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**C programming language**  🡪 c is a compiler C is called by: - procedure oriented programming, procedure programming language or structural programming language.

Programming language is used to communicate with computers or electronics or electrical machine.

Program: = set of instruction given to computer to achieve a particular task.

Ex: = sum of two no’s. Soln: = step1:= read two numbers, step2:= let sum=a+b, step3:= print sum.

* **C**: = it is a modified version of BPCL. Basic programming combined language c was developed by Dennis Ritch at Bell laboratories of USA in 1972.
* **Character set of C: -** a-z, A-Z, 0-9 numbers.
* **Special characters** : - (). , : ; ‘ ‘ “ “ % # - \_ & ,&& !, ||, [ ], { } etc.
* **C tokens: -** smallest individual with of a program.
* **Keyword:** - reserved words used by c ex: = main, getch, print, scanf, int, float.
* **Identifies** : - used to identify definitions, variables, constants, structures etc ex: = int a; const int a;
* Struct student, sum ();
* **Variable** : - storage unit the value of which will change during the execution of the program ex:= coust float pi=3.142;
* **Data types:** - type of a data given to computer.

**A) primary data Type**: = (built in-data type we).

B) **Derived data type**: - derived by primary data type ex: = arrays, pointers, function.

C) **Uses defined data type**: = data type is defined by the user. Ex: = structures, class, unions, even etc.

1. **Primary data type**: = types: - int, float, string, char, getch. Int: = stores integer (short int 1 byte, int 2 bytes, and long int 4 bytes).
2. **Signed int**: = stores +ve & -ve values.
3. **Unsigned int**: = stores +ve values.
4. **Float**: = stores decimal or exponential numbers ex: = 3.142, 1.2345, 102 , 10+25, 10-25. Float-4 bytes double -8 bytes.
5. **chart**:= stores characters -char string, single characters—collection of characters, char c; char c[100];
6. **Operations:** = operator is a symbol to identify the operators ex:= + - add , - - sub =.
   1. **Arithmetic operations**: - add +, sub--, multiplication \*, division /, modulo division %, remainder is the answer 2)4, 4/0- remainder (2-quotient.
7. **Relational operators**: = used to relate or compare two variables constants. Operators: - ><, >=, <=, ==, !=, a>b, a<b, a==b.
8. **Logical operators**: = used to combine two express always logical operators work with relational operators. Operators: - and-&&, or-||, not-! Ex: = a>b && b>c && c>a. a==b && b==c && c==a. a==b || b==c || c==a.
9. **Conditional operators**: = used to check the condition operators:= : , ? . Syntax: - <exp1> : <exp2>? <exp3>--false (a>b): a? b.—true.
10. **Assignment operators**: = used to assign the value of right hand side of expression to left hand side. Operator:= -=, sum=a+b; increment operator:= increase the value of a variable by 1 , ++ , i=5 5, i++5,=6. Decrement operator: = decrease the value of variable by 1, - - , i=5 5, i- - 5=4. Expression: = combination of variable constant operator ex: = 4+5, x+5, x+y, 4+y. free processing statement.

* **struct of the program** :=

Documentation section

Link section

Global declaration

Main function

{

Local declaration

{

Function body

} Function 1; Function 2; \_ \_ \_ \_; \_ \_ \_ \_; }

# Documentation section

: =include the non-executable statements. This makes the program more readable.

**Comments**: = are used to write the statements. 🡪 Single line comments. //\_ \_ \_ \_ \_. 🡪 Multi line comments /\*\_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \*/

* **Link section**: = we include header files in link section.
* **#include<stdio.h>** //stdio.h🡪 slandered input/output header files includes input/output functions.
* **#include<conio.h>** //conio.h🡪 console (screen) input/output header files includes input/output functions.
* **Printf ()**🡪 used to print the statement.
* **Scanf ()** 🡪 used to read the data.
* **Clrscr ()** 🡪 it clear the screen.
* **Getch ()**🡪 get the output on the screen.
* **Global declaration**: = the variables declared are used in all the functions of program ex: = int a, b;
* **Main function**: = execution starts from main.
* **Delimiters**: = {} 🡪indicates the beginning and ending the program.
* **Local declaration**: = variable declared will be used of accessed in that particular function.
* **Function body**: = actual code.

