## Recursion in C.
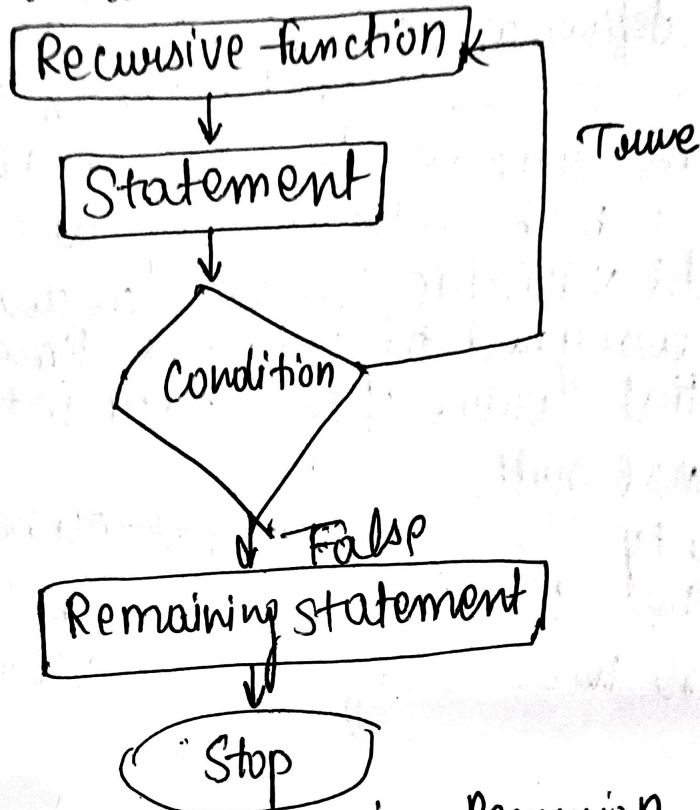
Recursion is the process which comes into existence when a function calls a copy of itself to work ono smaller problem. Any function which calls itself is called recursive function, and such function called & calls are called recursive calls.



Flowchart Showing Recursion

- ## Storage class specifier

Storage mean saving the data in memory. and memory may be secondary memory, primary memory and register

In Storage class specifier have four storage class :-

① Auto    ② Extern    ③ Static    ④ Register

① Automatic variable / Local Variable :- keyword "auto"

a) The visibility of automatic variable is limited to the block in which they are defined.

b) The scope of the automatic variable is limited to the block in which they are defined. The automatic variable are initialized to garbage by default.

c) The memory assigned to automatic variable get freed upon existing from the block.

d) The auto keyword used for defining automatic variable is auto.

e) Every local variable is automatic in C by default.

★ **Static :-**

a) The variable defined as static specifier or control their value between the multiple function calls.

b) Static variable are visible only to the function or (local) the block in which they are defined.

c) A same static variable can be declared many time but can be assigned at only one time.

d) Default initial value of the static integral variable is 0 otherwise null.

e) The visibility of the static get global variable is limited to the file in which it has declared.

f) The keyword used to define static variable is static.

Q-1 Define Decision Tree.

Ans:- A Decision tree is a flowchart-like tree structure, where each internal node donotes a test on an attribute, each branch represents an outcome of the test, and each leaf node (terminal node) holds a class ~~lable~~ label.

Q-2→ What is meant by pseudo code?

Ans→ ① The Pseudo code in C is an informal way of writing a program for better human understanding.

② It is written in simple English, making the complex program easier to understand.

③ Pseudo code connot be Compiled or interpreted.

④ Example:- Java Code : If (i<10) .{i++;} pseudocode : If i is less than 10, increment iby 1.

Q-3→ Name any two types of Constants.

Ans. There are various types of Constants in C. It has two major Categories:-

① Primary constant
Character Constants, Real Constants, and integer Constants etc. are types of Primary Constants

② Secondary Constant.
Structure, array, pointer, union etc.

Q-4→ List any two unformatted input output functions.

Ans.

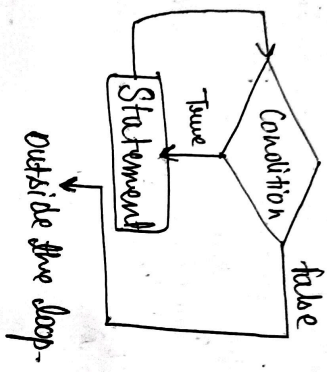| functions | Description |
|---|---|
| gets() | Reads a single string entered by the user at the Console |
| Puts() | Displays a single string's value at the Console |

Putch ( ) | Displays a single character value at the console.

Put chant ( ) | Displays a single character value at the console.
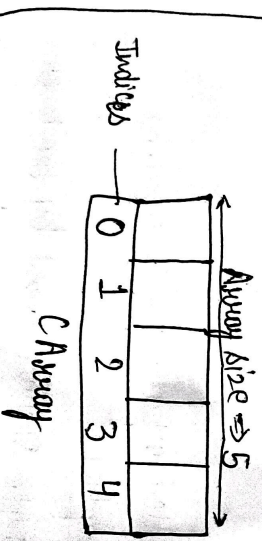
**Q-5** Write the syntax of while loop.

Ans.
```
While ( Condition )
{
    // code to be executed.
}
```



Outside the loop.

**Q-6→** Define string and array.

Ans. ① String is a sequence of characters terminated with a null character 10.

② An array is a variable that can store multiple values. It consists of similar elements referenced by the common name.

Indices

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

Array size ⟹ 5

C Array

for example :- Char [ ] = " C String " ;

when the compiler encounters a sequence of characters enclosed in the double quotation marks, a null character 10 at the end by default. It appends

Memory diagram.

Q-7 What are the basic data type associated with c?

Ans Structure array, etc. The basic data types are also floating point, integer, double, character. Union, known as the primary data type in C programming.

Q-8 Describe the difference between binary and ternary symbols in c.

Ans: In C programming language,

| Operators | Type |
|-----------|------|
| +, -, *, ;/, % | Arithmetic operator |
| <, <=, >, >=, ==, != | Relational operator |
| &&, ||, ! | Logical operator |

Binary operator →

Ternary operator → ? :  — Ternary or conditional operator

Q-9→ What are extern variables? Give example

Ans ① An external variable defined outside any function block

② "Extern" keyword is used to declare and define the external variable

Q-10→ Define iteration with example.

Ans ① Iteration is the process where a set of instruction or statements is executed repeatedly for a specified number of time or until a condition is met.

② These statements also alter the control flow of the program and thus can also be classified as control statements in C programming language.