

Aim:- write the program to understand the basic data types and input and output.

source code:-

```
#include <conio.h>
#include <stdio.h>
void main()
{
    int roll;
    char name[100];
    long int mob_no;
    char grade;
    char add[100];
    float per;
    clrscr();
    printf("***** Demonstration of datatypes\n");
    printf("\n Enter your roll number:");
    scanf("%d", &roll);
    printf("\n Enter your name:");
    scanf("%s", &name);
    printf("\n Enter your mobile number:");
    scanf("%ld", &mob_no);
    printf("\n Enter your grades:");
    scanf("%s", &grade);
    printf("\n Enter your address:");
    scanf("%s", &add);
```

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```
printf("\nEnter your percentage :");
scanf("%f", &per);
printf("\n Your roll number is : %d", roll);
printf("\n Your name is : %s", name);
printf("\n Your mobile number is : %ld", mobnum);
printf("\n Your grade is : %s", grade);
printf("\n Your address is : %s", add);
printf("\n Your percentage is : %f", per);
getch();
}
```

Source code :-

```
#include<conio.h>
#include<stdio.h>
void main()
{
    float pi = 3.141;
    float rad;
    float aoc;
    clrscr();
    printf("\nEnter the radius : ");
    scanf("%f", &rad);
    aoc = pi * rad * rad;
    printf("\nThe area of circle is : %f", aoc);
    getch();
}
```

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Output:-

\*\*\*\*\* Demonstration of datatypes \*\*\*\*\*

ENTER YOUR roll number : 1802

ENTER YOUR name : Abhi

ENTER YOUR mobile number : 54328

ENTER YOUR grades : A

ENTER YOUR address : aaabhh

ENTER YOUR percentage : 64.26

YOUR roll number is : 1802

YOUR name is : Abhi

YOUR mobile number is : 54328

YOUR grade is : A

YOUR address is : aaabhh

YOUR percentage is : 64.26

Output:-

Enter the radius : 3

The area of circle is : 28.269001

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Output:

Enter start number : 8

Enter end number : 2

Addition of two number: 10

Subtraction of two number: 6

multiplication of two number: 16

division of two number: 4

## Practical-02

Aim: write a program that will do the use of:  
various different type of operations

## Arithmetic operators

Source code:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int num1, num2, add, sum, mul, div;
    clrscr();
    printf("enter 1st number:");
    scanf("%d", &num1);
    printf("enter 2nd number:");
    scanf("%d", &num2);
    add = num1 + num2;
    printf("addition of two number: %d\n", add);
    sub = num1 - num2;
    printf("subtraction of two number: %d\n", sub);
    mul = num1 * num2;
    printf("multiplication of two number: %d\n", mul);
    div = num1 / num2;
    printf("division of two number: %d\n", div);
    getch();
}
```

#Algorithm:

write a c program to explain ternary operator.

Step1: declare the variable a,b,x as integer.

Step2: store the value of a as 5 & b as 15.

Step3: Now compare both who is greater use of  
ternary operator to bind.

Step4: Use printf function to display output.

# program

32

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a,b,x;
    clrscr();
    a=5;
    b=10;
    x=(a>b)? a:b;
    printf ("%d",x);
    getch();
}
```

Output:

15

SE

Output:

Enter a year: 2016

leap year

Enter a year: 2017

not a leap year

### Practical no.3

Aim: write a c-program to find whether the entered year is leap year or not.

source code:

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int n;
    clrscr();
    printf("Enter a year:");
    scanf ("%d", &n);
    if (n%4==0)
    {
        printf ("leap year");
    }
    else:
    {
        printf ("not a leap year");
    }
    getch();
}
```

program: To find even and odd

Algorithm:

