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BATCH : B10

Software Development Fundamentals – I(15B11CI111)

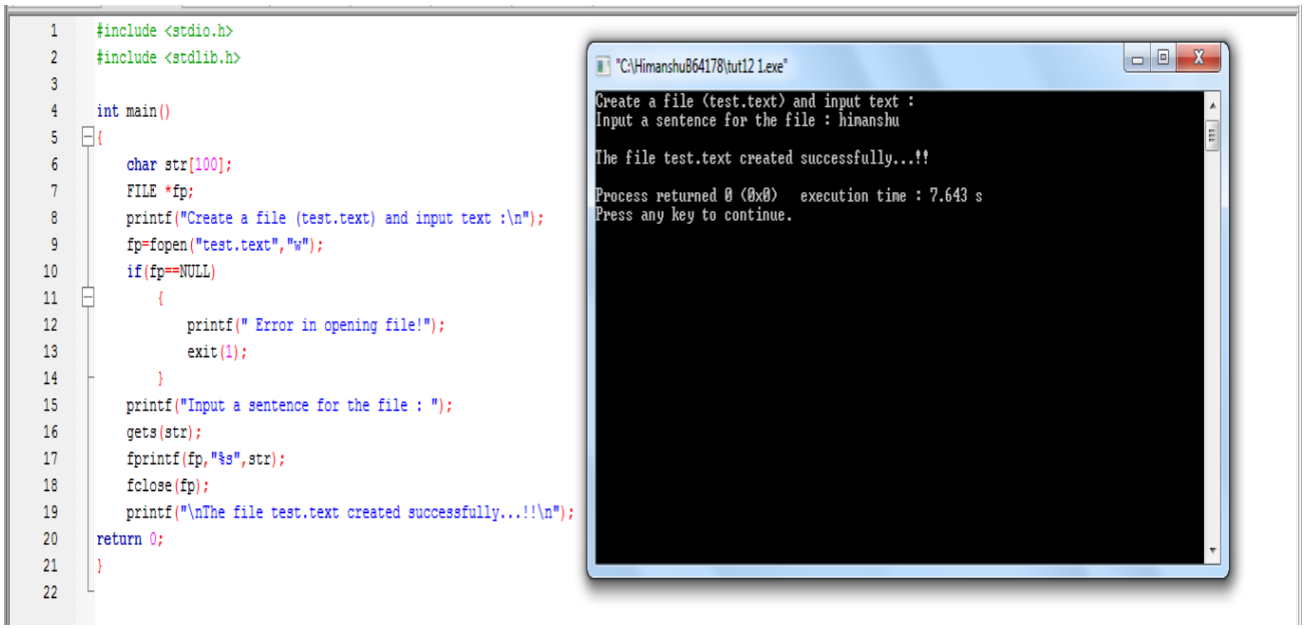
ODD 2021

Tutorial Sheet – 12

Q1. *Write a program in C to create and store information in a text file.*

Solution :

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

int main()
{
   char str[100];
   FILE *fp;
   printf("Create a file (test.text) and input text :\n");
   fp=fopen("test.text","w");
   if(fp==NULL)
      {
         printf(" Error in opening file!");
         exit(1);
      }
   printf("Input a sentence for the file : ");
   gets(str);
   fprintf(fp,"%s",str);
   fclose(fp);
   printf("\nThe file test.text created successfully...!!\n");
return 0;
}
```



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

int main()
{
    char str[100];
    FILE *fp;
    printf("Create a file (test.text) and input text :\n");
    fp=fopen("test.text","w");
    if(fp==NULL)
        {
            printf(" Error in opening file!");
            exit(1);
        }
    printf("Input a sentence for the file : ");
    gets(str);
    fprintf(fp,"%s",str);
    fclose(fp);
    printf("\nThe file test.text created successfully...!!\n");
return 0;
}
```

```
"C:\HimanshuB64178\tut12 1.exe"
Create a file (test.text) and input text :
Input a sentence for the file : himanshu

The file test.text created successfully...!!

Process returned 0 (0x0)   execution time : 7.643 s
Press any key to continue.
```

Q2. *Write a program in C to write multiple lines in a text file.*

Test Data :

Input the number of lines to be written : 3
The lines are
I am at JIIT.
Enrolled in SDF1.
I am in Noida.

