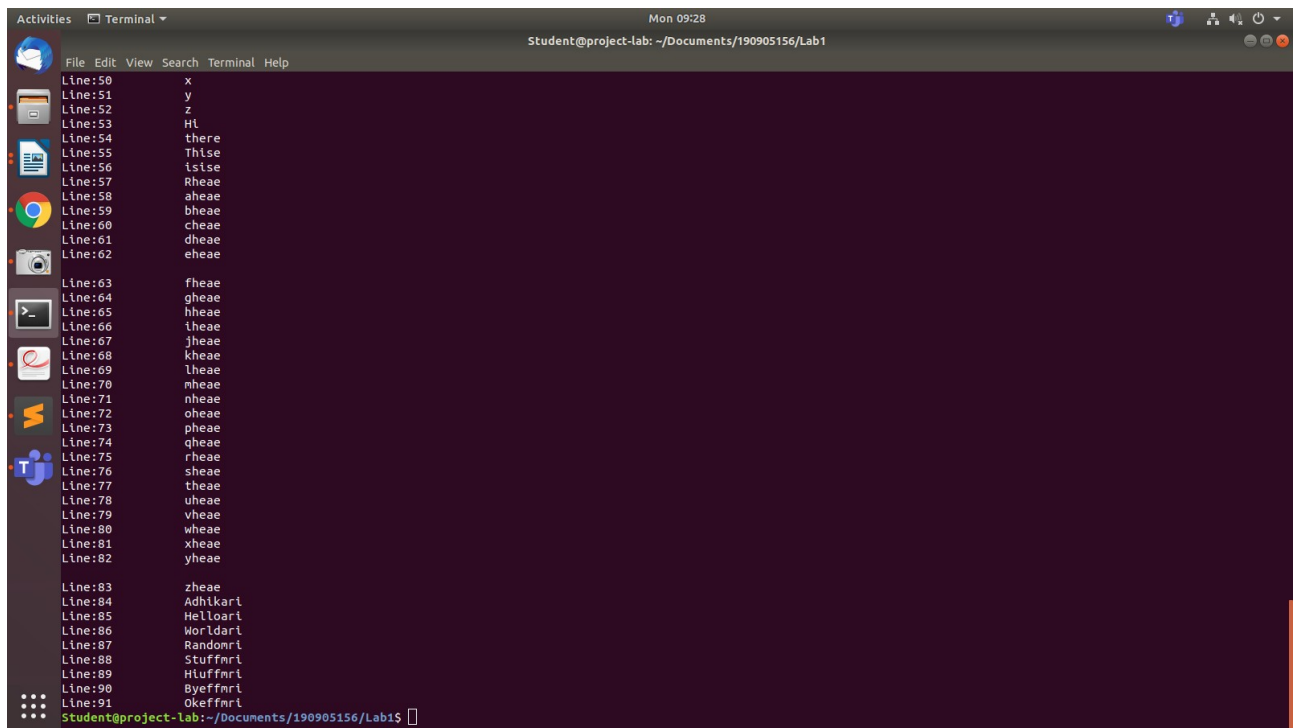
```

```
Activities Terminal Mon 09:27 Student@project-lab: ~/Documents/190905156/Lab1
File Edit View Search Terminal Help
Student@project-lab:~/Documents/190905156/Lab1$ gcc second.c -o second
Student@project-lab:~/Documents/190905156/Lab1$ ./second text.txt text2.txt
Line:1 Hi
Line:2 there
Line:3 This
Line:4 is
Line:5 Rhea
Line:6 a
Line:7 b
Line:8 c
Line:9 d
Line:10
Line:11 e
Line:12 f
Line:13 g
Line:14 h
Line:15 i
Line:16 j
Line:17 k
Line:18 l
Line:19 m
Line:20 n
Line:21 o
Line:22
Line:23 p
Line:24 q
Line:25 r
Line:26 s
Line:27 t
Line:28 u
Line:29 v
Line:30 w
Line:31 x
Line:32 y
Line:33 z
Line:34 Adhikart
Line:35 Hello
Line:36 World
Line:37 Random
Line:38 Stuff
Line:39 Hi
Line:40 Bye
Line:41 Ok
Line:42 Hi
Line:43
Line:44 there
Line:45 this
```