Step1: Specify the header file needed in the program

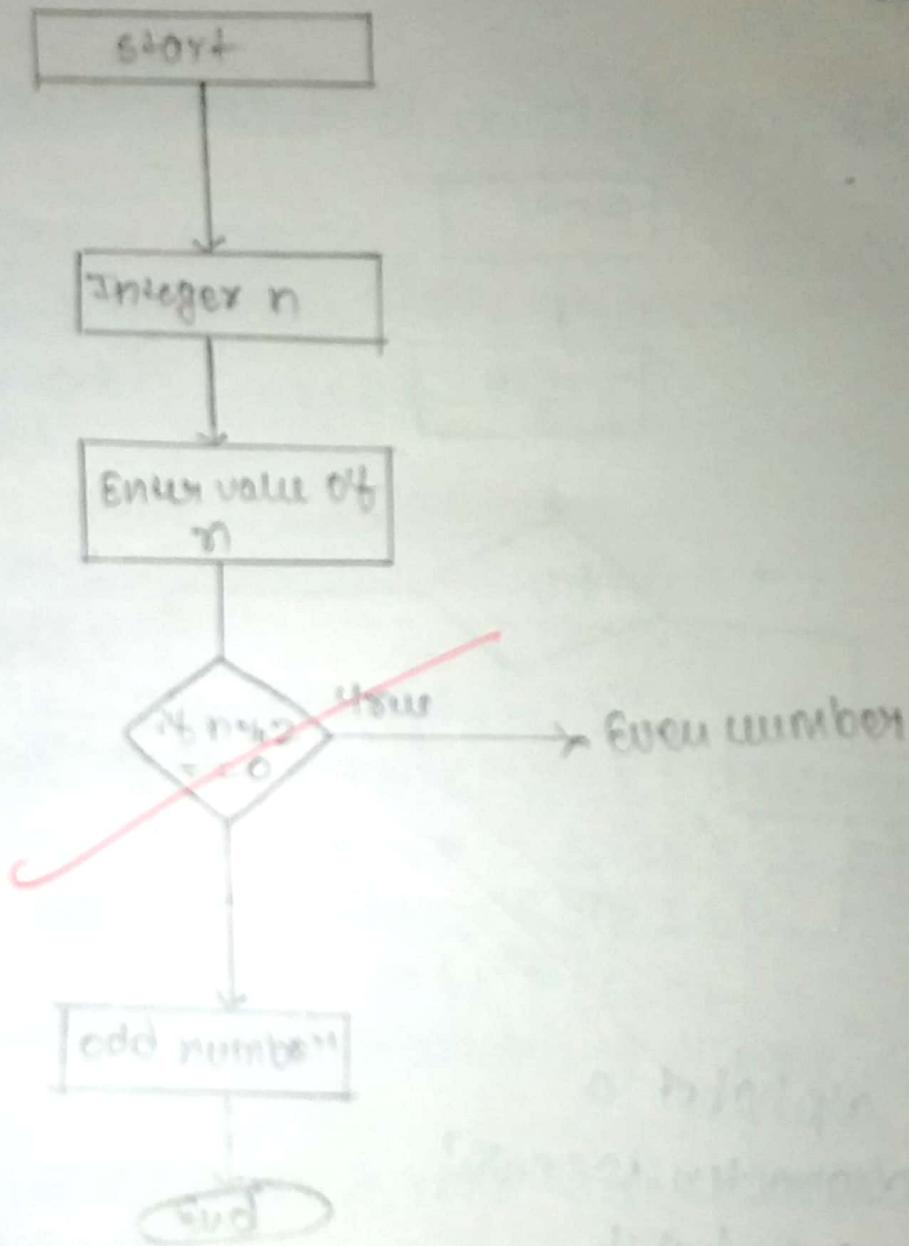
Step2: Inside the void main block define 1 variable of integer.

Step3: Ask the user to enter value and store it in variable n.

Step4: If the number is divisible by 2 then it is even number else odd number.