# Programs: =

1. // program to print the message.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Printf (“welcome to c program”);

getch ();

}

1. // program to find sum and average of two numbers.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b;

Float sum, avg;

Clrscr ();

Printf (“enter the value of a and b :”);

Scanf (“%d%d”, &a, &b);

Sum=a+b;

Avg=sum/2;

Printf (“sum: =%f”, sum);

Printf (“\n average: =%f”, avg);

getch ();

}

1. // program to find simple interest.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int p, t;

Float r, si;

Clrscr ();

Printf (“enter the value of p, t and r :”);

Scanf (“%d%d%f”, &p, &t, &r);

Si= (p\*t\*r)/100;

Printf (“simple interest: =%f”, si);

getch ();

}

1. // program to find area and perimeter of square.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a;

Float area, peri;

Clrscr ();

Printf (“enter the value of a :”);

Scanf (“%d”, &a);

Area=a\*a;

Peri=4\*a;

Printf (“area: =%f”, area);

Printf (“\n perimeter: =%f”, peri);

getch ();

}

1. // program to find area and perimeter of rectangle.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int l, b;

Float area, peri;

Clrscr ();

Printf (“enter the value of l and b :”);

Scanf (“%d%d”, &l, &b);

Area=l\*b;

Peri=2\*(l+b);

Printf (“area: =%f”, area);

Printf (“\n perimeter: =%f”, peri);

getch ();

}

1. // program to find area and circumference of circle.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int r;

Float area, cir;

Clrscr ();

Printf (“enter the value of r :”);

Scanf (“%d”, &r);

Area=3.142\*r\*r;

Cir=2\*3.142\*r;

Printf (“area: =%f”, area);

Printf (“\n circumference: =%f”, cir);

getch ();

}

1. // program to find area of triangle.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int b, h;

Float area, triangle;

Clrscr ();

Printf (“enter the value of b and h :”);

Scanf (“%d%d”, &b, &h);

Area=b\*h;

Triangle=0.5\*b\*h;

Printf (“area: =%f”, area);

Printf (“\n triangle: =%f”, triangle);

getch ();

}

Soln: = b\*h=5\*5=25/5=0.5 area 1-2/2=1/2 0.5\*1/2=12.50 triangle.

1. // program to swap the values of two variables..

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b, temp;

Clrscr ();

Printf (“enter the value of a and b :”);

Scanf (“%d%d”, &a, &b);

Temp=a;

a=b;

b=temp;

Printf (“a after swap: =%f”, a);

Printf (“\n b after swap: =%f”, b);

getch ();

}

# Decision making and branching

Control statements:= used to transfer the control from one place to another.

# Unconditional control statements

Control statements:= used to transfer the control from one place to another in a program without conditional ex:= go to 🡪 use f7 function key.

Go to label;

\_ \_ \_ \_

\_ \_ \_ \_ forward jump

Label:

Label:

\_ \_ \_ \_ backward jump

\_ \_ \_ \_

Go to Label;

1. // program to demonstrate go to statement.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b;

Float sum, avg;

Char ch;

Label:

Clrscr ();

Printf (“enter the value of a and b :”);

Scanf (“%d%d”, &a, &b);

Sum=a+b;

Avg=sum/2;

Printf (“sum: =%f”, sum);

Printf (“\n average: =%f”, avg);

Printf (“\n do you want to continue sum? [y/n] :”);

Scanf (“%s”, &ch);

If (ch==’y’)

goto label;

getch ();

}

# Conditional operator

1. // program to find maximum of two no’s using conditional operator.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b, max;

Clrscr ();

Printf (“enter the value of a and b :”);

Scanf (“%d%d”, &a, &b);

Max=(a>b) ? a: b;

Printf (“%d= maximum of two no’s”, max);

getch ();

}

1. // program to find maximum of three no’s using conditional operator.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b, c, max1, max2;

Clrscr ();

Printf (“enter the value of a, b and c :”);

Scanf (“%d%d%d”, &a, &b, &c);

Max1= (a>b)? a: b;

Max2= (max1>c)? max1: c;

Printf (“%d= maximum of two no’s”, max2);

getch ();

}

# Mathematical function

1. // program to demonstrate mathematical function.

