Type Modifiers

Data type	Format	Memory size	Accessibility range
unsigned char	%c	1 Byte	0 to 255
Char	%c	1 Byte	-128 to 127
int	%d	2 Bytes	-32768 to 32767
unsigned int	%u	2 Bytes	0 to 65535
long (or) long int	%ld	4 Bytes	-2147483648 to 2147483647
unsigned long (or) unsigned long int	%lu	4 Bytes	0 to 4294967295
float	%f	4 Bytes	3.4*(10 power -38) to 3.4*(10 power 38)
double	%lf	8 Bytes	1.7*(10 power -308) to 1.7*(10 power 308)
long double	%Lf	10 Bytes	3.4*(10 power -4932) to 1.1*(10 power 4932)
char[ ] (string)	%s		

%o Octal Base

%x Hexa decimal base

%p Memory address

What are the types of errors occurred in C program?

There are four types of errors occurred during the program execution.

Syntax errors

Runtime errors

Logical errors

Latent errors

What is the difference between interpreter and compiler?

Interpreters translate the high level language to machine level language line by line

Where as Compilers translate the entire program into machine level language.

What is the difference between declaration and definition of a variable?

Declaration only identifies the data type of a variable whereas definition causes the space to be reserved for the variable.

Thus, declaration in a place where the nature of the variable is stated but no storage is allocated whereas definition is the place where the variable is created or assigned storage.

What are the different types of modifiers in C?

There are five modifiers available in C language. They are

short

long

signed

unsigned

long

What is dangling pointers in C?

When a pointer is pointing to non existing memory location is called dangling pointer.

What is debugging?

It is the process of injecting known bugs in a program in order to train the students in debugging.

Where auto local variables are stored?

These are stored in a stack. This stack is automatically maintained by the system.

What are the differences between exit() and return statement?

First difference is that exit() is a function while return is a statement.

Second difference is that exit() function terminates the program while return statement terminate the function.

Third difference is that exit() function always return some value where it is optional for return statement.

What is token in C?

C tokens are the basic buildings blocks in C language which are constructed together to write a C program.

Each and every smallest individual unit in a C program is known as C tokens.

What are the types of C tokens?

C tokens are of six types. They are

Keyword

Identifiers

Constants

Strings

Special symbols

Operators

What is the difference between the expression "++a" and "a++"?

With ++a, the increment happens first on variable a, and the resulting value is used. This is called as Prefix increment.

With a++, the current value of the variable will be used in an operation. This is called as postfix increment.

Define pre–processor?

It is a program that processor the source code before it passes to the compiler.

What is enum in C?

Enumeration is a data type that consists of named integer constants as a list.

It starts with 0 by default and value is incremented by 1 for the sequential identifiers in the list.

What is the difference between getch() and getche()?

Both getch() and getche() are used to read single character there is very little difference

Both functions accept a character input value from the user.

When getch() is used, the key that was pressed will not appear on the screen. It is automatically captured and assigned to a variable.

While when getche() is used, the key that was pressed by the user appears on the screen and is assigned to a variable.

What are actual arguments?

When you create and use functions that need to perform an action on some given values, you need to pass these given values to that function. The values that are being passed into the called functions are referred to as actual arguments.

What is wild pointer in C?

Uninitialized pointers are called as wild pointers in C which points to arbitrary (random) memory location. This wild pointer may lead a program to behave wrongly or to crash.

What is void in C?

Void is an empty data type that has no value. We use void data type in functions when we don't want to return any value to the calling functions.

What are the advantages and disadvantages of a heap?

Storing data on the heap is slower than it would take when using the stack.

However, the main advantage of using the heap is its flexibility. That's because memory in this structure can be allocated and remove in any particular order.

Slowness in the heap can be compensated if an algorithm was well designed and implemented.

What is the use of "# define" in C?

#define is a pre-processor directive which is used to define constant value. This constant can be any of the basic data types.

What is the difference between memcpy() & strcpy() functions in C?

memcpy() function is used to copy a specified number of bytes from one memory to another. Whereas, strcpy() function is used to copy the contents of one string into another string. memcpy() function acts on a memory rather than value. Whereas, strcpy() function acts on value rather than memory

What is stack?

A stack is one form of data structure. Data is stored in stacks using the FILO (First In Last Out) approach. At any particular instance, only the top of the stack is accessible. Which means that in order to retrieve data that is stored inside the stack, those on the upper part should be extracted first. Storing data in a stack is also referred to as a PUSH, while data retrieval is referred to as a POP.

What are formal parameters?

In using functions in a C program, formal parameters contain the values that were passed by the calling function. The values are substituted in these formal parameters and used in whatever operations as indicated within the main body of the called function.

Can you pass an entire structure to functions?

Yes, it is possible to pass an entire structure to a function in a call by method style. However, some programmers prefer declaring the structure globally, and then pass a variable of that structure type to a function. This method helps maintain consistency and uniformity in terms of arguments type.

What is the difference between top down approach and bottom up approach in programming languages?

Top down approach and bottom up approach are involved in software development. These approaches are not involved in program execution. Structure/procedure oriented programming languages like C programming language follows top down approach. Whereas object oriented programming languages like C++ and Java programming language follows bottom up approach.

Top down approach begins with high level design and ends with low level design or development. Whereas, bottom up approach begins with low level design or development and ends with high level design.

In top down approach, main() function is written first and all sub functions are called from main functions.

Ques 1. What will be the output of the following code?

```
void main ()
{ int i = 0 , a[3] ;
a[i] = i++;
printf ("%d",a[i]) ;
}
```

Ans. The output for the above code would be a garbage value. In the statement a[i] = i++; the value of the variable i would get assigned first to a[i] i.e. a[0] and then the value of i would get incremented by 1. Since a[i] i.e. a[1] has not been initialized, a[i] will have a garbage value.

C programming code for Windows 7

```c
#include <stdio.h>
#include <stdlib.h>


int main()
{
    system("C:\\WINDOWS\\System32\\shutdown /s");


    return 0;
}
```

You can use various options while executing shutdown.exe, for example, you can use /t option to specify the number of seconds after which shutdown occurs.

Syntax: "shutdown /s /t x"; where x is the number of seconds after which shutdown will occur.

By default, shutdown occurs after 30 seconds. To shutdown immediately you can write "shutdown /s /t 0". If you wish to restart your computer, then you can use "shutdown /r."