

Practical No 1

Aim: Write a program for addition using + operator.

A.1) Program:-

```
#include <iostream.h>
#include <conio.h>
Void main
{
    clrscr();
    int a= 20 , b= 25 ,c';
    c= a+b;
    cout << "The result of addition is : ";
    cout << c;
    getch();
}
```

Output

The result of addition is : 45

Aim Write a program for subtraction using - operator.

A.2 → #include <iostream.h>

#include <conio.h>

void main ()

{

clrscr();

int a= 10, b=5, c;c;

c = a-b;

cout << "The result of subtraction is:";

cout << c;

getch();

}

Output :-

The result of subtraction is : 5

Aim Write a program for multiplication using 'x' operator.

A.8) ~~# include <iostream.h>~~
~~# include <conio.h>~~
void main()
{
clrscr();
int a=5, b=2, c;
c = a x b;
cout << "The result of multiplication is :";
cout << c;
getch();
}

Output : The result of multiplication is : 10

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Aim:- Write a program using Division '/' operator.

```
#include <iostream.h>
#include <conio.h>
void main ()
{
    clrscr ();
    in a=10 , b=5 ; c ;
    c = a/b ;
    cout << "The result of division is:" ;
    cout << c ;
    getch ();
}
```

O/P :- The result of division is: 2

Aim Write a program for Modulus using % operator.

A.5) Program

```
#include <iostream.h>
#include <conio.h>
void main()
{
    clrscr();
    int a=9, b=2, c;
    c = a%b;
    cout << "The result of Moduels is : ";
    cout << c;
    getch();
}
```

O/p :- The result of Moduels is : 1

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Aim Write a program for logical operator (OR) using (||) operator.

B.2

```
#include <iostream.h>
#include <conio.h>
void main()
{
    clrscr();
    int a=20, b=10, c=8, ans;
    ans = (a>b) || (b>c) || (b>c);
    cout << "The result of logical operator is : ";
    cout << "ans";
    getch();
}
```

output :- The result of logical operator is : 1

Aim:- Write a program for logical operator using AND (&&)

B.I)

```
#include <iostream.h>
#include <conio.h>
void main ()
{
    clrscr();
    int a= 20, b=10, c= 5 , ans;
    ans= (a>b) && (a>c)
    cout << "The result of logical operator is!";
    cout << ans;
    getch ();
}
```

O/P :- The result of logical operator is! 1

Aim

Write a program for logical operator using (!) operator
(logical NOT)

```
B.B) # include <iostream.h>
# include <conio.h>
void main()
{
    clrscr();
    int a= 20, b=10, c=5 > ans;
    ans = (a>b) !. (a>c);
    cout << "The result of logical operator is: ";
    cout << ans;
    getch();
}
```

O/P The result of logical operator is: 1

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Aim: Write a program for Conditional Operator using (? :)

C. # include <iostream.h>

include <conio.h>

void main()

{

clrscr();

int a = 20, b = 10, answer;

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

cout << "The result of conditional operator is:"

cout << answer;

getch();

}

O/P :- the result of conditional operator is: 20

Aim write a program for while loop.

D. ~~#include <iostream.h>~~

~~# include <conio.h>~~

~~void main()~~

~~{~~

~~clrscr();~~

~~int a=1;~~

~~while (a<=5)~~

~~{~~

~~cout << a << endl;~~

~~a++;~~

~~{~~

~~getch();~~

~~{~~

O/P :- 1

2

3

4

5

Aim :- Write a program for 'for loop'

```
#include <iostream.h>
#include <conio.h>
void main()
{
    clrscr();
    int i;
    for (i=0; i<=10; i++)
    {
        cout << i << endl;
    }
    getch();
}
```

O/p 1

2

3

4

5

6

7

8

9

10

Aim:- Write a program for Manipulators using endl, set w, set precision and setfill ().

```
#include <iomanip.h>
#include <iostream.h>
#include <conio.h>

int main().
{
    clrscr();
    int a = 10;
    float = 2.4567, 11.4611;
    cout << "Set w value is: " << setw(5) << a << endl;
    cout << "Set precision value is: " << setprecision(2) << endl;
    cout << "Set fill value is: " << setfill('#') << a << b;
    getch(); cout << setfill('$') << setw(10) << a;
    getch();
}
```

O/P :-

Set w value is: 10

Set precision value is: 2.45

Set fill value is : 10

~~This is program for manipulators:~~
11.46
\$\$\$\$\$ \$ \$ 25

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- (B) Aim write a program among 3 number which number is greater by using of if - else statement.

```
#include <iostream.h>
#include <conio.h>
void main ()
{
    clrscr();
    int a, b, c;
    cout << "enter three numbers:" ;
    cin >> a >> b >> c;
    if (a > b & & b > c)
        cout << "a is greater" << a;
    else if (b > a & & b > c)
        cout << "b is greater" << b;
    getch();
}
```