Code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int n;
    clrscr();
    printf("Enter the value of n");
    scanf("%d",&n);
    if(n%2==0)
        printf("Even number");
    else
        printf("Odd number");
    getch();
}
```

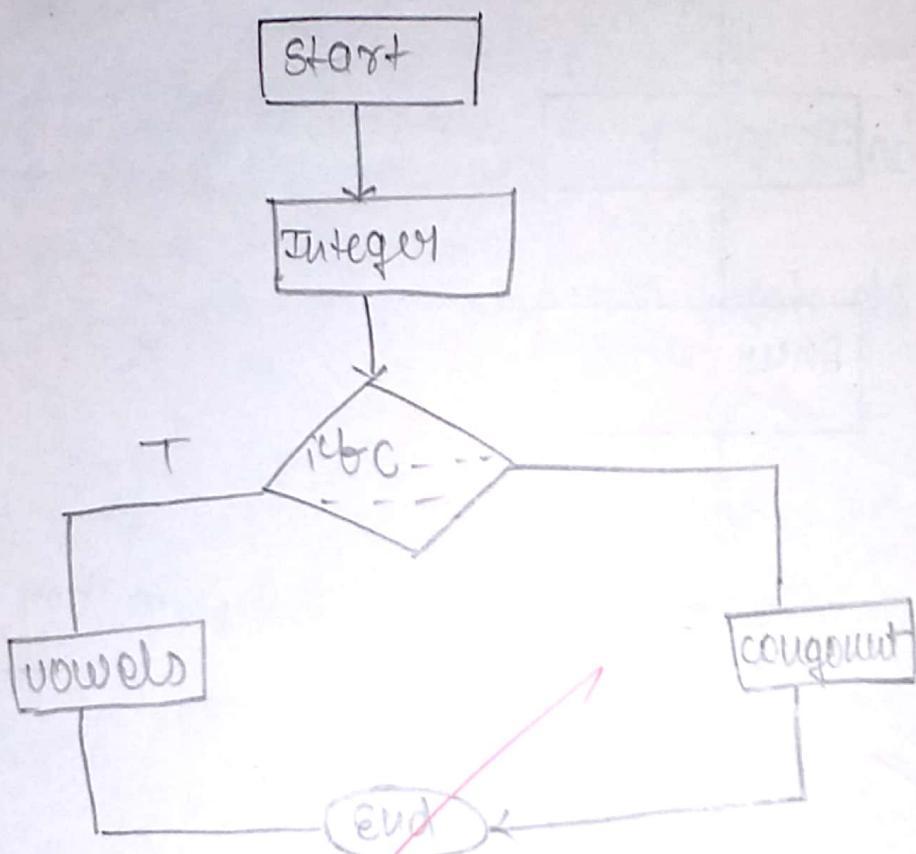


Output:-

Enter the value of n: 4  
Even number

Enter the value of n: 5  
Odd number

ME



output:

Enter a alphabet:a

Entered character is vowel

Enter a alphabet:b

Entered character is congonent

Program3:- To check whether is vowel or consonant .

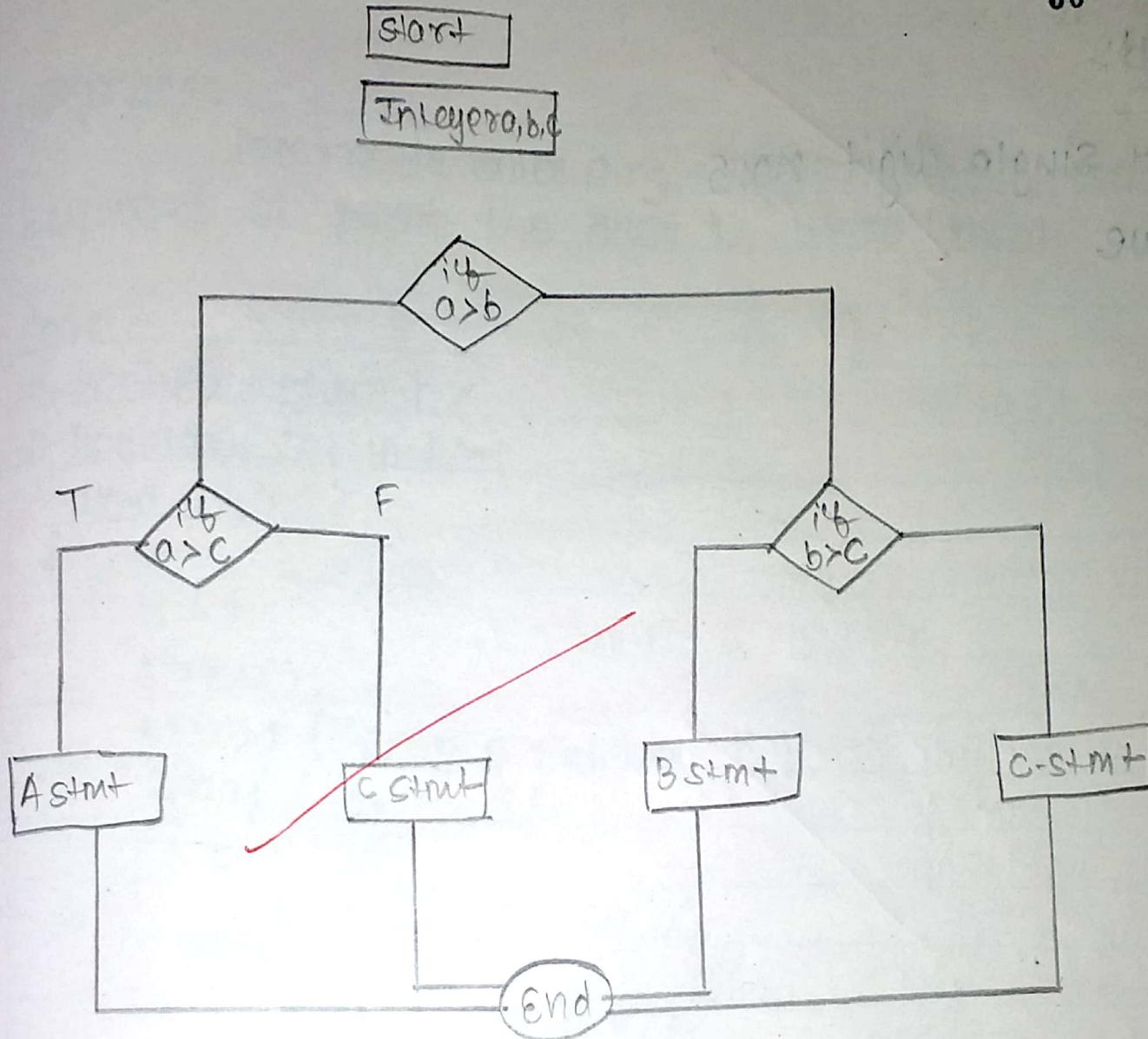
code:-