Expected Output :

The content of the file test.txt is :
I am at JIIT.
Enrolled in SDF1.
I am in Noida.

Solution :

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

int main()
{
   char str[100],ch;
   int n;
   FILE *fp;
   printf("Enter no. of lines : \n");
```

```
   scanf("%d",&n);
   fflush(stdin);
   fp=fopen("test.text","w");
   if(fp==NULL)
      {
         printf(" Error in opening file!");
         exit(1);
      }
   printf("Enter the lines : \n");
   for(int i=0;i<n;i++){
      gets(str);
      fprintf(fp,"%s\n",str);
   }
   fclose(fp);
   printf("\nThe file test.text created successfully...!!\n\n\n");
   fp=fopen("test.text","r");
   if(fp==NULL)
      {
         printf(" Error in opening file!");
         exit(1);
      }
   printf("The content of the file test.txt is  : \n");
  ch=fgetc(fp);
  while(ch != EOF){
   printf("%c",ch);
   ch=fgetc(fp);

  }
   fclose(fp);
return 0;
}
```

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

int main()
{
    char str[100],ch;
    int n;
    FILE *fp;
    printf("Enter no. of lines : \n");
    scanf("%d",&n);
    fflush(stdin);
    fp=fopen("test.text","w");
    if(fp==NULL)
        {
            printf(" Error in opening file!");
            exit(1);
        }
    printf("Enter the lines : \n");
    for(int i=0;i<n;i++){
        gets(str);
        fprintf(fp,"%s\n",str);
    }
    fclose(fp);
    printf("\nThe file test.text created successfully...!!\n\n\n");
    fp=fopen("test.text","r");
    if(fp==NULL)
        {
            printf(" Error in opening file!");
            exit(1);
        }
    printf("The content of the file test.txt is  : \n");
   ch=fgetc(fp);
   while(ch != EOF){
    printf("%c",ch);
    ch=fgetc(fp);

```

```
"C:\HimanshuB64178\tut12 2.exe"
Enter no. of lines :
3
Enter the lines :
I am at JIIT
Enrolled in SDF1
I am in Noida

The file test.text created successfully...!!


The content of the file test.txt is  :
I am at JIIT
Enrolled in SDF1
I am in Noida

Process returned 0 (0x0)   execution time : 45.944 s
Press any key to continue.
```