O/P :- enter three numbers: 2 4 6
c is greater: 6

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Practical - 2(A)

Aim: Write a program to check whether the given no is even or odd.

```
# include <iostream.h>
# include <conio.h>
void main()
{
    clrscr();
    int a=10;
    if (a%2==0)
    {
        cout << "the number is even:" << a;
    }
    else
    {
        cout << "the number is odd :" << a;
    }
    getch();
}
```

O/P ~~The number is even : 10~~

Aim:- write a program to check character the entered character vowel or not.

include <iostream.h>

include <conio.h>

Void main()

{

clrscr();

char n;

cout << "enter your alphabetical character:";

cin >> n

switch (n).

{

case 'a':

cout << "a is vowel";

break;

case 'e':

cout << "e is vowel";

cout << "e is vowel break";

case 'i':

cout << "i is vowel";

break;

case 'o':

cout << "o is vowel";

break;

case 'u':

cout << "u is vowel";

break;

default

cout << n << " is consonant";

break;

{ getch(); }

Aim write a program for single dimensional array.

include <iostream.h>

include <conio.h>

Void main ()

{

clrscr ();

cout << "enter your elements: \n";

int i, a [3];

for (i=0; i<3; i++)

{

cin >> a[i];

cout << endl;

}

cout << "single dimension array is: \n";

for (i=0; i<3; i++)

{

cout << a[i] << "\t";

{

getch();

}

O/P enter your elements:

34 45 65

single dimension array is:

34 45 65

Aim: Write a program by using string

```
# include <stdio.h>
# include <iostream.h>
# include <conio.h>
void main()
{
    clrscr();
    char a[50];
    cout << "Enter a string : ";
    gets(a);
    cout << "the entered string is : " << a;
    getch();
}
```

Op enter a string : ctt is a programming language

the entered string is : ctt is a programming language

Q

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O/P elements of arrays are;

45

67

96

11

12

14

16

17

19

The entered elements are as follows:

45 67 96

11 12 14

16 17 19

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Aim:- write a program for multi-dimensional array.

```
#include <iostream.h>
#include <conio.h>
void main()
{
    clrscr();
    int i, j, a[3][3];
    cout << "elements of array are:" ;
    for (i=0, i<3; i++)
    {
        for (j=0; j<3; j++)
        {
            cin >> a[i][j];
        }
    }
    cout << endl;
}
cout << "the entered elements are as follows :\n";
for (i=0, i<3; i++)
{
    for (j=0, j<3; j++)
    {
        cout << a[i][j] << "\t";
    }
    cout << endl;
}
getch();
```

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Aim Write a program by using break, continue and goto.

* break

```
# include <iostream.h>
# include <conio.h>
void main()
{
    clrscr();
    int i;
    for(i=1; i<10; i++)
    {
        if (i==5)
            break;
        cout << i << endl;
    }
    getch();
}
```

O/P

1

2

3

4

5

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* Continue

```
# include <iostream.h>
# include <conio.h>
void main()
{
    clrscr();
    int i;
    for (i=1; i<=10; i++)
    {
        if (i == 5)
            continue;
        cout << i << endl;
    }
}
```

O/P

1

2

3

4

5

6

7

8

9

10

62

A goto

```
# include <iostream.h>
# include <conio.h>
Void main()
{
    clrscr();
    cout << "Hi! welcome";
    goto aa;
aa: cout << " to programming";
    goto bb;
bb: cout << " language";
    getch();
}
```

O/p Hi! welcome to programming language

g/

A. Aim: write a program for internally defined function

```
# include <iostream.h>
```

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

```
class circle
```

```
{
```

```
int r;
```

```
float a;
```

```
public :
```

```
void read()
```

```
{
```

```
cout<<"Enter the radius:";
```

```
cin>>r;
```

```
}
```

```
void compute()
```

```
{
```

```
a = 3.14 * r * r;
```

```
}
```

```
void display()
```

```
{
```

```
cout << "Area of circle = "<<a;
```

```
{
```

```
};
```

```
void main()
```

```
{
```

```
clrscr();
```

```
circle c;
```

```
c.read();
```

```
c.compute();
```

```
c. display();  
getch();  
g
```

o/p :

Enter the radius : 10

Area of circle = 314

B. Aim : write a program for externally defined function

```
#include <iostream.h>  
#include <cmath.h>  
class circle  
{  
    int r;  
    float a;  
public:  
    void read();  
    void compute();  
    void display();  
}  
  
void circle :: read()  
{  
    cout << "Enter the radius =";  
    cin >> r;  
}  
  
void circle :: compute()
```