```
# include <stdio.h>
# include <conio.h>
void main()
{
    char ch;
    clrscr();
    printf("Enter an Alphabet");
    scanf("%c", &ch);
    if (ch == 'a' || ch == 'A' || ch == 'e' || ch == 'E'
        || ch == 'i' || ch == 'I' || ch == 'o' || ch == 'O'
        || ch == 'u' || ch == 'U')
        printf("Entered character is vowel");
    else
        printf("Entered character is consonant");
}
```

Program 4: Greater of three numbers (nested if)

Code:-

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a,b,c;
    clrscr();
    printf("Enter value of a,b,c:");
    scanf("%d %d %d", &a, &b, &c);
    if (a > b)
    {
        if (a > c)
        {
            printf("\n%d is largest", a);
        }
        else
        {
            printf("\n%d is largest", c);
        }
    }
    else
    {
        if (b > c)
        {
            printf("\n%d is largest", b);
        }
        else
        {
            printf("\n%d is largest", c);
        }
    }
    getch();
}
```

Output:

Enter value of a,b,c : 10,20,30  
30 is largest

Enter value of a,b,c : 20,50,70  
70 is largest

25

Output:

Enter single digit no:5  
Five

program 5:-

Program to enter single digit number from keyboard and print the digit in word form.

Code:-

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int n;
    clrscr();
    printf("Enter a number : ");
    scanf("%d", &n);
    if(n==0)
        printf("\n zero");
    else if(n==1)
        printf("\n one");
    else if(n==2)
        printf("\n two");
    else if(n==3)
        printf("\n three");
    else if(n==4)
        printf("\n four");
    else if(n==5)
        printf("\n five");
    else if(n==6)
        printf("\n six");
    else if(n==7)
        printf("\n seven");
    else if(n==8)
        printf("\n eight");
}
```

```

else if (n == 9)
    printf("in nine");
else
    printf("enter single digit number");
getch();
}

```

program 6: program to perform arithmetic operation using switch case.

Code:-

```

#include <stdio.h>
#include <conio.h>
void main()
{
    int n1, n2, res, ch;
    clrscr();
    printf("1. addition 2. subtraction 3.
           division 4. multiplication");
    printf("Enter your choice : ");
    scanf("%d", &ch);
    if (ch >= 4 & ch <= 1)
    {
        printf("\nEnter the value of a ");
        scanf("%d", &n1);
        printf("\nEnter value of b ");
        scanf("%d", &n2);
    }
}

```

Output:-

1. Addition  
2. Subtraction

3. Division

4. Multiplication

Enter your choice: 1

Enter the value of a: 5

Enter the value of b: 10

$$10 + 5 = 10$$

EE

## practicals

Q " program to print number upto 50  
code

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int i;
    clrscr();
    for(i=2; i<=50; i+=2)
    {
        printf("%d\n", i);
    }
    getch();
}
```

