Concept of Data File:

Many applications may require a large amount of data to be read, processed and also saved for later use. Such information is stored on the auxiliary memory device in the form of file. Data file is a file that we use to store, retrieve and alter information whenever necessary.

C language provides set of library functions for creating and processing data files. The prototype for all the file handling functions are declared in <stdio.h>.

Introduction to file handling in C :

1. New way of dealing with **data is file handling**.
2. Data is **stored onto the disk** and can be retrieve whenever require.
3. Output of the program may be stored onto the disk
4. In C we have many **functions that deals with file handling**
5. A file is a collection of bytes stored on a **secondary storage device** (generally a disk)
6. Collection of byte may be **interpreted as** -
    - Single character
    - Single Word
    - Single Line
    - Complete Structure.

File Handling

In this section, we will discuss about files which are very important for storing information permanently. We store information in files for many purposes, like data processing by our programs.

Types of file:

There are two types of files.

1. Sequential File:

2. Random Access File:

What is a file?

A named collection of data, stored in secondary storage (typically).

Typical operations on files:

- **Open**
- **Read**
- **Write**
- **Close**

- **How is a file stored?**
  - **Stored as sequence of bytes, logically contiguous (may not be physically contiguous on disk).**

File Operation

1. Creating a new file
2. Opening a file
3. Reading from a file
4. Writing to a file

Mode	Meaning
r	**Used to *open file* for *reading* provided that the file must exist to read it.**
w	**Used for *opening the file* for *writing.* If the *file exists*, its contents will be *erased* and if the file *doesn't exist* then it will be *created.***
a	**Used for *opening the file* to *append*(to add content to the *end of file*) if the *file exist* but if the file *doesn't exist*, the *new file* will be created and *pointer* will be at *first* i.e. 0 location for putting the *content* from the *beginning of the file.***
r+	**Used for *opening the file* for both *reading* and *writing.* The *file* must already *exist* before performing operation.**
w+	**Used for *opening file* for both *writing* and *reading.* If the *file exists,* its contents are *erased* and if the file *doesn't exist,* then it will be *created*.**
a+	**Used for *opening file* for both *reading* and *appending i*f the *file exists,* but if the file *doesn't exist,* then *new file* will be created and *pointer* will be at *first* i.e. 0 location for putting the *content* from the *beginning of the file.***

/* Program to display the contents of a file on screen */

```
#include <stdio.h>
#include <conio.h>
   void main()
   {
  printf("Hello !My dear");
    getch();
    }
```

```
#include <stdio.h>
#include <conio.h>
   void main()
   {
   FILE *fp;
    char ch;
      fp=fopen("file1.c","r");
          while(1)
          {
          ch=fgetc(fp);
           if(ch==EOF)
            break;
            printf("%c",ch);
             }
           fclose(fp);
           getch();
           }
```

while(1) mean it is an infinite loop.we can stop it only through it a condition that use break stament.

/* Program to display the contents of a file on screen */

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

   void main()
   {
   FILE *fp;
   fp=fopen("test1.txt","w");
   fprintf(fp,"%s","creat & witing in file");
    fclose(fp);
    getch();
    }
```

```
#include <stdio.h>
#include <conio.h>
void main()
{
FILE *fp;
fp = fopen("ict.txt","w");
if(fp== NULL)
printf("file not open");
else
printf("Congratularion:");
 fclose(fp);
 getch();
 }
```

```
#include <stdio.h>
#include <conio.h>
    void main()
     {
   FILE *fp;
   fp = fopen("ict.txt","r");
   char ch;
   while(1)
    {
   ch=fgetc(fp);
   if (ch==EOF)
    break;
   printf("%c",ch );
   }
   fclose(fp);
   getch();
    }
```