#include<stdio.h>

#include<conio.h>

#include<math.h>

Void main ()

{

Int x, y, z;

Float a, b, c;

Clrscr ();

Printf (“enter the number :”);

Scanf (“%d”, &x);

Printf (“enter the power :”);

Scanf (“%d”, &y);

Printf (“enter the –ve number :”);

Scanf (“%d”, &z);

A=sqrt(x);

B=POW(x, y);

C=abs (z);

Printf (“\n square root of a number: %f”, a);

Printf (“\n power of a number: %f”, b);

Printf (“\n absolute of a number: %f”, c);

getch ();

}

1. // program to find compound interest.

#include<stdio.h>

#include<conio.h>

#include<math.h>

Void main ()

{

Long Int p;

Int n;

Float r, ci, a;

Clrscr ();

Printf (“enter the value of p, n and r :”);

Scanf (“%d%d%f”, &p, &n, &r);

a= p\*((1+r/100),n);

ci=a-p;

Printf (“amount: =%f”, a);

Printf (“\n compound interest : =%f”, ci);

getch ();

}

# Conditional control statements

Control transfers from one place to another place in a program according to condition.

Ex: = if, switch. a) Simple if, b) if \_ \_ \_ \_ else. C) If \_ \_ \_ \_ else if ladder, d) nested if.

1. **Simple if**: = checks the condition if true statement executes otherwise goes to next statement.

Syntax: = if <condition>

{

Statement

}

Statement 🡪x;

1. // program to demonstrate simple if statement.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int money;

Clrscr ();

Printf (“enter the money :”);

Scanf (“%d”, &money);

If(money==0)

Printf (“borrow money”);

getch ();

}

1. // program to find even or odd no’s.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a;

Clrscr ();

Printf (“enter the value of a :”);

Scanf (“%d”, &a);

If (a%2==0)

Printf (“%d is even”, a);

If (a%2! =0)

Printf (“%d is odd”, a);

getch ();

}

1. **If\_ \_ \_ \_else statements**: = if condition is true executes of block statements otherwise execute false block statement two-way branching statement.

Syntax: = if <condition>

{True--statement

Else

} False--statement

Statement 🡪x;

1. // program to find biggest of two no’s.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b;

Clrscr ();

Printf (“enter the value of a and b :”);

Scanf (“%d%d”, &a, &b);

If (a>b)

Printf (“%d is big”, a);

Else

Printf (“%d is big”, b);

getch ();

}

1. // program to find +ve or -ve no’s.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a;

Clrscr ();

Printf (“enter the value of a :”);

Scanf (“%d”, &a);

If (a>0)

Printf (“%d is +ve”, a);

Else

Printf (“%d is -ve”, a);

getch ();

}

1. **Nested if**: = checks the condition if true checks next condition if true checks next & so on.

Syntax: = if <condition1>

{True—statement1;

If <condition2>

{True—statement2;

Else

False—statement1;

} else

False—statement1;

1. // program to find biggest of three no’s.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b, c;

Clrscr ();

Printf (“enter the value of a, b and c :”);

Scanf (“%d%d%d”, &a, &b, &c);

If (a>b)

{

If (a>b)

Printf (“%d is big”, a);

Else

Printf (“%d is big”, c);

}

Else

{

If (b>c)

Printf (“%d is big”, b);

Else

Printf (“%d is big”, c);

}

getch ();

}

1. // program to find the eligible voting or not.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int age, n;

Clrscr ();

Printf (“enter the age :”);

Scanf (“%d”, &age);

Printf (“enter the nationality as 1 if Indian :”);

Scanf (“%d”, &n);

If (age>=18)

{

If (n==1)

Printf (“Eligible for voting”);

Else

Printf (“Not Eligible for voting”);

}

Else

Printf (“Not Eligible for voting”);

getch ();

}

1. **If\_ \_ \_ \_else if ladders:** = checks the condition if true executes statements, if false checks next condition & so \_\_ \_ \_ on.