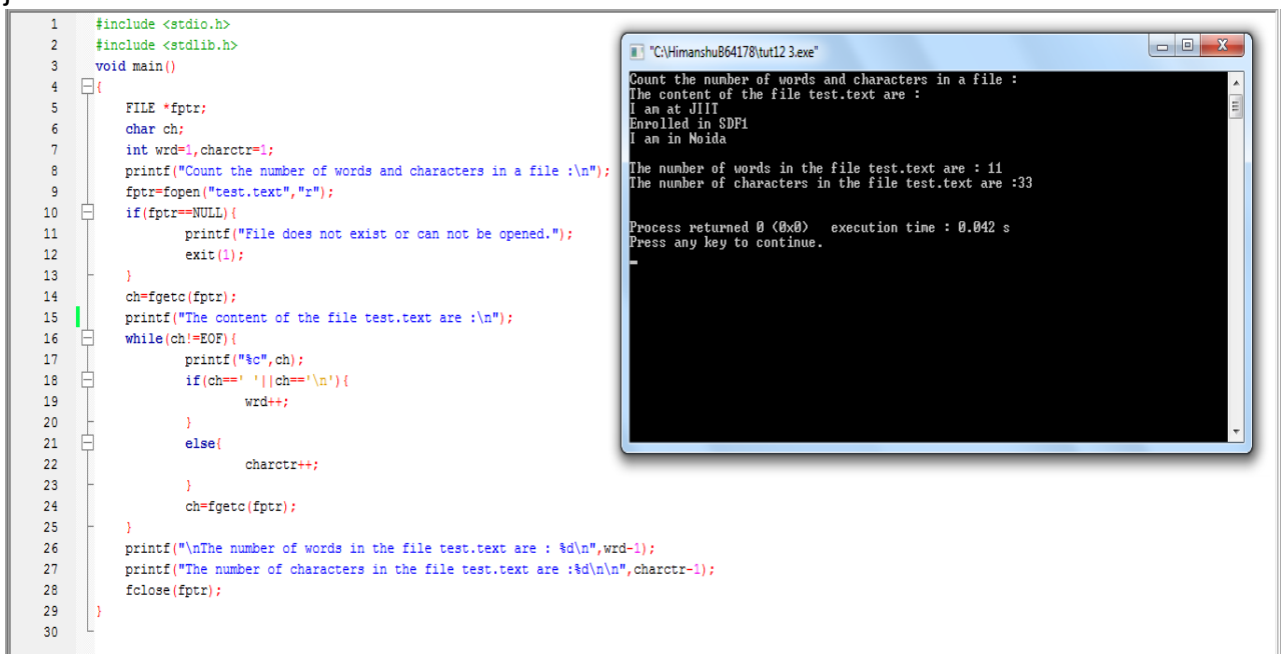
.

Q3. *Write a program in C to count a number of words and characters in a file.*

Solution :

```c
#include <stdio.h>
#include <stdlib.h>
void main()
{
   FILE *fptr;
   char ch;
   int wrd=1,charctr=1;
   printf("Count the number of words and characters in a file :\n");
   fptr=fopen("test.text","r");
   if(fptr==NULL){
         printf("File does not exist or can not be opened.");
         exit(1);
   }
   ch=fgetc(fptr);
   printf("The content of the file test.text are :\n");
   while(ch!=EOF){
         printf("%c",ch);
         if(ch==' '||ch=='\n'){
```

```
            wrd++;
        }
        else{
            charctr++;
        }
        ch=fgetc(fptr);
    }
    printf("\nThe number of words in the file test.text are : %d\n",wrd-1);
    printf("The number of characters in the file test.text are :%d\n\n",charctr-1);
    fclose(fptr);
}
```



```
#include <stdio.h>
#include <stdlib.h>
void main()
{
    FILE *fptr;
    char ch;
    int wrd=1,charctr=1;
    printf("Count the number of words and characters in a file :\n");
    fptr=fopen("test.text","r");
    if(fptr==NULL){
            printf("File does not exist or can not be opened.");
            exit(1);
    }
    ch=fgetc(fptr);
    printf("The content of the file test.text are :\n");
    while(ch!=EOF){
            printf("%c",ch);
            if(ch==' '||ch=='\n'){
                    wrd++;
            }
            else{
                    charctr++;
            }
            ch=fgetc(fptr);
    }
    printf("\nThe number of words in the file test.text are : %d\n",wrd-1);
    printf("The number of characters in the file test.text are :%d\n\n",charctr-1);
    fclose(fptr);
}
```