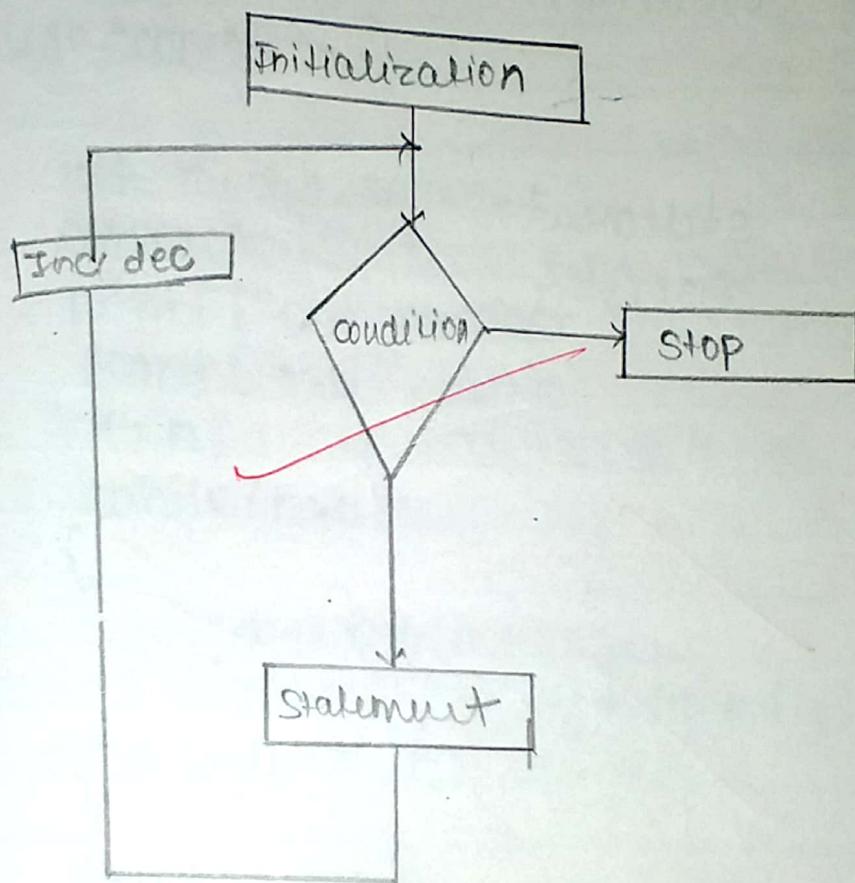
Algorithm:

- 1) start
- 2) include appropriate libraries
- 3) use for conditional loop to iterate the declared variable till go.
- 4) increment the iterating variable by 1
- 5) print the output.

Output:

2 4 6 8 10 12 14 16 18 20  
22 24 26 28 30 32 34 36 38 40.  
42 44 46 48 50

40



Op

Initialization

condition

statement  
inc/dec



Output:

Enter number : 53

53 is Armstrong number

Enter number : 20

20 is not a Armstrong number

Q: write a C-program to check the given number is Armstrong or not.

```
#include<stdio.h>
#include<conio.h>
{
    int n, dig, ans=0, t;
    clrscr();
    printf("Enter number:");
    scanf("%d", &n);
    t=n;
    while(n>0)
    {
        dig=n%10;
        ans=ans+(dig*dig*dig);
        n=n/10;
    }
    if(t==ans)
        printf("%d is Armstrong", t);
    else
        printf("%d is not Armstrong", t);
    getch();
}
```

\* write a program to obtain following output

\*  
\* \*  
\* \* \*  
\* \* \* \*  
\* \* \* \*

Algorithm:

Step1: Initialize two variable with integer datatype.

Step2: Use nested conditional statement and check it is less than equal to 5 increment by 1.

