

INTRODUCTION

Page 1 Subhash

Date

To C

C is a general-purpose high level language, also a structured programming language. It has a well defined library. This language is extensible, It also has a well defined memory management system.

Main features of C are:-

- * Easy to learn
- * Structural language
- * It provides efficient programs
- * C is very flexible & versatile allowing maximum control with minimal command.

C Tokens

Basic building operation of a program

→ Keyword

Keywords have a special meaning to the compiler

eg:- for, else etc

→ Identifier

Represent the name in the C Program

eg → Variables, functions, arrays, unions etc

→

Constants → Constants or Literals are like

variables but the difference is that, the

values of the Constants are fixed once

declared, they cannot be changed.

→ Strings → Strings are defined as a collection of characters defined in forms of an array and end with null character which describe the end of the string to compiler.

→ Operators → Symbols that are used to perform some operations
eg → +, -, *, %

● Operators of Expressions

Expressions → Combination of operators and operands

→ Arithmetic operators - Symbols used to perform Arithmetic operations are arithmetic operation

operations are arithmetic operation

eg → +
-
*
/
%

→ Logical Operators of expressions

→ To perform logical expression

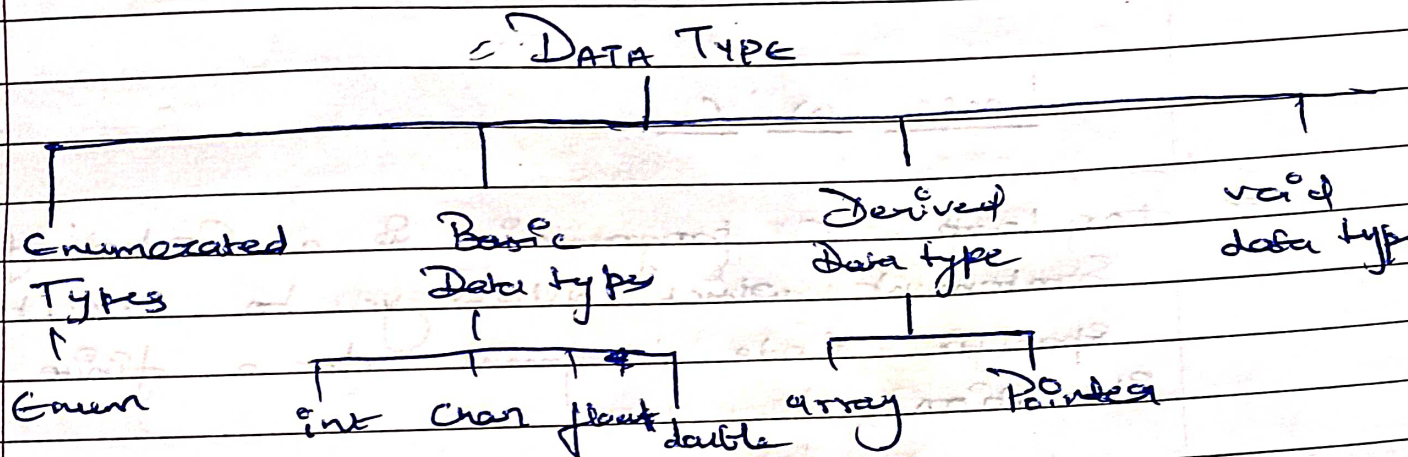
eg → logical AND (&)

logical OR (||)

logical NOT (!)

- Relation operators $\rightarrow >, <, <=, >=, ==, !=$
- Bitwise operators $\rightarrow \sim, \gg, \ll, \wedge, \vee$
- Assignment operator $\rightarrow =, +=, -=, /=, \% =$

DATA TYPES



Variables \rightarrow It is defined as the reserved memory space which stores a value of a definite data type. The value is not constant instead it allows changes local & global variable.

Control Statements \rightarrow Statement which defines the flow of execution of program is known as Control Statement.

They are

- Sequential Control Structure
- Conditional/branching/Structure Control
- Looping Control Structure.

* Sequential Control Statement are the flow of execution of a program Sequential or Continuous

* Conditional :- 3 types

- Simple if
- if else
- Switch

Loops in C

⇒ For loop - C programming is a Control flow Statement which allows you to execute a specific code segment for a finite number iteration.

Syntax -

```
for (initialization; Condition; updation)
{
    Action;
}
```

⇒ While loop - In C is a Control flow Statement that execute itself repeatedly until a given boolean Condition is satisfied.

Syntax -

```
while (Condition)
{
    Action;
}
```


⇒ Do while loop → Do while loop in C programming is considered to be a Conditional statement completely similar to while loop.

SYNTAX →

```
do
{
    Action
} while (Condition);
```

DATA STRUCTURES → It can be defined as a collection of data values, the relationship among them and the functions that are applied on to data.

Arrays → It is a collection of similar type of data items stored at contiguous memory location.

- one dimensional array
- Two dimensional array
- Multi dimensional array

Linked Lists → are linear data structures similar to that of arrays but the only difference is that the elements are not saved in sequential memory locations.

- Singly Linked List
- Doubly Linked List
- Circular Linked List

Stack → It is a Linear data Structures which follows a particular order in which the operations are performed. The order may be LIFO (Last in first out).

Queue → It is a Linear Structure which follows a particular order in which the operations are performed. The order is FIFO (First in first out).

Graph → a data structure that is represented in a graphical format using nodes & edges. A graph in C language is commonly represented in 2 formats:

→ Adjacency matrix

→ Adjacency list

STRING FUNCTIONS

→ strlen() → returns the length of string

→ strcpy() → copies string from source to destination

→ strcat() → Join two strings & stores result in first string.

→ strcmp() → Compare the given two strings.