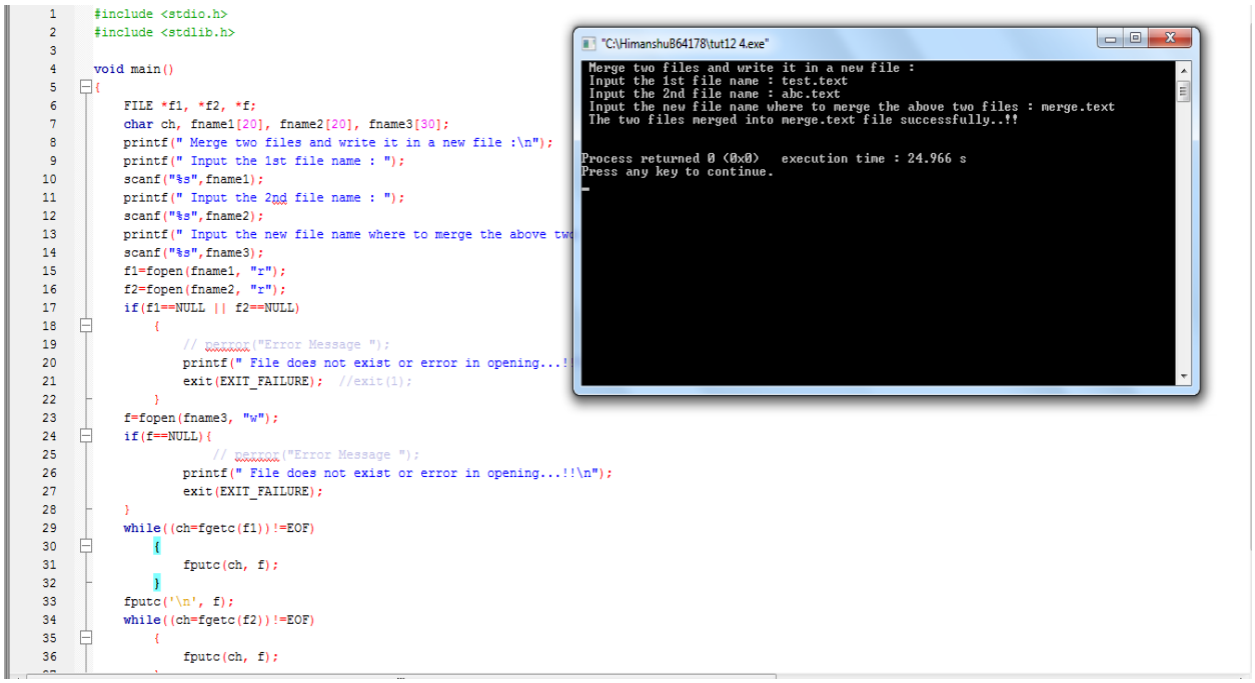
```
"C:\Himanshu864178\tut12 3.exe"
Count the number of words and characters in a file :
The content of the file test.text are :
I am at JIIT
Enrolled in SDF1
I am in Noida

The number of words in the file test.text are : 11
The number of characters in the file test.text are :33


Process returned 0 (0x0)   execution time : 0.042 s
Press any key to continue.
```

Q4. *Write a program in C to merge two files and write it in a new file.*

Solution :

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

void main()
{
    FILE *f1, *f2, *f;
    char ch, fname1[20], fname2[20], fname3[30];
    printf(" Merge two files and write it in a new file :\n");
```

```
   printf(" Input the 1st file name : ");
   scanf("%s",fname1);
   printf(" Input the 2nd file name : ");
   scanf("%s",fname2);
   printf(" Input the new file name where to merge the above two files : ");
   scanf("%s",fname3);
   f1=fopen(fname1, "r");
   f2=fopen(fname2, "r");
   if(f1==NULL || f2==NULL)
      {
         // perror("Error Message ");
         printf(" File does not exist or error in opening...!!\n");
         exit(EXIT_FAILURE);  //exit(1);
      }
   f=fopen(fname3, "w");
   if(f==NULL){
            // perror("Error Message ");
         printf(" File does not exist or error in opening...!!\n");
         exit(EXIT_FAILURE);
   }
   while((ch=fgetc(f1))!=EOF)
      {
         fputc(ch, f);
      }
   fputc('\n', f);
   while((ch=fgetc(f2))!=EOF)
      {
         fputc(ch, f);
      }
   printf(" The two files merged into %s file successfully..!!\n\n", fname3);
   fclose(f1);
   fclose(f2);
   fclose(f);
}
```



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

void main()
{
    FILE *f1, *f2, *f;
    char ch, fname1[20], fname2[20], fname3[30];
    printf(" Merge two files and write it in a new file :\n");
    printf(" Input the 1st file name : ");
    scanf("%s",fname1);
    printf(" Input the 2nd file name : ");
    scanf("%s",fname2);
    printf(" Input the new file name where to merge the above tw
    scanf("%s",fname3);
    f1=fopen(fname1, "r");
    f2=fopen(fname2, "r");
    if(f1==NULL || f2==NULL)
        {
            // perror("Error Message ");
            printf(" File does not exist or error in opening...!
            exit(EXIT_FAILURE);  //exit(1);
        }
    f=fopen(fname3, "w");
    if(f==NULL){
                // perror("Error Message ");
            printf(" File does not exist or error in opening...!!\n");
            exit(EXIT_FAILURE);
    }
    while((ch=fgetc(f1))!=EOF)
        {
            fputc(ch, f);
        }
    fputc('\n', f);
    while((ch=fgetc(f2))!=EOF)
        {
            fputc(ch, f);
```