Step3: In another condition check value starts from 18 less than equal to previous conditional variable increment by 1

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int i,j;
    clrscr();
    for(i=1; i<=5 ;i++)
    {
        for(j=1; j<=i; j++)
        {
            printf("*");
        }
        printf("\n");
    }
    getch();
}
```

Output:

\*\*\*  
\*\*\*  
\*\*\* \*\*\*  
\*\*\* \*\*\* \*\*\*  
\*\*\* \*\*\* \*\*\* \*\*\*

42

write a program to obtain following output:

1  
2 2  
3 3 3  
4 4 4 4  
5 5 5 5 5

source code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int i, j;
    clrscr();
    for(i=1; i<=5; i++)
    {
        for(j=1; j<=i; j++)
        {
            printf("%d", j);
        }
        printf("\n");
    }
    getch();
}
```

Q8

write a program to obtain following output:

1  
2 3  
4 5 6  
7 8 9 10  
11 12 13 14 15

Source code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int i, j, i<=1;
    clrscr();
    for(j=1; i<=5; j++)
    {
        for(i=1; i<=j; i++)
        {
            printf("%d\t", i);
        }
        printf("\n");
    }
    getch();
}
```

Algorithm:

Step 1: Initialize the three variable with datatype integer.

Step 2: Use nested for conditional statement and check if it is less than equal to 5 and increment by 1.

Step 3: Use another for conditional statement which i and less than equal to previous conditional variable and increment by 1.

Step 4: Print the variable (k) with integer datatype and increment it by 1.

Step 5: Stop.

## Practical no.5

### Program on array

Program 1:- To find largest of three numbers.

Code 1:-

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int i, num[5], sum=0;
    clrscr();
    printf("Enter the elements in array");
    for(i=0; i<5; i++)
    {
        scanf("%d", num[i]);
    }
    printf("The entered elements are");
    for(i=0; i<5; i++)
    {
        printf("\n%d", num[i]);
        sum = sum + num[i];
    }
    printf("\nSum of element is : %d", sum);
    getch();
}
```

Output:-

Enter the elements into array: 5

4  
5  
6  
7  
3

~~Entered array elements are: 3 4 5 6 7~~

46

31

Output:

Enter number of elements : 5

Enter number: 1

Enter number: 2

Enter number: 3

Enter number: 4

Enter number : 5

sum of elements : 15

Average of elements : 5

Program to find sum and average of all elements of array.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    float arr[10], n, sum=0;
    float avg;
    clrscr();
    printf("Enter number of elements:");
    scanf("%f", &n);
    for(i=0; i<n; i++)
    {
        printf("Enter numbers:");
        scanf("%d", &arr[i]);
    }
    for(i=0; i<n; i++)
    {
        sum=sum+arr[i];
    }
    avg=sum/n;
    printf("sum of elements = %f", sum);
    printf("Average of element = %f", avg);
    getch();
}
```

write a program to sort the elements of an array

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int arr[10], i, n, t, i, j;
    clrscr();
    printf("Enter number of elements:");
    scanf("%d", &n);
    for (j=0; j<n; j++)
    {
        for (i=0; i<n-1; i++)
        {
            if (arr[i] > arr[i+1])
            {
                t = arr[i];
                arr[i] = arr[i+1];
                arr[i+1] = t;
            }
        }
    }
}
```

Output:-

48

Enter number of elements : 5

Enter number : 23

Enter number : 45

Enter number : 77

Enter number : 21

Enter number : 12

Sorted elements are :

12  
21  
23  
45  
7

```
printf("n sorted numbers are :");  
for (i=0; i<n; i++)  
{  
    printf("\n %d", arr[i]);  
}  
getch();
```

\* Program for finding largest upto 10.

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int arr[10], i, n, max;
    clrscr();
    printf("Enter number of elements: ");
    scanf("%d", &n);
    for (i=0; i<n; i++)
    {
        printf("Enter number: ");
        scanf("%d", arr[i]);
    }
    max = arr[0];
    for (i=0; i<n; i++)
    {
        if (arr[i] > max)
        {
            max = arr[i];
        }
    }
    printf("Largest element is %d", max);
    getch();
}
```

Output::

Enter number of elements: 10

50

Enter number: 12

Enter number: 23

Enter number: 34

Enter number: 56

Enter number: 92

Enter number: 13

Enter number: 112

Enter number: 39

Enter number: 67

Enter number: 74

Largest element is: 112

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