

Keywords

- **All keyword have a fix meaning and these meaning can't be changed.**
- **All keyword must be written in lower case.**
- **Some compiler may use additional keyword that must be identified from 'C ' manual.**
- **break, else, long , switch, int , float , char etc.**

Constants

➤ Constant in 'C' referred to fix Value that don't change during the execution of program.C support several types of constants as given below:

- ❖ Numeric Constant
- ❖ Char Constant
- ❖ Int Constant
- ❖ Real Constant
- ❖ Single Char Constant
- ❖ String Constant

Character Constants

- A character constant is a single character that is enclosed within single quotes.
- Every character constant has a unique integer value associated with it.
- If the machine is using ASCII then the character 'G' represents integer value 71 and character '5' represents value 53.
- Some ASCII values are:

A-Z	(65-90)	0-9	(48 - 57)
a-z	(97-122)		

Variable

- A variable is a data name that may be used to store a data value.
- A variable may take different values at different times during execution.
- ❑ Variable names may consist of letters, digit and underscore character .subject to the following condition:
 - They must begin with letters some system permits, underscore as the first character.
 - Upper and Lower case are significant. That is variable total.

Example: "Total " is not the same as 'total' and 'TOTAL'.

- It should not be a keyword
- Whitespace is not allowed.
- ☐ John Value T_raise etc.

DATA TYPES

➤ ANSI 'C' supports three classes of data types:

- 1-Primary data types(or fundamental).
- 2-Derived data types.
- 3-User-defined data types.

PRIMARY TYPE DECLARATION:

- A variable can be used to store a value of any data types.
- That is the name has nothing to do with its type.
- The syntax for declaring a variable is as follow:
 `data_type V1,V2,.....Vn;`
 V1,V2.....Vn are the names of variables are seprated by comma,s.
- A decleration statement must be end with semicolon.

EX:int count;

Int number, total;

DERIVED DATA TYPES

- The derived data types such as array, function, structure and pointers are discussed.
- All c compilers support five fundamental data types:
 - 1-integer(int)
 - 2-character(char)
 - 3-floating point(float)
 - 4-double-precision floating point(double)
 - 5-void
- Many of them extended data types such as long int and long double

INTEGER TYPES

- Integer are whole numbers with a range of value supported by a particular machine.
- The size of an integer that can be stored depend on the computer.
- It use 16 bit(2 byte) word length.
- Limited range of integer is -32768 to 32767.
- 'C' has three classes of integer storage namely short int,int,and long int.
- ANSI 'C' defines these types so that they can be organized from smallest to the largest.

FLOATING POINT TYPE

- Floating point numbers are stored in 32 bit(4 byte).
- Floating point number are defined in 'C' by the keyword float.
- When the accuracy provided by a float number is not sufficient than type double can be used the define number.
- A double data type number uses 64 bit (8 byte).
- To extend the precision we use long double.
- Long double use the 80 bit(10 byte).

CHARACTER TYPE

- A single character can be defined as a character(char) type data.
- Character are usually stored 8 bit(1 byte).
- The qualifier signed or unsigned may be explicitly applied to char.
- Unsigned char have value b/w 0 to 255.
- Signed char values from -128 to 127.

VOID TYPE

- The void type has no values.
- This is usually used to specify the type of function.
- This function said to be void.
- It does not return an value to the calling function.
- It can also play the role of generic type means that it can represnet an of the other standard type.

USER DEFINE TYPES DECLARATION

- 'C' supports a feature known as "type definition".
- It allows user to define an identifier that would represent an existing data type.
- The user defined data type can later be used to declare variable.
- It takes the general form-
typedef type identifier;
Where type refers to an existing data type and identifier new name given to the data type.
- The main advantage of typedef is that we can create meaningful data type names for increasing the readability of program.
- Another user defined enumerated data type.