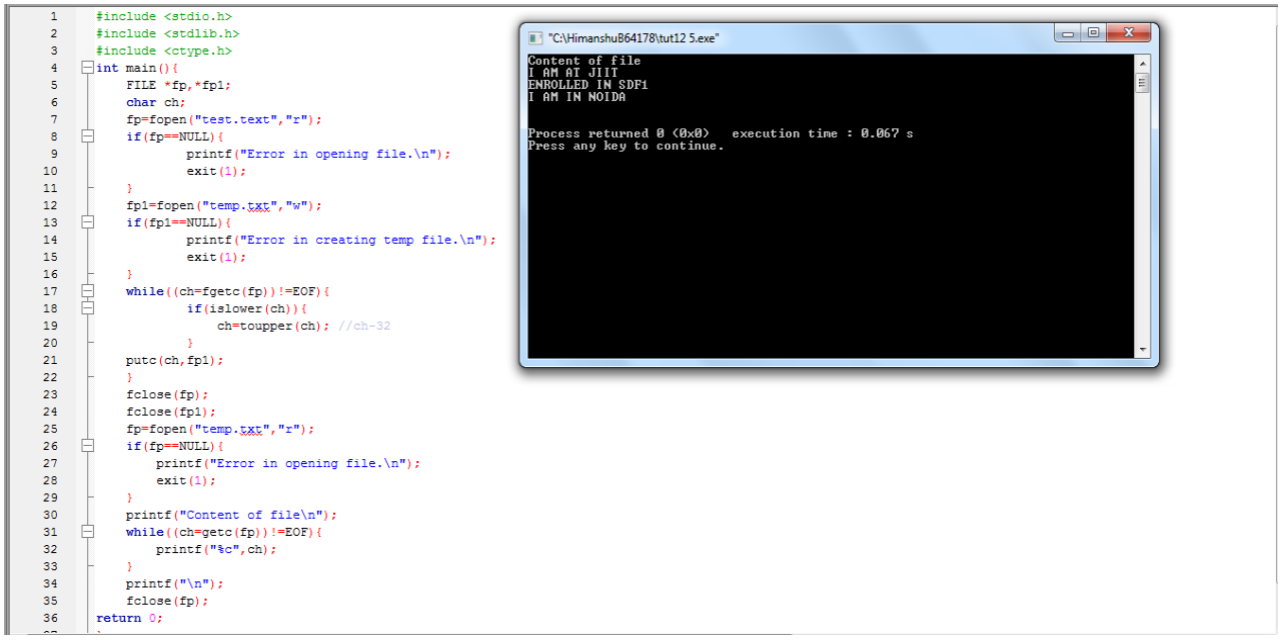
```
"C:\Himanshu864178\tut12 4.exe"
Merge two files and write it in a new file :
Input the 1st file name : test.text
Input the 2nd file name : abc.text
Input the new file name where to merge the above two files : merge.text
The two files merged into merge.text file successfully..!!


Process returned 0 (0x0)   execution time : 24.966 s
Press any key to continue.
```