Syntax: = if <condition1>

{True—statement1;

Else If <condition2>

{True—statement2;

Else if <condition3>

{True—statement3;

\_ \_ \_ \_

\_ \_ \_ \_

Else

D—statement1;

1. // program to find biggest of three no’s using it.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b, c;

Clrscr ();

Printf (“enter the value of a, b and c :”);

Scanf (“%d%d%d”, &a, &b, &c);

If (a>b && a>c)

Printf (“%d is big”, a);

Else If (b>c && c>a)

Printf (“%d is big”, b);

Else

Printf (“%d is big”, c);

getch ();

}

1. // program to checks whether the triangle is equilateral, isosceles or scalene.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b, c;

Clrscr ();

Printf (“enter the value of a, b and c :”);

Scanf (“%d%d%d”, &a, &b, &c);

If (a==b && b==c && c==a)

Printf (“triangle is equilateral”);

Else If (a==b || b==c || c==a)

Printf (“triangle is isosceles”);

Else

Printf (“triangle is scalene”);

getch ();

}

1. // program to find the student marks detail.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int rollno, STD, total, kan, eng, hin;

Float per;

Char name [10];

Clrscr ();

Printf (“enter the rollno :”);

Scanf (“%d”, &rollno);

Printf (“enter the student Name :”);

Scanf (“%s”, &name);

Printf (“enter the standard :”);

Scanf (“%d”, &STD);

Printf (“enter the marks of kannada :”);

Scanf (“%d”, &Kan);

Printf (“enter the marks of English :”);

Scanf (“%d”, &eng);

Printf (“enter the marks of Hindi :”);

Scanf (“%d”, &hin);

Total=Kan+eng+hin;

Per=total/3;

Printf (“\n\*\*\*\*student detail\*\*\*\*” “);

Printf (“\n student rollno: =%d”, rollno);

Printf (“\n student standard: =%d”, STD);

Printf (“\n student name: =%s”, name);

Printf (“\n student total: =%d”, total);

Printf (“\n student percentage: =%f”, per);

Printf (“\n student Grade: =”);

{

If (per>=75)

Printf (“A”);

Else If (per>=75 && per<=60)

Printf (“B”);

Else

Printf (“C”);

Printf (“\n\*\*\*\*\*\*\*END\*\*\*\*\*\*\*\*\*\*”);

}

getch ();

}

1. // program to find the Grade of the Employee

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int code;

Float basic, hra, da, pf, lic, gross, ded, ns;

Char name [10], design;

Clrscr ();

Printf (“enter the code :”);

Scanf (“%d”, &code);

Printf (“enter the employee Name :”);

Scanf (“%s”, &name);

Printf (“enter the Designation :”);

Scanf (“%s”, &design);

Printf (“enter the basic salary :”);

Scanf (“%f”, &basic);

Hra=basic\*0.5;

Da=basic\*0.3;

Pf=basic\*0.1;

Lic=500;

Gross=Basic+Hra+Da;

Ded=pf+Lic;

Ns=Gross-Ded;

Printf (“\n\*\*\*\*Employee Detail\*\*\*\*” “);

Printf (“\n Employee Code: =%d”, code);

Printf (“\n Designation: =%s”, design);

Printf (“\n Employee name: =%s”, name);

Printf (“\n Employee Net Salary: =%f”, ns);

Printf (“\n Employee Grade: =”);

{

If (ns>=25000)

Printf (“A”);

Else If (ns>=25000 && per<=20000)

Printf (“B”);

Else If (ns>=20000 && per<=10000)

Printf (“C”);

Else

Printf (“D”);

Printf (“\n\*\*\*\*\*\*\*END\*\*\*\*\*\*\*\*\*\*”);

}

getch ();

}

1. // program to find the commission of the sales.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int code, qty;

Float amount, comm, rate;

Char product [10];

Clrscr ();

Printf (“enter the code :”);

