★ C PROGRAMMING SHORT NOTES ★

Introductions :-

C programming is a general-purpose, procedural, imperative computer programming language developed in 1972 by Dennis M. Ritchie at the Bell Telephone Laboratories to develop the UNIX operating system.

Features of C Language :-

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- Simple
- Machine Independent or portable
- Mid-level programming language
- structured programming language
- Rich Library
- Memory Management
- Fast speed
- Pointers
- Recursion
- Extensible

Advantages of C :-

- Easy to learn
- Structured language
- It produces efficient programs.
- It can handle low-level activities
- It can be compiled on a variety of computer platforms.

First C Program :-

```
// Author : @atul_kumar
#include <stdio.h>
int main( )
{
 printf("Hello World!");
 return 0;
}
```


Comments In C :-

Comments are used to indicate something to the person reading the code. Comments are treated like a blank by the compiler and do not change anything in the code's actual meaning.

There are two types of comments:

1). Single Line comment 2). Multi-Line comment.

```
#include<stdio.h>
int main( ){
    // this is a single line comment
        printf("Hello Atul    ");

 /* this is multi line
 comment */
 return 0;
 }
```

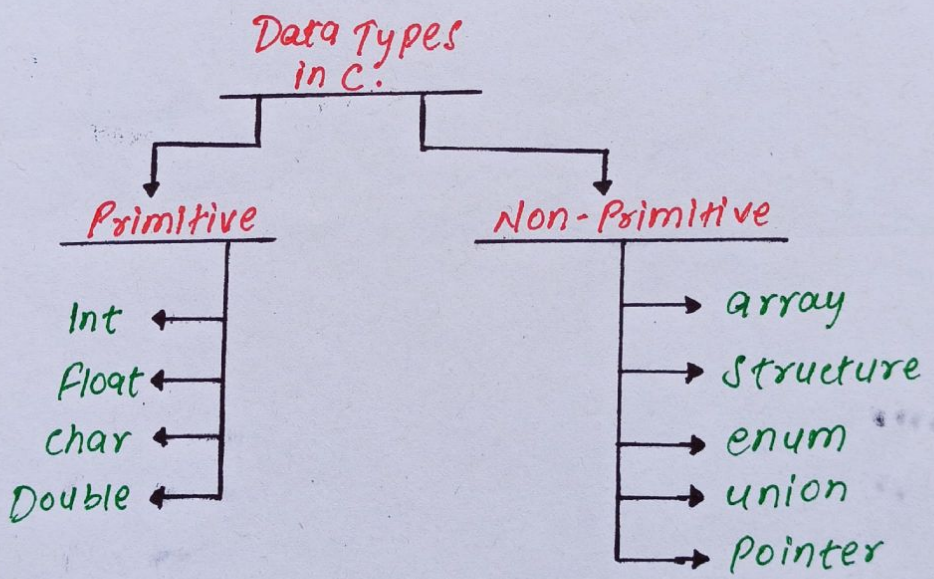
Variables in C :-

A variable is a name of the memory location. It is used to store data. Its value can be changed, and it can be reused many times.

Ex. int a
charb
float c

Data type in C :-

A data type specifies the type of data a variable can store such as integer, floating, character, etc.



Control Statement :

There are the following varients of if statement in C language.

- If statement
- If - else statement
- If else - if ladder
- Nested if

If Statement

The if statement is used to check some given condition and perform some operations depending upon the correctness of that condition.

```
// Author: @atul_kumar
// if Syntax
if(expression) {
// code
}
```

If - else Statement

The if-else statement is used to perform the operations based on some specific condition. The operations specified in if block are executed if and only if the given condition is true.

```
// Author: @atul_kumar
// if Syntax
if(expression){
// if block
} else {
  // else block
}
```

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If else - if ladder

A common programming construct that is based upon nested if is the if-else-if ladder. It looks like this. The conditional expressions are evaluated from the top downward. As soon as a true condition is found, the statement associated with it is executed, and the rest of the is bypassed.

CONTINUE ⟶

```
// Author: @atul_kumar.
if (condition 1) {
// condition 1 is true
} else if (condition 2) {
// condition 2 is true
}
else if (condition 3) {
// condition 3 is true
}
...
else {
// Code to be executed if all the conditions are false
}
```


Nested if

Nested if in C programming in placing if statement inside another IF statement. Nested if in C is helpful if you want to check the condition inside a condition. IF else statement prints statements based on the expression result (TRUE, FALSE). Sometimes we have to check even further when the condition is TRUE.

```
// Author: @atul_kumar
// if Syntax
if (expression) {
// if block
} else {
    // else block
}
```