```
Activities Terminal Mon 09:27 Student@project-lab: ~/Documents/190905156/Lab1
File Edit View Search Terminal Help
Line:38 Bye
Line:39 Ok
Line:40 Hi
Line:41
Line:42 there
Line:43 This
Line:44 is
Line:45 Rhea
Line:46 a
Line:47 b
Line:48 c
Line:49 d
Line:50 e
Line:51 f
Line:52 g
Line:53 h
Line:54 i
Line:55 j
Line:56 k
Line:57 l
Line:58 m
Line:59 n
Line:60 o
Line:61 p
Line:62
Line:63 q
Line:64 r
Line:65 s
Line:66 t
Line:67 u
Line:68 v
Line:69 w
Line:70 x
Line:71 y
Line:72 z
Line:73 Adhikart
Line:74 Hello
Line:75 World
Line:76 Random
Line:77 Stuff
Line:78 Hi
Line:79 Bye
Line:80 Ok
Line:81
Line:82 a
Line:83 b
```

```
Activities Terminal Mon 09:28 Student@project-lab: ~/Documents/190905156/Lab1
File Edit View Search Terminal Help
Line:76      Hl
Line:77      Bye
Line:78      OK
Line:1       a
Line:2       b
Line:3       c
Line:4       d
Line:5       e
Line:6       f
Line:7       g
Line:8       h
Line:9       i
Line:10      j
Line:11      k
Line:12      l
Line:13      m
Line:14      n
Line:15      o
Line:16      p
Line:17      q
Line:18      r
Line:19      s
Line:20      t
Line:21      u
Line:22      v
Line:23      w
Line:24      x
Line:25      y
Line:26      z
Line:27      a
Line:28      b
Line:29      c
Line:30      d
Line:31      e
Line:32      f
Line:33      g
Line:34      h
Line:35      i
Line:36      j
Line:37      k
Line:38      l
Line:39      m
Line:40      n
Line:41      o
```

```
Activities Terminal Mon 09:28 Student@project-lab: ~/Documents/190905156/Lab1
File Edit View Search Terminal Help
Line:36      j
Line:37      k
Line:38      l
Line:39      m
Line:40      n
Line:41      o
Line:42      p
Line:43      q
Line:44      r
Line:45      s
Line:46      t
Line:47      u
Line:48      v
Line:49      w
Line:50      x
Line:51      y
Line:52      z
Line:53      Hl
Line:54      there
Line:55      Thlse
Line:56      islse
Line:57      Rheae
Line:58      aheae
Line:59      bheae
Line:60      cheae
Line:61      dheae
Line:62      eheae
Line:63      fheae
Line:64      gheae
Line:65      hheae
Line:66      iheae
Line:67      jheae
Line:68      kheae
Line:69      lheae
Line:70      nheae
Line:71      oheae
Line:72      qheae
Line:73      pheae
Line:74      qheae
Line:75      rheae
Line:76      sheae
Line:77      theae
Line:78      uheae
```



```
Line:50      x
Line:51      y
Line:52      z
Line:53      Ht
Line:54      there
Line:55      Thise
Line:56      isise
Line:57      Rheae
Line:58      aheae
Line:59      bheae
Line:60      cheae
Line:61      dheae
Line:62      eheae

Line:63      fheae
Line:64      gheae
Line:65      hheae
Line:66      iheae
Line:67      jheae
Line:68      kheae
Line:69      lheae
Line:70      mheae
Line:71      nheae
Line:72      oheae
Line:73      pheae
Line:74      qheae
Line:75      rheae
Line:76      sheae
Line:77      theae
Line:78      uheae
Line:79      vheae
Line:80      wheae
Line:81      xheae
Line:82      yheae

