**C PROGRAMMING:-**

DEVLOPMENT

**Types of Applications:**

**Mobile Applications:-**apk,need to install in mobile Phones

**Websites:-**Run By URL(Uniform Resource Locator):Its runs on web-browsers

**Methods To Create:-**Designing Language:HTML+CSS,BOOTSTRAP

**Web Applications:-**Dynamic Websites:Run by URL ,Its Run On Web Browser

**Methods To Create:-**

* **Designing:-HTML+CSS/BOOTSTRAP**
* **PROGRAMMING:-C,C++,JAVA ,PYTHON ,.NET,PHP…………..**
* **DATABASE:-MYSQL,MSSQL,MSACCESS,ORACLE,MONGODB…….**

**Console Application:-**Runs By Command on blue/black Screens

**Desktop Applications:-**Runs By .exe files,need to install

**StandAlone Applications:-**Key Based Softwares like Antivirus

**Languages:-** Languages is a medium to communicates with other person.

**Programming Languages:-**it is a medium to communicate with computer system**.**

**C programming:-** StandAlone Applications :to apply logics

C is a high level programming language.it was developed by Dennis Ritchie in 1972 in A&T’s Bell Laboratory.C is HLL(High Level Languages) that means maximum word used in C Programming is taken with the real life words.

High language that means a developer friendly language.

Computer->Language-> Machine language(binary language/low level language.0&1).

C is also known as mother language just because syntaxes of maximum other programming language is taken from the C.

Basic Structure Of C programming:-

1. **Documentation Section:**

**Comments:-** Comments are those line of programms ,that is ignored by compiler.It is Just for the Understanding of developer.

Single Line Comment:- //Commnet..

Multiline Comments:- /\*------------------------------------------------------------------------------\*/

1. **Linking Section:-** Each Programming language provides some pre-defines codes ,that is saved in the library of programming.When we need to use those pre-defined codes firstly we need to add library in the programms.

**C- Header Files**

**Java- Package**

**Python- Modules**

**#- Name Space**

Header Files-Header File is the collaction of some pre -defines function.

Functions are kept in different Header Files based on the category.

Stdio.h:-Standard Input output : printf(),scanf(),………………

conio.h:-Console Input Output:clrscr(),hetch(),getche(),getchr(),putchchr()

math.h:- pow(),sqrt(),log(),ceil(),floor()………..

String.h:-strcpy(),strlwr(),strupr(),strrev(),strcat(),………….

#include” header file name with extension”

#include< header file name with extension>

# This is pre-processor directive

Lines written with # is Executed in the program.

Include: include is a folder

1. **Global Declaration Section:-** **Global Declaration** that means declaring some variables globally that is accessible in all function of programs:(optional).

**int a=5;//globally declaration**

**void main()// user define + pre defines function**

**{**

**A=a+10;**

**}**

1. **Main Function:-** main function is a mendotry function of each c programms.

Main Function is declared with named main().

void main()

{

}

// void-Data Type

main(): Function

1. **Other Sub Programms:-** You can define other user-defined function in c programms. It is optional.

#include<stdio.h> /// header-files

Void main() // it is the main part of programs execution starts from here.

{

}

**Keywords:** Keywords are some reserve words that has special meaning and functionalty . In C program total 32 keyword are defines.In Programmin Keywords are used at special places whenever it needs.

**EX.-**if,else,do ,int, while,float,double,long,struct,break,continue…

**Identifier:-**Idenfires are used for naming.like user Defines function ,variable,constant.

**Rules to declare identifier:**

Identifier can not be start with number. It can not be Numeric alpha.

**EX:-** 12var

Identifier can not have space in names.

It can not contain some special symbols like &,\* etc.

It can not be same as keyword.

It can be alpha Numeric like:-var1,number2

Identifier:variables

Data Types: Data types are some reserve word that defines the type of value and total memory space. Data types defines which type of value,it can store and how much memory space it will occupy.

There are mainly Four Type of data type in C.

1. **Premitive Data Type/basic/Fundamentls Data types**

|  |  |  |  |
| --- | --- | --- | --- |
| Data Type Names | Formate Specifier | Memory space | Ex Values |
| Short | %d | 1 byte | -32768 to +32767 |
| Int: whole number | %d | 1 byte/4byte | 3 |
| long int | %ld | 4 byte |  |
| long long int | %Ld | 8 byte |  |
| Float : decimal number | %f | 4 byte | 3.5 |
| double | %lf | 8 byte |  |
| long double | %Lf | 10 byte |  |
| char | %c | 1 byte |  |

1. **Non-premitive Data Type/basic/Derived Data types**

Derived data type are created with the help of basic data types

Ex.- String,Array,Pointer

1. **User Defined data Types:-**User defined dat type are declared by user.