Scanf (“%d”, &code);

Printf (“enter the product :”);

Scanf (“%s”, &product);

Printf (“enter the quantity :”);

Scanf (“%d”, &qty);

Printf (“enter the Rate of product :”);

Scanf (“%f”, &rate);

Amount=qty\*rate;

Comm=amount\*0.2;

Printf (“\n\*\*\*\*Commission of Sales\*\*\*\*” “);

Printf (“\n product Code: =%d”, code);

Printf (“\n Product: =%s”, product);

Printf (“\n Quantity: =%d”, qty);

Printf (“\n Total Sales Amount: =%f”, amount);

Printf (“\n Commission: =%f”, comm);

Printf (“\n\*\*\*\*\*\*\*END\*\*\*\*\*\*\*\*\*\*”);

getch ();

}

1. // program to find the Units of Electric city bill.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int rrno, units, units1, units2;

Float amount;

Char name [10];

Clrscr ();

Printf (“enter the rrno :”);

Scanf (“%d”, &rrno);

Printf (“enter the Name :”);

Scanf (“%s”, &name);

Printf (“enter the reading units :”);

Scanf (“%d”, &units);

If (units<=100)

Amount=units\*2.5;

Else if ((units<=200 && units>=100)

Amount= (100\*2.5) + ((units-100)\*4);

Else

{

Units1=units-100;

Units2=units-100;

Amount= (100\*2.5)+units1\*4+units2\*5;

}

Printf (“\n\*\*\*\*Electric city Bill Detail\*\*\*\*” “);

Printf (“\n meter reading number: =%d”, rrno);

Printf (“\n name: =%s”, name);

Printf (“\n units: =%d”, units);

Printf (“\n amount: =%f”, amount);

Printf (“\n\*\*\*\*\*\*\*END\*\*\*\*\*\*\*\*\*\*”);

}

getch ();

}

1. // program to find the Telephone bill.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int phno, calls, callrate;

Float amount;

Char name [10];

Clrscr ();

Printf (“enter the phone number :”);

Scanf (“%d”, &phno);

Printf (“enter the Name :”);

Scanf (“%s”, &name);

Printf (“enter the calls :”);

Scanf (“%d”, &calls);

{

If (calls<=100)

Callrate=calls\*0.40;

Else If (calls>=100)

Callrate=calls\*0.60;

Else If (calls<=200 && calls>=100)

Callrate=calls\*0.80;

Else

Callrate=calls\*0.20;

Amount=calls\*callrate;

Printf (“\n\*\*\*\*Electric city Bill Detail\*\*\*\*” “);

Printf (“\n phone number: =%d”, phno);

Printf (“\n name: =%s”, name);

Printf (“\n calls: =%d”, calls);

Printf (“\n call Rate: =%d”, callrate);

Printf (“\n amount: =%f”, amount);

Printf (“\n\*\*\*\*\*\*\*END\*\*\*\*\*\*\*\*\*\*”);

}

getch ();

}

1. // program to find the Bank Account detail.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int accno;

Float amount, Bal, interest;

Char name [10],account;

Clrscr ();

Printf (“enter the account number :”);

Scanf (“%d”, &accno);

Printf (“enter the Name :”);

Scanf (“%s”, &name);

Printf (“enter the balance :”);

Scanf (“%f”, &bal);

Printf (“enter the account type :”);

Scanf (“%s”, &account);

Printf (“\n\*\*\*\*Account Detail\*\*\*\*” “);

Printf (“\n account number: =%d”, accno);

Printf (“\n name: =%s”, name);

Printf (“\n account: =%s”, account);

If (account==’s’)

{

Interest=0.05\*bal;

Printf (“\n S.B Account”);

}

Else If (account==’r’)

{

Interest=0.06\*bal;

Printf (“\n Recurring Deposit”);

}

Else

Interest=0.09\*bal;

Printf (“\n Fixed Deposit”);

Amount=bal+ interest;

Printf (“\n amount: =%f”, amount);

Printf (“\n\*\*\*\*\*\*\*END\*\*\*\*\*\*\*\*\*\*”);

getch ();

}

# Switch Case

1. // program to demonstrate switch case.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Char code;

Clrscr ();

Printf (“enter the code :”);

Scanf (“%s”, &code);

Switch (code)

{

Case ‘b’:

Printf (“boy”);

Break;

Case ‘g’:

Printf (“girl”);

Break;

Default:

Printf (“invalid code”);

}

getch ();

}

1. // program to demonstrate switch case.