Line:83      zheae
Line:84      Adhikart
Line:85      Helloart
Line:86      Worldart
Line:87      Randomrt
Line:88      Stuffmrt
Line:89      Hluffmrt
Line:90      Byeffmrt
Line:91      Okeffmrt
Student@project-lab: ~/Documents/190905156/Lab1$
```

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

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

```
int main()
{
    int a=100;
    float b=100.99;
    char c='a';
    char str[]="Rhea Adhikari";
    printf("Integer : a=%d\n",a);
    printf("Float : b=%f\n",b);
    printf("Character : c=%c\n",c);
    printf("String : str=%s\n",str);
    printf("Scientific Notation: %e\n", b);
    printf("Octal for 100: %o\n", a);
    printf("Hexadecimal for 100 : %x\n",a);
}
```

```
Student@project-lab: ~/Documents/190905156/Lab1
File Edit View Search Terminal Help
Student@project-lab:~/Documents/190905156/Lab1$ gcc third.c -o third
Student@project-lab:~/Documents/190905156/Lab1$ ./third
Integer : a=100
Float : b=100.989998
Character : c=a
String : str=Rhea Adhikari
Scientific Notation: 1.009900e+02
Octal for 100: 144
Hexadecimal for 100 : 64
Student@project-lab:~/Documents/190905156/Lab1$
```

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

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

int main(int argc, char *argv[])
{
    char c;
    int in,out;

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

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

    if( in==-1 || out==-1)
    {
        printf("File not found\n");
        exit(1);
    }

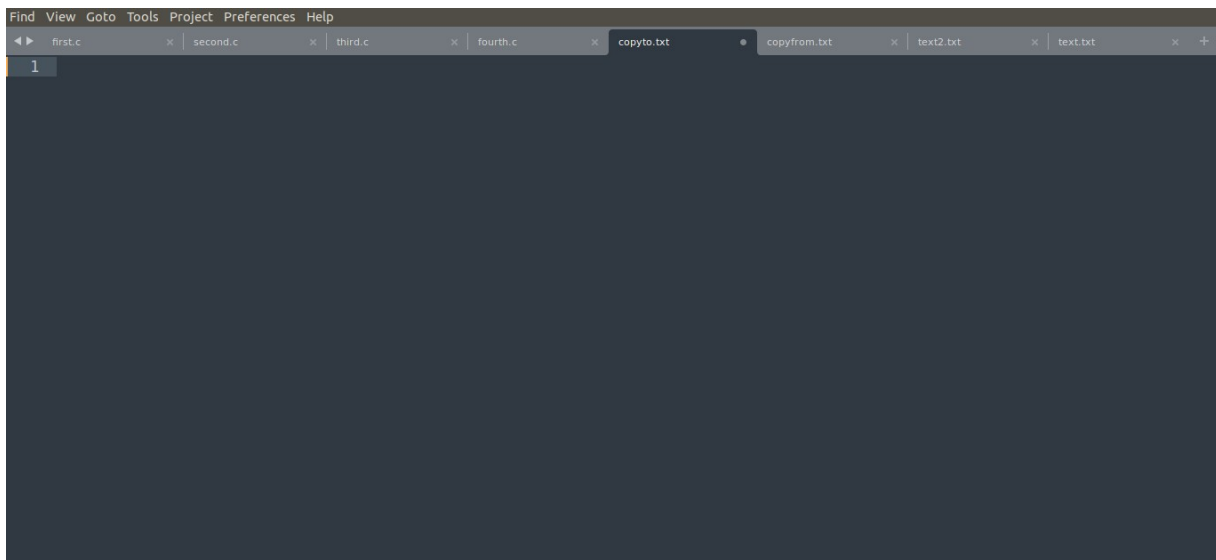
    while(read(in,&c,1) == 1)
    {
        write(out,&c,1);
    }

    printf("Contents of file have been copied!\n");
}
```

```
exit(0);
```

```
}
```

Before copy



After copy