Which type of value it can store is decides by user.

Ex.- Structure,Union

1. **Empty data Types:-** It is used to declare functions.It is not used to declare variables

Input Output Function in c:

Each programming lamguage some pre defined input output function.

I/P Function:-Input Function is used to take input from the user at run time. Where you can store those values in a variable and can use anywhere in the program.–––

1. **Formatted Input Function:**

scanf()

1. **Unformatted Input Function:**

**getch()-**used to input a single character.getch() allows user to input only a single character.without showing the inputed character,program will execute to the next line automaticly.

This is the unformatted function,specially made for the character input.

Syntax-

My\_variable=getch();

**getche()-**used to input a single character from user.

**getchar()-**used to input a single character from user

**gets()-**used to input multiline string

**Output Function:-** O/P functions are used to print message or value on the screen for user

* **Formated Output Function-**

printf():-

* **Un-Formated Output Function-**

Single character -putchar()

String -puts()

**Variables-** Variables are some temporary storage area,which can hold a value and it’s value may be change any where during the execution of program.

**Note:**-

1.declaration of variable

Syntax-data type variable name

2.definition of variable:- Assign value to the variable

**a. Direct Initialization/compile time initialization**

Var =50;

**b. User Input/ Run time Initialization**

scanf(“Formate\_soecifiers”,variable\_list\_with\_&);

scanf(“%f”,&var);

int a;float f;

scanf(“%d”,&a)

scanf(“%f”,&f)

scanf(“%d %f”,&a,&f);

**c.By Expression/calculation**

A=b+10;

**Character** input special function:-

**getch():getch() is used to input a single character from user. getch() function reads the inputed value from the screen and save the value in a character type variable.**

**Working():** getch() permits user to input only a single key on the output screen, next line of program executes without waiting to press enter key,as soon as user inputs a single character.

**Syntax:**

Char ch;

Ch=getch();

Character inputed by user,by using getch() function does not appear on output screen.

**Always character type value inclosed within:-‘ ‘ not allowed character variable**

**Varible not inclosed Ex. (a)**

**Different between getch() and getchr()**

**getch mai input value show nhi hoti isme next line of program executes without waiting for enter key.**

**getche mai input output screen mai dikhta hai. next line of program executes without waiting for enter key.**

**getchar():-** getchar() function sames as the scanf(),but getchar() is a unformatted input so you do not need to add any formate specifier here.

**Syntax-**

Char val;

val=getchar();

#include<stdio.h>

**Int main()**

**{**

**Char ch;**

**Printf(“Enter any string or character”);**

**Ch=getchar();**

**Printf(“\n inputed character is :%c”,ch);**

**}**

**Import function file in c programm**

**#include”p10.h”**

**#include”p10.c”**

Extension kuchh bhi sakta hai.isko header file kai niche likhte hai .ye hamesha “” kai ander hi hota hai.

We can also use it is as-

%:include”p10.h”

**Calling-**

**Function name**

**Techpile()**

**For stopping Screen:-**

#include<sdtlib.h>

system(“pause”);

**Operator in C**

Operator :Operator are some special symbols ,pre-defined in library, that is used for special functionality.

Each operator has it’s own use,when ever we need this we can use the opeators in any statement op program.

Operaors are always used with operands.

Suppos a statement:

A=A+B :here a,b is the operand and + is the operators

=is also a operator.

Unary operator:used with one operands ,like increment-decrement operator

Binary operators: ued with minimum 2 operands like:+,-,\*,>,< etc

Ternary operators:used with minimum 3 operands like :conditional operators

Based on the Working operators are devided into many category:

1.Arithmatic Operators

2.Realation Operators

3.Logical Operators

4.Assignment Operators

5.Increment & Decrement Operators

6.Conditional Operators

7.Bitwise Operators

**1. Arithmetic Operators:**This operators is used for mathematical operations.it is used with numeric values .It is Binary Operators that means it need min 2 operators to be used.

+:addition

-:Substarction

\*:Multiply

/:Division

%:Moduler Divison

Precedence of operators:(Priorty Which one execute first)-

\*/ % + - =

/: it retrun always a integer number if both operands are integer

%-Its called as moduler . it return remender.it can only apply on interger value not aaplied on float value.