**CHAPTER 7**

**File Management**

**Q1:** A file must be opened so that
(a) the program knows how to access the file
(b) the operating system knows which file to access
(c) the operating system knows if the file should be read from or written to
(d) communication areas are established for communication with the file

**Answer:** (a) the program knows how to access the file

**Q.2:** Fill in the blanks.
(a) A file opened with fopen() will thereafter be referred by its

___________.

(b) When reading one character at a time from a file the function

__________ is used.

(c) To write a small number of mixed string and integer variables to file, the appropriate function is

___________.

(d) The function used to close a file is

___________.

**Answers:** (a) variable (b) getc() (c) fprintf() (d) fclose()

**Q3:** Write a program that will read a C source file and verify that the number of right and left braces in the file are equal. Use getc() function to read the file.

**Answer:**

```c
#include <stdio.h>

void main(void)
{
    FILE *fpotr;
    char ch;
    int leftbrace=0, rightbrace=0;

    fpotr=fopen("test.c","r");
    while((ch=getc(fptr))!=EOF)
    {
        // Your code here to count left and right braces
    }
}
```
```c
{ if(ch=='{')
    leftbrace=leftbrace+1;
  else if(ch=='}')
    rightbrace=rightbrace+1;
}
printf("\nLeft braces = %d", leftbrace);
printf("\nRight braces = %d", rightbrace);
if(leftbrace==rightbrace)
  printf("\nBoth braces are equal");
else
  printf("\nBoth braces are not equal");
fclose(fpotr);
}

OUTPUT

Left braces = 2
Right braces = 2
Both braces are equal

Q4: Write a program that will read names and marks of six subjects of five students and stores them in a file called result.txt

Answer:

PROGRAM
#include <stdio.h>

void main(void)
{
    FILE *fpotr;
    char sname[40];
    int s[6], x, y;

    fpotr=fopen("data.txt","w");
    for(x=0; x<=5; x++)
    {
        printf("Enter name of student %d: ", x+1);
        scanf("%s", sname);
        for(y=0; y<=5; y++)
        {
            printf("Enter Subject %d marks: ", y+1);
```
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Chapter 7

```c
scanf("%d", &y);
}
fprintf(fp,"%s %d %d %d %d %d %d", sname,
    s[0], s[1], s[2], s[3], s[4], s[5]);
fprintf(fp, 
"
"); 
fclose(fp);
```

**OUTPUT**

Enter name of student 1: Ahmad
Enter Subject 1 marks: 65
Enter Subject 2 marks: 75
Enter Subject 3 marks: 85
Enter Subject 4 marks: 66
Enter Subject 5 marks: 70
Enter Subject 6 marks: 90

Enter name of student 2: Karim

Q5: Write a program that will read names and marks of six subjects of five students from the result.txt file created in the previous question and prints each student’s name along with his total and average marks.

**Ans:**

```c
#include <stdio.h>

void main(void)
{
    FILE *fp;
    char sname[40];
    int s[6], x, y, tmarks, amarks;
    fp=fopen("data.txt","r");

    while(fscanf(fp,"%s %d %d %d %d %d %d", sname,&s[0], &s[1], &s[2], &s[3], &s[4], &s[5])!=EOF)
    {
```
amarks=tmarks/5;
printf("%s %d %d %d %d %d", sname, s[0], s[1], s[2], s[3], s[4], s[5]);
printf("Total Marks = %d, Average Marks = %d\", tmarks, amarks);
}
close(fptr);

OUTPUT

Ahmad 65 75 85 66 70 90
Total Marks = 451, Average Marks = 75

Objective Questions and Answers

Multiple Choice Questions

1. File manipulation functions in C are available in which header file?
   (a) streams.h (b) stdio.h (c) stdlib.h (d) files.h

2. In the C Language input/output operations on disks are performed using entities called _________.
   (a) Data (b) Files (c) Directories (d) Functions

3. A ________ is a collection of bytes that is given a name.
   (a) Language (b) Character (c) File (d) None of them

4. Which statement defines the file structure?
   a. FILE *fptr;  b. FILE *fptr;
   c. OPENFILE *fptr;  d. OPENFILE *, *ptr;

5. Which statement open the file in both reading and writing mode?
   (a) fptr=fopen("test.txt","a+");
   (b) fptr=fopen("test.txt","w");
6. We use the function __________ to read data from a file.
   (a) inputc()  (b) getc()  (c) getcharacter()  (d) inputchar()