Q5. *Convert All Characters in Upper Case of a File using C Program*

Solution :

```c
#include <stdio.h>
#include <stdlib.h>
#include <ctype.h>
int main(){
   FILE *fp,*fp1;
   char ch;
   fp=fopen("test.text","r");
   if(fp==NULL){
         printf("Error in opening file.\n");
         exit(1);
   }
   fp1=fopen("temp.txt","w");
   if(fp1==NULL){
         printf("Error in creating temp file.\n");
         exit(1);
   }
   while((ch=fgetc(fp))!=EOF){
         if(islower(ch)){
```

```
            ch=toupper(ch); //ch-32
        }
    putc(ch,fp1);
    }
    fclose(fp);
    fclose(fp1);
    fp=fopen("temp.txt","r");
    if(fp==NULL){
       printf("Error in opening file.\n");
       exit(1);
    }
    printf("Content of file\n");
    while((ch=getc(fp))!=EOF){
       printf("%c",ch);
    }
    printf("\n");
    fclose(fp);
return 0;
}
```



```
#include <stdio.h>
#include <stdlib.h>
#include <ctype.h>
int main(){
    FILE *fp,*fp1;
    char ch;
    fp=fopen("test.text","r");
    if(fp==NULL){
            printf("Error in opening file.\n");
            exit(1);
    }
    fp1=fopen("temp.txt","w");
    if(fp1==NULL){
            printf("Error in creating temp file.\n");
            exit(1);
    }
    while((ch=fgetc(fp))!=EOF){
            if(islower(ch)){
                ch=toupper(ch); //ch-32
            }
    putc(ch,fp1);
    }
    fclose(fp);
    fclose(fp1);
    fp=fopen("temp.txt","r");
    if(fp==NULL){
        printf("Error in opening file.\n");
        exit(1);
    }
    printf("Content of file\n");
    while((ch=getc(fp))!=EOF){
        printf("%c",ch);
    }
    printf("\n");
    fclose(fp);
return 0;
}
```

```
"C:\HimanshuB64178\tut12 5.exe"
Content of file
I AM AT JIIT
ENROLLED IN SDFi
I AM IN NOIDA


Process returned 0 (0x0)   execution time : 0.067 s
Press any key to continue.
```

Q6. *Write a program to print reverse content of file. [using command line arguments].*

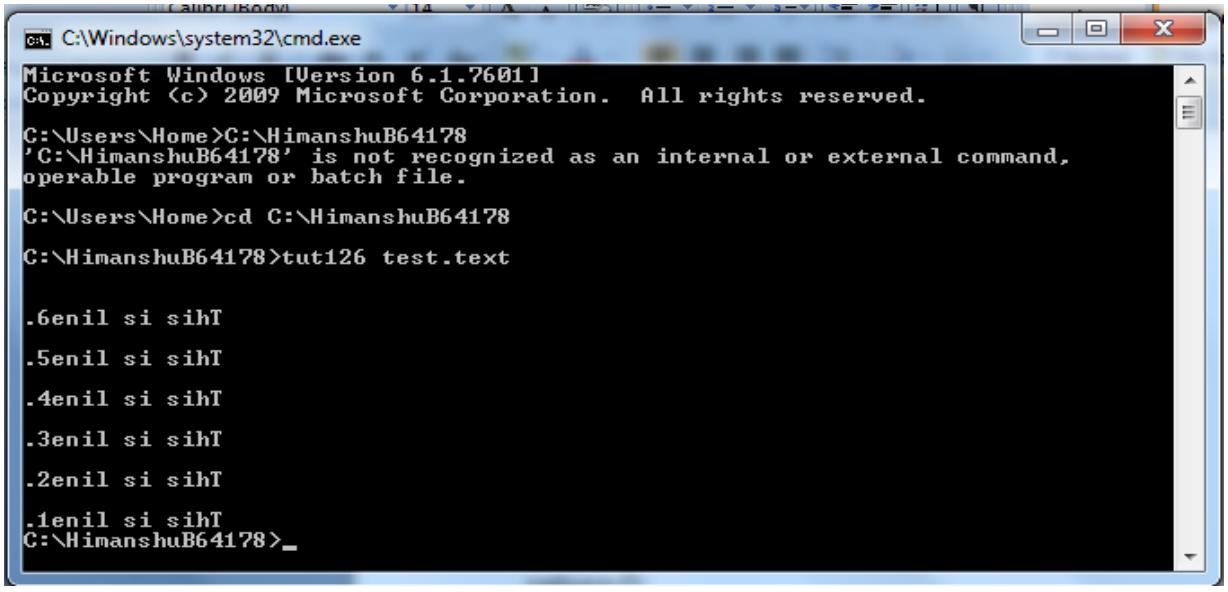
Actual file contents:
This is line1.
This is line2.
This is line3.
This is line4.
This is line5.
This is line6.
Output:

```
Terminal command: ./prg2 file1.txt
.6enil si sihT
.5enil si sihT
.4enil si sihT
.3enil si sihT
.2enil si sihT
.1enil si sihT
```