$\pi = 3.14$ if $r \neq r;$

void circle :: display()
{

cout << "Area of circle = " << a;
}

void main()
{

clrscr();

circle C

c. read();

c. compute();

c. display();

getch();

}

O/p:-

Enter the radius = 5

Area of circle = 78.5

Aim: write program for inline function

include <iostream.h>

include <conio.h>

class circle

{

float r, a;
public:

```
void read();
void compute();
void display();
};

inline void circle:: read()
{
    cout << "Enter the radius = ";
    cin >> r;
}

inline void circle :: display()
{
    cout << "Area of circle = " << a;
}

void main()
{
    clrscr();
    circle c;
    c. read();
    c. compute();
    c. display();
    getch();
}
```

O/p:
Enter the radius = 5
Area of circle = 78.5

```

inline void circle :: display()
{
    cout << "Area of circle = " << a;
}

void main()
{
    clrscr();
    int r;
    cout << "Enter the radius = ";
    cin >> r;
    circle c(r);
    c.compute();
    c.display();
    getch();
}

```

o/p :-
 Enter the radius = 5
 Area of circle = 78.5

f. Aim: write a program for Destructor.

```

#include <iostream.h>
#include <conio.h>
class test
{
    int pi;
public:
    test()

```

```
{  
    P = new int;  
}  
void read()  
{  
    cout << "Enter a number:";  
    cin >> *P;  
}  
void display()  
{  
    cout << "value = " << *P << endl;  
}  
~ test()  
{  
    delete P;  
    cout << "destroyed";  
}  
};  
void main()  
{  
    clrscr();  
    test t;  
    t.read();  
    t.display();  
    getch();  
}
```

O/P: Enter a number: 5
value = 5
Destroyed

1) Aim: write a program for default constructor

```
# include <iostream.h>
```

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

```
class circle
```

```
{
```

```
float a;
```

```
int r;
```

```
public:
```

```
circle()
```

```
{
```

```
cout << "Enter the radius = ";
```

```
cin >> r;
```

```
{
```

```
void compute();
```

```
void display();
```

```
{
```

```
inline void circle :: compute()
```

```
{
```

```
a = 3.14 * r * r;
```

```
}
```

```
inline void circle :: display()
```

```
{
```

```
cout << "Area of circle = " << a;
```

```
{
```

```
void main()
```

```
{
```

```
cls(r);
```

```
circle();
```

c. compute();
c. display();
getch();
3

O/p :

Enter the radius = 5
Area of circle = 78.5

E. Aim: Write a program for parameterized constructor

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

```
class circle
```

```
{
```

```
    int r;  
    float a;
```

```
public :
```

```
circle :
```

```
{
```

```
r = n;
```

```
3
```

```
void dispcompute();
```

```
void display();
```

```
3,
```

```
inline void circle::compute()
```

```
{
```

```
a = 3.14 * r * r;
```

```
3
```

Q1: Aim: write a program for Copy constructor

```
# include <iostream.h>
```

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

```
Class circle
```

```
{
```

```
int r;
```

```
float a;
```

```
Public:
```

```
circle (int a)
```

```
{
```

```
r = a;
```

```
}
```

```
circle (circle & c)
```

```
{
```

```
r = c.r;
```

```
}
```

```
Void Compute () ;
```

```
Void display () ;
```

```
{
```

```
inline Void circle :: Compute ()
```

```
{
```

```
a = 3.14 * r * r;
```

```
}
```

```
inline Void circle :: display ()
```

```
{
```

```
cout << " Area of circle = " << a << endl;
```

```
}
```

```
Void main ()  
{  
clrscr ();  
int p;  
cout << " Enter the radius = ";  
cin >> p ;  
Circle c (p) ;  
c. Compute ();  
c. display ();  
Circle cl ();  
cl. Compute ();  
cl. display ();  
getch();  
}
```

Output :

Enter the radius = 5
Area of Circle = 78.5

A Aim : Write a program for single inheritance

```
# include <iostream.h>
```

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

```
class Data
```

```
{
```

```
Public :
```

```
int a, b;
```

```
Public :
```

```
Void read()
```

```
{
```

```
Cout << "Enter two numbers:" ;
```

```
Cin >> a >> b ;
```

```
}
```

```
};
```

```
class sum : public Data
```

```
{
```

```
Public :
```

```
int sum;
```

```
Public :
```

```
Void add()
```

```
{
```

```
Sum = a + b;
```

```
}
```

```
Void display()
```

```
{
```

```
Cout << "The sum is :" << sum;
```

```
}
```

```
};
```

Void main ()
{

clrscr ();
sum a ;
a. read ();
a. add ();
a. display ();
getch
?

