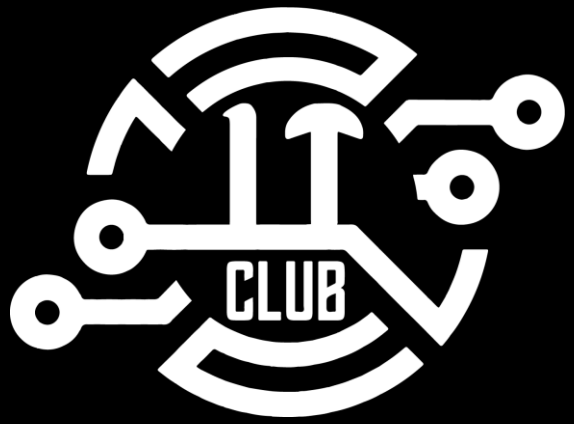
A WORKSHOP ON

THE C PROGRAMMING LANGUAGE



LECTURE 6

The File Remembers

Data File

File is a **computer resources** which is used for storing **data** in a **storage device.** The data file allows us to store data permanently and to access and alter the information whenever necessary.

In this session, we are going to discuss about the **two types of data files** and they are:

1. Text File
2. Binary File

Why Data Files

1. When the program terminates, entire data is lost. And so to store the data we need permanently we need to store them in files.
2. If you have to enter large amounts of data, it takes lots of time and so we can just create and store files and append when needed.
3. We can easily move data from one location to another without any changes.

Operation We Will Learn Today

1. Opening an existing file
2. Creating a new file
3. Reading from and writing to the file
4. Append information to the file
5. Closing the file

Opening and Closing a File

Step 1 : Declare File pointer variable

```
FILE * ptr_variable;
```

Step 2 : Open the file

```
ptr_variable = fopen(file_name, file_mode);
```

Step 3 : Close the file

```
fclose(ptr_variable);
```

File Opening Modes

1. “w” (write a file)
2. “r” (read a file)
3. “a” (append a file)
4. “r+” (read + write)
5. “w+” (write + read)
6. “a+” (append + read)

Library Function For Reading/Writing to a File

Library Function For Reading/Writing to a File

LECTURE 6

The File Remembers

String Input/Output

1. **fputs() for writing**

Syntax : `fputs(string, file_ptr_variable);`

1. **fgets() for reading**

Syntax : `fgets(string_variable, int_value, file_ptr_variable);`

int_value : no. of characters to be read.

Character Input/Output

1. **fgetc()**

Syntax : `fgetc(file_ptr_variable);`

1. **fputc()**

Syntax : `fputc(character, file_ptr_variable);`

End of File(EOF)

1. End of File represents an integer.

1. It determines whether the file associated with a file handle has reached the end of file.

Copy and Paste Application

LECTURE 6

The File Remembers

Formatted Input/Output

1. fprintf()

Syntax : `fprintf(file_ptr_varible, "control string", list_variables);`

1. fscanf()

Syntax : `fscanf(file_ptr_variable, "control_string", list_variables);`

Record Input / Output

Record Input/Output is used to store or retrieve the complex data types like array and structure in the file. Record Input/Output write the data in binary form.

1. fwrite()

Syntax : `fwrite(&ptr, size_of_array or structure, number_of_array or  structure, fptr);`

1. fread()

Syntax : `fread(&ptr, size_of_array or structure, number_of_array or  structure, fptr)`

Parameters Description

ptr : The address of an array or a structure to be written

size_of_array_or_structure : Size of the structure or array to be written, sizeof(array or structure)

number_of_structure_array : an integer value that indicates the number of structure or array to be written

fptr : file pointer of a file opened in a binary mode.

Text Data Files	Binary Data Files
A text file stores data in the form of alphabets, digits and other special symbols by storing their ASCII values and are in a human readable format.	A binary file contains a sequence or a collection of bytes which are not in a human readable format.
A special character whose value is 26 in decimal is inserted at the end of the file.	No such special character to determine the end of file.
can store only plain text.	Can store image, audio, text, etc.

‘\0’

LECTURE 6

The File Remembers