Solution :

```
#include <stdio.h>
#include <string.h>
int main(int argc, char *argv[])
{
   FILE *fp1;
   int cnt = 0;
   int i = 0;
   if( argc < 2 )
      {
         printf("Insufficient Arguments!!!\n");
         printf("Please use \"program-name file-name\"format.\n");
         return -1;
      }
   fp1 = fopen(argv[1],"r");
   if( fp1 == NULL )
      {
         printf("\n%s File can not be opened : \n",argv[1]);
         return -1;
      }
      //moves the file pointer to the end.
   fseek(fp1,0,SEEK_END);
      //get the position of file pointer.
```

```
    cnt = ftell(fp1);
    while( i<=cnt )
    {
        i++;
        fseek(fp1,-i,SEEK_END);
        printf("%c",fgetc(fp1));
    }
    fclose(fp1);
return 0;
}
```



Q7. *Point out the error/warning in the program if any?*

```
#include<stdio.h>
int main()
{
    unsigned char ch;          //error 1 ch should not be unsigned
    FILE *fp;
    fp=fopen("trial", "r");    //error 2 not giving address of file properly
    while((ch = getc(fp))!=EOF)
        printf("%c", ch);
    fclose(fp);
    return 0;
}
```

Solution :

Q8. *Write to a binary file using fwrite() using following structure:*
struct threeNum { int n1, n2, n3; };.

Solution :

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

struct threeNum{
int n1, n2, n3;
};

int main()
{
   int n;
   struct threeNum num;
   FILE *fptr;
   fptr = fopen("program.bin","wb");

   if(fptr==NULL)
   {
      printf("cannot open file");
      exit(1);
   }

   for(n=1;n<5;n++)
   {
      num.n1=n;
      num.n2=5*n;
      num.n3=5*n+1;
      fwrite(&num, sizeof(num), 1, fptr);
   }
   fclose(fptr);


   fptr = fopen("program.bin","rb");

   if(fptr==NULL)
```

```
    {
       printf("cannot open file");
       exit(1);
    }

    for(n=1;n<5;n++)
    {
       fread(&num, sizeof(num), 1, fptr);
       printf("n1=%d\nn2=%d\nn3=%d\n\n",num.n1,num.n2,num.n3);

    }
    fclose(fptr);
    return 0;
}
```

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

struct threeNum{
int n1, n2, n3;
};

int main()
{
    int n;
    struct threeNum num;
    FILE *fptr;
    fptr = fopen("program.bin","wb");

    if(fptr==NULL)
    {
        printf("cannot open file");
        exit(1);
    }

    for(n=1;n<5;n++)
    {
        num.n1=n;
        num.n2=5*n;
        num.n3=5*n+1;
        fwrite(&num, sizeof(num), 1, fptr);
    }
    fclose(fptr);


    fptr = fopen("program.bin","rb");

    if(fptr==NULL)
    {
        printf("cannot open file");
        exit(1);
```