

## **Programming**

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## Programming

1. What is the purpose of the main() function in a C program? Explain its significance.

In a C program, the main () method is important, as it works as activate for a program, The computer always searches the main () function when we run a C program, and it then starts running the code from there.

2. Explain the difference between a variable declaration and a variable initialization in C.

In C, a variable declaration specifies the variable's type and name, but it has no value yet. Whereas variable initialization gives an initial value to the variable at the time of declaration or after.

3. What are the different data types available in C? Provide example of each data type.

Data types in the C programming language refers to the type of value that a varaibale can store. Its examples are:

- Int for whole number = int age= 20;
- Float for decimal numbers = float price= 12.99;
- Char for single characters = char grade = 'A';
- Void mean "no value" = void sayHello() {

Printf("Hello!");

}

1. Type conversion means changing a variable from one data type to another. Its example are:

- Implicit type conversion: #include <stdio.h>

Int main () {

Char letter = 'A'; // ASCII value = 65

Num= letter; // char is automatically converted to int

```

    Printf ("%d", num); // Output: 65

    Return 0;

}

```

- Explicit Conversion:

```

#include <stdio.h>

Int main () {

    Int num= 66;

    Char letter;

    Letter = (char)num; //int is manually converted to char

    Printf ("%c", letter); // Output: B

    Return 0;

}

```

7. The role of scanf () function is used for taking input from the user. They read the value from the keyboard and stores them in variables. It's example are:

```

#include <stdio.h>

    Int age;

    Char name [20];

    Printf("Enter your age: ");

    Scanf ("%d", &age) ; // %d for integer , & gives the memory address

    Printf("Enter your name: ");

    Scanf ("%s", name) ; // %s for string (no & needed for arrays)

```