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Input Output in C Programming

scanf() function is used to take the formatted input from the user.

Formatted Input Function Scanf() :

scanf("Control String", address_of <args>,address_of <args>);

Note the number of format specifiers in the control string is always equal to the number of argument.

An address of argument is used with the scanf, since the address of variable is required to change / assign value to it.

Example : scanf("%d %d",&a,&b); // Here %d is format specifier for integer , &a indicates we are passing the address of the variable (In more technical term we are passing the variable by reference)

scanf("%d %s %lf",&a,&var1,&var2);

Note :- In control string, there should be no comma between the format specifiers (%d %lf %c %s) Note :-

```
c      int a;
      char name[] ;
      scanf("%d %s",&a,&name);
          ^      ^
          |      |
      //      (1)  (2)
```

How Scanf works ?

Compiler will first encounter the format specifier %d at position (1) and then checks the first argument type at position (2), whether that is integer or not. Then it will encounter %s and lastly check the variable name's data type; it must match with the format specifier %s, otherwise it will throw a warning in compile time. Data won't get stored in the variable, if the format specifier is mis-matched with the argument.

scanf() function takes the input from the user and returns that value to the arguments via reference.

// in short

It returns the number of arguments or the number of inputs it is taking from the user.

Formatted Input Function Printf() :

general Syntax :

```
printf("control string",<args>,<args>);

// Ex
int age = 19;
printf("Hello, I'm Ayush, I'm %d years old",age);
printf( );
```