**C Programming**

**C language:-**

C is a high level language.

It is a mother level Language.

It is a structured programming language .

It is a System programming language.

It developed by Dennis Ritchie in 1972 at AT & T Bell Laboratories. In USA.

**Features of C:-**

1. Simple
2. Portable
3. Speed
4. Libraries
5. Structured
6. System…..etc

Note.

It be create any program in C language. Then some software need.

Turbo C++

Dev C

VS Code

Notepad++

Netbeans…etc

**Compiler:-**

It is an application that convert source into machine code.

Source Code 🡪 Compiler 🡪 Machine Code

Ext. .c/.cpp

**Keyword:-**

It is reserve word,it is predefined into complier.

In C 32 Keyword are available.

Ex. If, for, while,do…..

**Header Files:-**

It is also known as library files. It saved in include folder.

Ex. Stdio.h conio.h, math.h ….etc

It be create c programming then be use some symbol.

#:- It is preprocessor directive.

Stdio.h standard/input/output

Conio.h console/input/output

Clrscr(); it is used to clear screen.

Void main() :- It is show the starting pointing of program.

It is used to hold the screen when we not press any key.

It is one character input function.

Gets(); it is use to read the hole string value

**Structured Programming:-**

Documentation Block ( optional block)

Header Section (essential block)

Global Section (optional Block)

Main section (essential block)

IOP input processing output

UDF user defined function

Scanf(); is a input function. It is used to read intger ,float ,char.

It takes input from user.

Syntax:-

Scanf(“%formate-specifier”,&variablename);

Scanf(“%d”,&a);

Printf();

It is used to print result in console.

Syntax:-

Printf(“string=%formate-specifier”,variable);

**Variables:-**

Which hold some space into the memory and which value can be changed during the program.

Data\_type variablename;

Int a,b,c;

Float a;

**Rules of Variable:-**

1. Variable cant start with number

Valid--- int a;

Invalid—int 1a;

1. In variable can not used keyword

Int ram;

Int @ram;

1. Space are not allow in variable declaration

Int ram

Int ra m

1. Define multiple variable use comma

Int a,b,c;

**Types of variable:-**

1. Local Variable
2. Global Variable
3. Local Variable:-

It is used to declare variable inside of the main function

Then this process is define local variable.

Syntax:-

Valid function(){

Local variable

}

Ex.

Void main(){

Int a;

}

1. Global Variable:-

It is created outside of the valid function.

Syntax:-

Variable declare

Valid function(){}

Ex.

Int a;

Void main(){

}

#include<stdio.h>

Int main(){

Printf(“heloo”);

Return 0;

}

#include<stdio.h>

#include<conio.h>

void main(){

Printf(“heloo”);

Getch();

}

**Operator:-**

Operator which perform the relation between two operands.

Ex. A+b,a-b,a\*b,a/b;

Here is (a,b) operends (\*,/,)is operator

Types of operator:-

Arithmetic operator

Relational operator

Logical Operator

Conditiponal Operator

Assignment operator

Increament Decreament

Bitwise operator

1. Arithmetical Operator:- It perform the all mathematical operation

Ex. Addition(+)

Sub(-)

Mutli(\*)

Div(/)

Modulus(/)

1. Relational Operator:- it perform relation between two operator.

Ex.

Greater then (a>b)

Greater then equal (a>=b)

Less then (a<b)

Less then or equal (a=<b)

Equality (a==b)

Not equal (a!=b) etc.

1. Logical operator:- It perform

Assignment Operator :- Assignment operator is used to assign the value.

* It is represent this symbol(‘=’).

Note –

Assignment operator is always assign the value right hand side to left side.

Ex. Int x;

X=100;

Increament/Decreament Operator :- If u want ot increase the value into there value then this process is known as increament ope

Ex.

Int a;

A=100;

A++;

A=a+1;

A+=1;

Decreamnet ope is the opposite of increament ope

Ex.

Int a;

A=100

a--;

a=a-1;

a-=1;

Bitwise Operator:- It is use to in c program first convert bit and then perform all operation.

Ex.

& and

| or

^ xor

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **x** | **y** | **X&y** | **X|y** | **X^y** |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Wap in c use bit 12 and 25

12=00001100

25=00011001

Bitwise & :-00001000

8 result

**Statements:-**

It has the block of the code and excecute Whole Body.

There are three types

Conditional

Looping

Jump Control

1. Conditional Statement;-

It is use to check the condition

There are two type of conditional

1. If statement b) switch statement
2. There are are four types of statement:-

Simple if

If else

Else if

Nested if

Simple if:- If is a keyword in fi statement only true condition will be check false condition will not execute.

Syntax:-

If(condition){

//Block of code

}

Ex.

If (i==0){ //block of code;

}

If else:- If else is a keyword, if given condition is true the if block of code will be execute otherwise else block of code will be execute.

Syntax:-

If (condition){

//true block

}

Else{

//False block of code

}

Ex :-

If(a==1){

Printf(“hello”);

}

Else{

Printf(“byy”);

}

Else if :- its also know as ladder if. It can check multiple condition at a time. But only one condition will be execute at a time.

Syntax:-

If(cond1){

//block}

Else if(cond2){

//block

}

Else if( cond3){

//block

}

Else{

//false

}

Switch:-

It is a keyword in it statement case are used case is working same like as statement

Syntax:-

Switch(var){

Case1:

Break;

Default:

Break;

}

**Looping Statement:-**

If u want to execute block of code again and again behalf of condition then this process is known as looping.

Repeatation of the statement certain as condition.

There are two types of looping

Index based

Collection based looping

1. Index based :-

Entry Control

It have two loop

While , for

Exit Control

It have only one loop

Do while

1. For Loop:-

It is a keyword for loop intialisation ,condition ,updation into single line terminate by semicolon.

Syntax:-

For(int;cond;upd)

{

//code

}

All loop use this concept

1. Initialization
2. Condition
3. Updation
4. While Loop:- It is a keyword. It known as entry control loop

Do while:- It is a Keyword .It check the condition after the the check

Syntax:-

Initialization;

Do{

//code

//updation

}

While(cond);

Nested loop:-

When loop is available into another loop.

Outer loop and inner loop is used

Row and column are used

When outer used one time then inner full time according to condition.

Syntax:-

For(init;cond;up){

For(init;cond;up){

//code

}

}

Jump control statement:-

There are two type of jump control.

1. Break
2. Continue
3. Break :- Its keyword. Its use for break any condition

Its use in for while do while

Syntax:-

Jump\_control;

Break;

1. Continue:- its keyword. Its use for continue any condition.

Syntax:-

Jump\_control

Continue;

**Array:-**

Array is the collection of smilier data type, similer data type means the same type of data or values.

//note:-

Without using an array we can store single variable into single data, but by using an array we can store single variable into multiple data.

Syntax:-

Data\_type arrayname[size];

Data\_type :-it is valid c data type, and define same type of data.

Array\_name :- it is used to same like as variable name.

Size[] :-it is show maximum length of an array.

Note:- the initialization of an array is start from 0 to n-1 where n is the length of an array.

Int a [10];

Here int is a data type and a is an array

Type of array \

There are three type of array

1 one dimantional

2 two d

3 d

Multi dime

One D Array:- in it single dimention it denoted by subscript[]

Sy:- data\_type arrayname[size];

Two Dimentional:- In it two subscript[][] are used and row and column are used

Sy:- datatype arrayname[row][colmn];

Multi Dimentional:-