#include<stdio.h>

#include<conio.h>

#include<math.h>

Void main ()

{

Int a, b;

Float sum, diff, prod, quo, sqrt, mod;

Char op;

Clrscr ();

Printf (“enter the value of a and b :”);

Scanf (“%d%d”, &a, &b);

Printf (“enter the operator :”);

Scanf (“%s”, &op);

Switch (op)

{

Case ‘+’:

Sum=a+b;

Printf (“sum=%f”, sum);

Break;

Case ‘-’:

Diff=a-b;

Printf (“difference=%f”, diff);

Break;

Case ‘\*’:

Prod=a\*b;

Printf (“product=%f”, prod);

Break;

Case ‘/’:

Quo=a/b;

Printf (“quotient=%f”, quo);

Break;

Case ‘^’:

Sqrt=sqrt (a);

Printf (“square root of a=%f”, sqrt);

Break;

Case ‘%’:

Mod=a%b;

Printf (“Reminder =%f”, mod);

Default:

Printf (“invalid operator”);

}

getch ();

}

1. // program to find the areas of geometrical figure using switch case..

#include<stdio.h>

#include<conio.h>

Void main ()

{

Float a, a1, a2, a3, a4, b, h, l, w, r1;

Char code;

Clrscr ();

Printf (“enter the code :”);

Scanf (“%s”, &code);

Switch (code)

{

Case ‘r’:

Printf (“enter the value of l and w:”);

Scanf (“%f%f”, &l, &w);

A1=l\*w;

Printf (“area=%f”, a1);

Break;

Case ‘s’:

Printf (“enter the value of a :”);

Scanf (“%f”, &a);

A2=a\*a;;

Printf (“area=%f”, a2);

Break;

Case ‘+’:

Printf (“enter the value of b and h :”);

Scanf (“%f%f”, &b, &h);

A3=0.5\*b\*h;

Printf (“area=%f”, a3);

Break;

Case ‘c’:

Printf (“enter the value of r1 :”);

Scanf (“%f”, &r1);

A4=3.142\*r1\*r1;

Printf (“area=%f”, a4);

Break;

Default:

Printf (“invalid code”);

}

getch ();

}

# Looping

**Increment and decrement operator using while, do + while, for methods.**

1. // program to display 10 natural numbers using do while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1;

Clrscr ();

do

{

Printf (“%d\n”, i);

I++;

} while (i<=10);

getch ();

}

1. // program to display 10 natural numbers using while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1;

Clrscr ();

While (i<=10)

{

Printf (“%d\n”, i);

I++;

}

getch ();

}

1. // program to display 10 natural numbers using For.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i;

Clrscr ();

For (i=1; i<=10; i++)

Printf (“%d\n”, i);

getch ();

}

1. // program to display 10 natural numbers in reverse using do while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=10;

Clrscr ();

do

{

Printf (“%d\n”, i);

I--;

} while (i>=1);

getch ();

}

1. // program to display 10 natural numbers using while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=10;

Clrscr ();

While (i>=1)

{

Printf (“%d\n”, i);

I--;

}

getch ();

}

1. // program to display 10 natural numbers using For.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i;

Clrscr ();

For (i=10; i>=1; i--)

Printf (“%d\n”, i);

getch ();

}

1. // program to display n natural numbers using do while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1 , n;

Clrscr ();

Printf (“enter the value of n:”);

Scanf (“%d”, &n);

do

{

Printf (“%d\n”, i);

I++;

} while (i<=10);

getch ();

}

1. // program to display n natural numbers using while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1, n;

Clrscr ();

Printf (“enter the value of n:”);

Scanf (“%d”, &n);

While (i<=10)

