PROGRAMMING IN C

UNIT 4

File Handling in C

CONTENTS

FILE

- File is a collection of bytes that is stored on secondary storage devices like disk.
- File is created for permanent storage of data. It is a ready made structure.There are two kinds of files in a system. They are,
  - Text files (ASCII)
  - Binary files
- Text files contain ASCII codes of digits, alphabetic and symbols.
- Binary file contains collection of bytes (0's and 1's). Binary files are compiled version of text files.

OPERATIONS ON FILE

- So far the operations using C program are done on a prompt / terminal which are not stored anywhere. But in software industry, most of the programs are written to store the information fetched from the program. One such way is to store the fetched information in a file.
- **Operations on file:**
  - Creation of a new file (fopen with attributes as "a" or "a+" or "w" or "w++")
  - Opening an existing file (fopen)
  - Reading from file (fscanf or fgetc)
  - Writing to a file (fprintf or fputs)
  - Moving to a specific location in a file (fseek, rewind)
  - Closing a file (fclose)

File input / output in C

- In C language, we use a structure **pointer of file type** to declare a file.

  FILE *fp;

- **File Functions in C**

Function	description
fopen()	create a new file or open a existing file
fclose()	closes a file
getc()	reads a character from a file
putc()	writes a character to a file
fscanf()	reads a set of data from a file
fprintf()	writes a set of data to a file
getw()	reads a integer from a file
putw()	writes a integer to a file
fseek()	set the position to desire point
ftell()	gives current position in the file

Example

```
#include<stdio.h>
void main()
 {
FILE *fp;
char ch;
fp = fopen("one.txt", "w");
printf("Enter data...");
while( (ch = getchar()) != EOF)
{
putc(ch, fp);
}
fclose(fp);
 fp = fopen("one.txt", "r");
while( (ch = getc(fp)! = EOF)
printf("%c",ch); // closing the file pointer
fclose(fp);
}
```

File Access Modes

- **"r"** – Searches file. If the file is opened successfully fopen( ) loads it into memory and sets up a pointer which points to the first character in it. If the file cannot be opened fopen( ) returns NULL.
- **"w"** – Searches file. If the file exists, its contents are overwritten. If the file doesn't exist, a new file is created. Returns NULL, if unable to open file.
- **"a"** – Searches file. If the file is opened successfully fopen( ) loads it into memory and sets up a pointer that points to the last character in it. If the file doesn't exist, a new file is created.
- **"r+"** – Searches file. If is opened successfully fopen( ) loads it into memory and sets up a pointer which points to the first character in it. Returns NULL, if unable to open the file.
- **"w+"** – Searches file. If the file exists, its contents are overwritten. If the file doesn't exist a new file is created. Returns NULL, if unable to open file.
- **"a+"** – Searches file. If the file is opened successfully fopen( ) loads it into memory and sets up a pointer which points to the last character in it. If the file doesn't exist, a new file is created.

fseek(), ftell() and rewind() functons

- fseek(): It is used to move the reading control to different positions using fseek function.
- ftell(): It tells the byte location of current position of cursor in file pointer.
- rewind(): It moves the control to beginning of the file.

REFERENCES

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