# Block read/write

It is useful to store the block of data into the file rather than individual elements.Each block has some fixed size,it may be of strcture or of an array.It is possible that a data file has one or more structures or arrays,So it is easy to read the entire block from file or write the entire block to the file.There are two useful functions for this purpose

## 1. fwrite():

This function is used for writing an entire block to a given file.
Syntax: fwrite( ptr, size, nst, fptr);
Where ptr is a pointer which points to the arrayof struture in which data is written.
**Size** is the size of the structure
**nst** is the number of the structure
**fptr** is a filepointer.
Example program for fwrite():
**Write a program to read an employee details and write them into the file at a time using fwrite().**

```
#include<stdio.h>
#include<conio.h>
void main()
{
    struct emp
    {
        int eno;
        char ename[20];
         float sal;
     }e;
     FILE  *fp;
     fp=fopen("emp.dat", "wb");
     clrscr();
     printf("Enter employee number");
     scanf("&d",&e.eno);
     printf("Enter employee name");
     fflush(stdin);
     scanf("%s",e.ename);
     printf("Enter employee salary");
     scanf("%f",&e.sal);
     fwrite(&e,sizeof(e),1,fp);
     printf("One record stored successfully");
     getch();
 }
```

**OUTPUT:**

```
Enter employee num: 10
Enter employee name : seshu
Enter employee salary : 10000
One record stored successfully.
```

## 2. fread():

This function is used to read an entire block from a given file.
**Syntax:** fread ( ptr , size , nst , fptr);
Where **ptr** is a pointer which points to the array which receives structure.
**Size** is the size of the structure
**nst** is the number of the structure
fptr is a filepointer.

Example program for fread():
**Write a program to read an employee details at a time from a file using fread() which are written above using fwrite()and display them on the output screen.**

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

```
void main()
{
    struct emp
    {
        int eno;
        char ename[20];
         float sal;
     }e;
     FILE  *fp;
     fp=fopen("emp.dat", "rb");
     clrscr();
      if(fp==NULL)
      printf("File cannot be opened");
      else
      fread(&e,sizeof(e),1,fp);
     printf("\nEmployee number is %d",e.eno);
     printf("\nEmployee name is %s",e.ename);
     printf("\nEmployee salary is %f",e.sal);
     printf("One record read successfully");
     getch();
 }
```

**OUTPUT:**
Employee number is 10
Employee name is seshu
Employee salary is 10000.
One record read successfully.

## fprintf ()

This function is same as the printf() function but it writes the data into the file, so it has one more parameter that is the file pointer.
**Syntax:** fprintf(fptr, "controlcharacter",variable-names);
Where **fptr** is a file pointer
**Control character** specifies the type of data to be printed into file.
**Variable-names** hold the data to be printed into the file.

## fscanf ()

This function is same as the scanf() function but this reads the data from the file, so this has one more parameter that is the file pointer.
**Syntax:** fscanf(fptr, "control character", &variable-names);
Where **fptr** is a file pointer
**Control character** specifies the type of data to be read from the file.
**Address of Variable names** are those that hold the data read from the file.

Example for fprintf() and fscanf()
**Write a program to read details of an employee and print them in a file using fprintf() and read the same from the file using fscanf() and display on the output screen.**

```
#include<stdio.h>
#include<conio.h>
void main()
{
     FILE *fp;
     int eno;
     char ename[20];
     float sal;
     clrscr();
     fp=fopen("emp.dat", "w+");
     printf("Enter employee number");
     scanf("&d",eno);
     printf("Enter employee name");
     fflush(stdin);
     scanf("%s",ename);
```

```
    printf("Enter employee salary");
    scanf("%f",sal);
    fprintf(fp, "%d %s %f\n",eno,ename,sal);
    printf("Details of an employee are printed into file");
    rewind(fp);
    fscanf(fp,"%d %s %f",&eno,ename,&esal);
    printf("Details of employee are\n");
    printf("\n %d     %s     %f", eno,ename, sal);
    fclose(fp);
    getch();
}
```

**OUTPUT:**

```
Enter employee num: 10
Enter employee name : seshu
Enter employee salary : 10000
Details of an employee are printed into file.
Details of employee are
Employee number is 10
Employee name is seshu
Employee salary is 10000.
```

## feof()

The macro feof() is used for detecting whether the file pointer is at the end of file or not.It returns nonzero if the file pointer is at the end of the file otherwise it returns zero.
**Syntax:** feof(fptr);
Where fptr is a file pointer .

## ferror()

The macro ferror() is used for detecting whether an error occur in the file on filepointer or not.It returns the value nonzero if an error,otherwise it returns zero.
**Syntax:** ferror(fptr);
Where fptr is a file pointer.