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**Introduction to 'C' Language - Module 2**

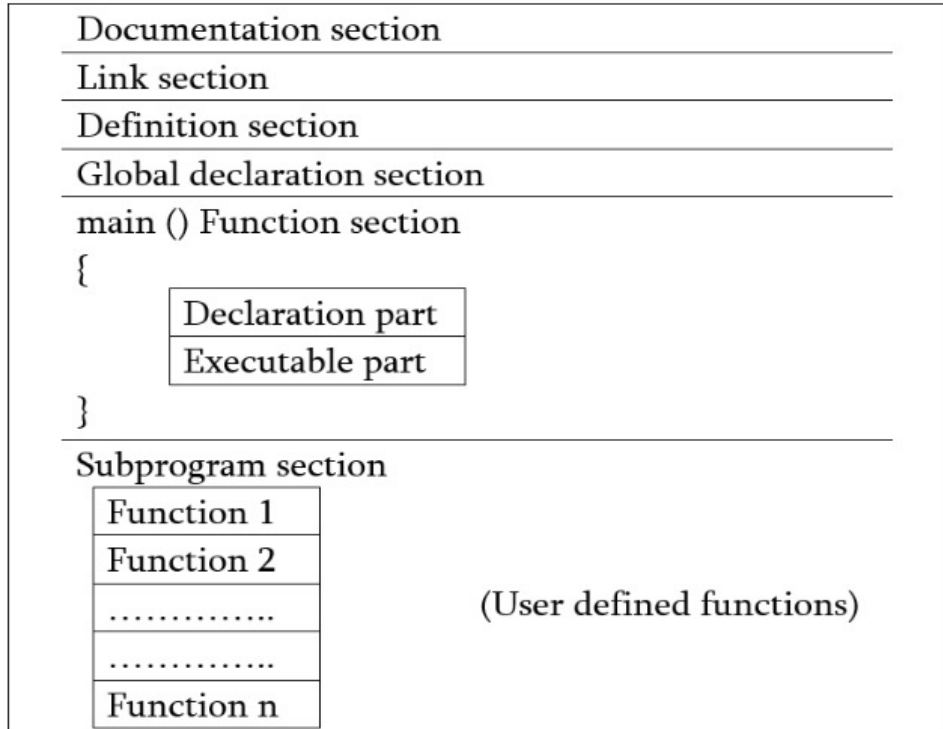
**Structure of a C Program**

A C program is typically organized into several sections, each serving a specific purpose and contributing to the proper execution of the program. Here are the six basic sections:

1. Documentation Section
2. Preprocessor Section
3. Definition Section
4. Global Declaration Section
5. Main() Function
6. Sub Programs



**BASIC STRUCTURE OF C PROGRAMMING**



**Detailed Explanation of Each Section**

**1. Documentation Section**

This section includes comments that provide information about the program, such as the program's purpose, author, date of creation, and any other relevant details. Comments help in understanding and maintaining the code.



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Example:

```
c Copy code  
  
/*  
 * Program: Simple Addition  
 * Author: Mahesh Kumar  
 * Date: 01/01/2024  
 * Description: This program adds two integers and prints the result.  
 */
```

### 2. Preprocessor Section

The preprocessor section includes directives that are processed by the preprocessor before the actual compilation begins. This section typically includes file inclusions, macro definitions, and conditional compilation instructions.

```
c Copy code  
  
#include <stdio.h> // Includes the standard input/output library  
#define PI 3.14    // Defines a macro for the value of PI
```

### 3. Definition Section

This section contains symbolic constants and macro definitions that are used throughout the program. These definitions help to make the code more readable and maintainable.

```
c Copy code  
  
#define MAX 100 // Defines a symbolic constant MAX with value 100
```

### 4. Global Declaration Section

The global declaration section includes declarations of global variables and function prototypes. Global variables are accessible throughout the entire program, and function prototypes provide information about the functions used in the program.

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```
c Copy code  
  
int globalVariable; // Declaration of a global variable  
int add(int, int); // Function prototype for add function
```

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### 5. Main() Function

The main function is the entry point of every C program. It is where the execution of the program begins. The main function typically includes variable declarations, input/output operations, and calls to other functions.

```
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int main() {  
    int a, b, sum;  
  
    // Input from the user  
    printf("Enter two integers: ");  
    scanf("%d %d", &a, &b);  
  
    // Function call  
    sum = add(a, b);  
  
    // Output the result  
    printf("Sum: %d\n", sum);  
  
    return 0;  
}
```

### 6. Sub Programs

Sub programs, also known as user-defined functions, perform specific tasks within the program. They are defined after the main function and can be called from within the main function or other functions. Sub programs help in modularizing the code and promoting code reuse.

```
c Copy code  
  
// Function definition  
int add(int x, int y) {  
    return x + y;  
}
```

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Complete Example in Turbo C

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```
c Copy code
/*
 * Program: Simple Addition
 * Author: John Doe
 * Date: 01/01/2024
 * Description: This program adds two integers and prints the result.
 */

#include <stdio.h> // Includes the standard input/output library
#define MAX 100    // Defines a symbolic constant MAX with value 100

// Global variable declaration
int globalVariable = 0;

// Function prototype
int add(int, int);

int main() {
    int a, b, sum;

    // Input from the user
    printf("Enter two integers: ");
    scanf("%d %d", &a, &b);

    // Function call
    sum = add(a, b);

    // Output the result
    printf("Sum: %d\n", sum);

    return 0;
}
```