7. What is the usage of putc() function?
   (a) It is used to print a character on screen
   (b) It is used to print a character to the printer
   (c) It is used to read a character on screen
   (d) It is used to write a character to a file

8. To write a character to the file we use function __________.
   (a) writec()   (b) putc()   (c) putp()   (d) writep()

9. When we have finished writing to the file, we use the statement __________.
   (a) fileclose(fpstr);   (b) fclose(fpstr);
   (c) fclose(fpstr);    (d) fileclose(fileptr);

10. When the operating system realize that the last character in a file has been sent it transmits the __________.
    (a) -2 signal   (b) End signal
    (c) EOF signal   (d) EFO signal

11. __________ message tells that the file is not opened.
    (a) NOTOPEN   (b) NULL
    (c) NULLFILE   (d) NU

12. NULL is equivalent to a value of __________.
    (a) 0   (b) 1
    (c) 2   (d) 6

13. To write strings to a file, we use the function __________.
    (a) fopen()   (b) fputs()
    (c) getch()   (d) putc()

14. What statement is used to add a newline character to the end of the line?
    (a) printf("\n",fpstr);
    (b) fputs("\n",fpstr);
    (c) fgets("\n",fpstr);
    (d) fputs("\n",fpstr);

15. For reading strings from a file we use the function __________.
    (a) fopen()   (b) fgets()
    (c) fputs()   (d) fprintf()

16. Function fgets() takes __________ parameters.
    (a) Two   (b) Three
17. The function used for formatted output and input.
   (a) `fprint f ( )`  (b) `fscan f ( )`
   (c) `a and b both`  (d) `All of them`

18. What does the statement "`fprintf(fp, "%s %d %f", name, weight, height);" will do?
   (a) writes the values of three variables to the file
   (b) print the values of three variables to the screen
   (c) writes the values of three variables to the printer
   (d) read the values of three variables from the file

19. `fscanf()` function used to read the data is very similar to the function
   (a) `printf()`  (b) `fprintf()`
   (c) `scanf()`  (d) `scanfstr()`

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**Short Questions and Answers**

Q.1. How can we handle the small amount of input/output data?
*Ans:* When we are dealing with small amount of input/output data the input can be entered from the keyboard and output can be displayed on the monitor or printed on the printer.

Q.2. Define a file.
*Ans:* A file is a collection of bytes that is given a name.

Q.3. What does C language provides to handle data file?
*Ans:* C language provides facilities to read and write files in a variety of ways.
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**Q.1. How can we handle the small amount of input/output data?**

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**Q.2. Define a file.**

**Ans:** A file is a collection of bytes that is given a name.

**Q.3. What does C language provides to handle data file?**

**Ans:** C language provides facilities to read and write files in a variety of ways.
Q.4. Define the character input/output method.
Ans: In this method data can be read or written one character at a time. This is very similar to how the functions such as putchar() and getche() read data from the keyboard and write it to the screen.

Q.5. Which statement defines the file structure?
Ans: The statement "FILE * fptr;" defines the file structure.

Ans: The file structure contains information about the file being used.

Q.7. Explain the statement "fptr = fopen("test.txt", "w");".
Ans: This tells the operating system to open a file data called "test.txt". In this statement "w" indicates that we will be writing to the file. The fopen function returns a pointer to the FILE structure for our file which we store in the variable fptr.

Q.8. What is the purpose of "putc(ch, fptr);" statement?
Ans: The purpose of this statement is to write a character stored in "ch" to the file whose file structure is pointed to by the variable fptr which we obtained when we opened the file.

Q.9. What is the function of the statement "fclose(fptr);"?
Ans: Statement fclose(fptr); means close the file whose FILE structure is pointed to by the variable fptr. The pointer fptr has become our key for communication with the file and used to refer to it.

Q.10. Describe the statement "fputs("\n",fptr);".
Ans: This statement adds a newline character to the end of the line. We need this statement to do this because the fputs() function does not automatically add a newline character at the end of the string.

Q.11. Which function is used for reading strings from a file?
Ans: For reading strings from a file we use the function fgets().

Q.12. Explain the function "fgets(string, 80,fptr);".
Ans: It takes three parameters. The first is the address where the string will be started and the second is the maximum length of the string. The third parameter "fptr" is the pointer to the FILE structure of the file.

Q.13. Which functions are used for formatted read and write operation?
Ans: Functions scanf() and printf() are used for formatted read and write operations.