{

Printf (“%d\n”, i);

I++;

}

getch ();

}

1. // program to display n natural numbers using For.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1, n;

Clrscr ();

Printf (“enter the value of n:”);

Scanf (“%d”, &n);

For (i=1; i<=10; i++)

Printf (“%d\n”, i);

getch ();

}

1. // program to display sum of n natural numbers using do while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1, n, sum=0;

Clrscr ();

Printf (“enter the value of n:”);

Scanf (“%d”, &n);

do

{

Printf (“%d\n”, i);

Sum=sum+i;

I++;

} while (i<=10);

Printf (“sum=%d”, sum);

getch ();

}

1. // program to display sum of n natural numbers using while.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1, n, sum=0;

Clrscr ();

Printf (“enter the value of n :”);

Scanf (“%d”, &n);

While (i<=10)

{

Printf (“%d\n”, i);

Sum=sum+i;

I++;

}

Printf (“sum=%d”, sum);

getch ();

}

1. // program to display sum of n natural numbers using For.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i=1, n, sum=0;

Clrscr ();

Printf (“enter the value of n :”);

Scanf (“%d”, &n);

For (i=1; i<=10; i++)

Printf (“%d\n”, i);

Sum=sum+i;

Printf (“sum=%d”, sum);

getch ();

}

1. // program to find the factorial of a number.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int i, n, fact=1;

Clrscr ();

Printf (“enter the value of n :”);

Scanf (“%d”, &n);

For (i=1; i<=n; i++)

{

Fact=fact\*I;

}

Printf (“factorial of a number=%d”, fact);

getch ();

}

1. // program to find the LCM & GCD of 2 number.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a, b, m, n, LCM, gcd;

Clrscr ();

Printf (“enter the value of a and b :”);

Scanf (“%d%d”, &a, &b);

M=a;

N=b;

While (a!=b)

{

If (a>b)

A=a-b;

Else

B=b-a;

}

LCM= (m\*n)/a;

Printf (“GCD=%d”, gcd);

Printf (“LCM=%d”, LCM);

getch ();

}

1. // program to generate to print first n Fibonacci number.

#include<stdio.h>

#include<conio.h>

#include<math.h>

Void main ()

{

Int fst=0, snd=1, n, count=2, next;

Clrscr ();

Printf (“enter the value of n :”);

Scanf (“%d”, &n);

Printf (“%d\n%d\n”, fst, snd);

While (count<n)

{

Next=fst+ snd;

Printf (“%d\n”, next);

Count++;

Fst=snd;

Snd=next;

}

getch ();

}

# Arrays

**Arrays**: = collection of the data items which share a common name & data type. Ex: = int a [5]; int🡪 type, a[5]🡪 array name, [5]🡪 index (size).

Single dimensional arrays: = store a list of values.

Syntax: = type array name [index]; ex: = int a [5];

Initialization: = int a [5] = {1, 2, 3, 4, 5};

Double dimensional arrays: = store a value in rows & columns (table)

Syntax: = types of array name [row-size] [column] ex: = int a [3] [3];

Initialization: = int a [2] [2] = {1, 2, 3, 4};

1. // program to demonstrate single dimensional array.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a [5], i;

Clrscr ();

Printf (“enter the elements of array :”);

For (i=1; i<=5; i++)

Scanf (“%d”, &a[i]);

Printf (“elements of array are\n”);

For (i=1; i<=5; i++)

Printf (“%d”, a[i]);

getch ();

}

1. // program to find sum & avg of array elements.

#include<stdio.h>

#include<conio.h>

Void main ()

{

Int a [100], I, n, sum=0, avg=0;

Clrscr ();

Printf (“enter the value of n :”);

Scanf (“%d”, &n);

Printf (“enter the elements of array :”);

For (i=1; i<=n; i++)

Scanf (“%d”, &a[i]);

Printf (“elements of array are\n”);

For (i=1; i<=5; i++)

{

Sum=sum + a [i];

}

Avg= sum/n;

Printf (“\n sum=%d”, sum);

Printf (“\n average=%d”, avg);

getch ();

}