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Q1. What is the purpose of the main() function in a C program? Explain its significance.

In C languages, the starting point of a program is the main() function. When we execute a program the program execution starts at main(). It is important as it is only with it that the program can have a defined point of entry. It also tends to pass a value to the operating system in which 0 means that the program terminated successfully.

Q2. Explain the difference between a variable declaration and a variable initialization in C.

Variable declaration is stating to the compiler that a variable exists and its type. Example:

    int age;

    "age" is declared without giving it an assigned value.

    Variable initialization is the act of assigning the variable its initial value during

    declaration. Example:

    int age = 19;

    Here "age" is both declared and assigned a value.

Q4. What are the different data types available in C? Provide examples of each data type.

There are several data types in C:

1. "int" is used to assign whole numbers. For example, int year = 25;.

2. "float" is used for decimal numbers (single precision). For example, float marks = 89.5;.

3. "double" is used for larger decimal numbers (double precision). For example, double pi = 3.14334;.

4. "char" is used for single characters. For example, char grade = 'A';.

5. "_Bool" is used for True or false (requires <stdbool.h> for bool). For example, bool is_student = true;

Q5. Explain the concept of type conversions in C. Provide examples of implicit and explicit type conversions.

Type conversion in C is altering the data type of a variable.

1. Implicit type conversion (Type Casting by the compiler) : When they are needed, type conversion is performed by the compiler. Example:

   int x = 10;

   float y = x; // automatic conversion converting int to float

2. Explicit type conversion (Type Casting by Programmer) : The programmer does their own conversion between types using casting.

   Example: float num = 5.75;

   int value = (int) num; //casts float to integer

Q7. What is the role of the scanf() function in C? Provide an example of its usage.

The scanf() function is used to take user responses in the program. It reads the value that has been inserted by the user and stores that given value in a variable.

```c
#include <stdio.h>

int main() {
   int age;
   printf("Enter your age: ");
   scanf("%d", &age);   // takes integer input and stores on variable "age"
   printf("You entered: %d", age);
   return 0;
}
```