Output :

Enter two numbers : 4
5

The Sum is : 9

B. Aim: write a program for multilevel inheritance

```
# include <iostream.h>
# include <conio.h>
class Data
```

```
{ public :
int P, C, M ;
public :
void read ()
```

```
{ cout << "Enter the marks obtained in Physics
chemistry and maths:" ;
```

```
cin >> P >> C >> M ;
```

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Percent a ;

a. read ();

a. sum ();

a. calculate ();

a. display ();

getch
};

output :

Enter the marks obtained in physics , chemistry
and math : 90

98

99

Percentage = 95.66

Aim: Write a program for hybrid inheritance

```
# include <iostream.h>
```

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

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

```
class student
```

```
{
```

```
public :
```

```
char name [20];
```

```
int roll no;
```

```
};
```

```
class test : public student
```

```
{
```

```
public :
```

```
int marks;
```

```
public :
```

```
Void read ()
```

```
{
```

```
cout << "Enter name , roll no and marks obtained :  
gets (name);
```

```
Cin >> roll no >> marks ;
```

```
}
```

```
};
```

```
class sports
```

```
{
```

```
public :
```

```
int score ;
```

```
public :
```

```
Void accept ()
```

{

cout << "1 student has won in national level in ?
Student did not won in national level:";
cin >> score;

{

};

class result : public test, public sports

{ int total ;

public :

void calculate ()

{

if (score == 1)

total = marks + 15 ;

else

total = marks ;

{

void display ()

{

cout << "The total is = " << total ;

{

{

void main ()

{ close();

result r;

r.read ();

r.accept ();

r.calculate ();

r.display ();

getch ();

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Output:

Enter name . roll no and marks obtained: Nandini
11
77

1. student has won in national level
2. student did not won in national level: 1

The total is = 92

A. Aim : Write a program for function overriding.

```
#include <iostream.h>
```

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

```
class base
```

```
{
```

```
public:
```

```
int a, b;
```

```
public:
```

```
Void read()
```

```
{
```

```
Cout << "Enter the number:";
```

```
Cin >> a >> b;
```

```
}
```

```
Void display()
```

```
{
```

```
Cout << "The Values are :" << a << "\n" << b;
```

```
}
```

```
};
```

```
class sub : public class base
```

```
{
```

```
public:
```

```
int c, d;
```

```
public:
```

```
Void read()
```

```
{
```

```
Cout << "Enter Four numbers:";
```

```
Cin >> a >> b >> c >> d;
```

```
}
```

Void display ()

{
cout << "The Values are: " << a << "In " << b << "\n" <<
"In " << d;
}
}

Void main ()

{
clrscr ();
sub s;
s. read ();
s. display ();
getch ();
}

B. Aim: Write a program to demonstrate dynamic binding using virtual function.

```
# include <iostream.h>
# include <conio.h>
class base
{
public:
    int a,b;
public:
    virtual void read()
    {
        cout << "Enter two numbers:" ;
        cin >> a >> b;
    }
}
```

Virtual Void display ()

{
cout << "The values are :" << a << "\n" << b;
}
};

class sub : public base

{
public :

int c, d ;

public:

Virtual Void read ()

{
cout << "Enter Four values :";
cin >> a >> b >> c >> d;
}

Virtual Void display ()

{
cout << "In The Values are :" << a << "\n" << b << "\n" <<
c << "\n" << d << endl;
}

};

Void main()

{
close();
base * ptr;

base b;

sub s;

ptr = & b;

ptr → read ();

`ptr = & s;`

`ptr → read();`

`ptr → display();`

`? getch();`

Output :

`Enter two Values : 1`

`2`

`The Values are : 1`

`2`

`Enter four Values : 1`

`2`

`3`

`4`

`The 4 Values are : 1`

`2`

`3`

`4`

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$\text{ptr} = \& s;$
 $\text{ptr} \rightarrow \text{read}();$
 $\text{ptr} \rightarrow \text{display}();$
3
 $\text{getch}();$

Output :

Enter two values : 1

2

The Values are : 1

2

Enter four values : 1

2

3

4

The 4 Values are : 1

2

3

4

A. Aim: Write a program to demonstrate pure Virtual

```
# include <iostream.h>
# include <conio.h>
class base
{
public:
int a, b;
public:
Virtual Void read()
{
Virtual Void display() = 0;
}
public:
int c,d;
public:
Void read()
{
cout << Enter four Values
cin >>a >>b >>c >>d;
}
Void display()
{
cout << "The Values are:" <<a <<"\n" <<b <<"\n" <<c
<<"\n" <<d;
}
```

```
Void main ()  
{  
    clrscr ();  
    Sub S;  
    base * Ptr;  
    ptr = & S;  
    ptr → read ();  
    ptr → display ();  
    getch ();  
}
```

Output :

Enter four Values : 3 6 9 8
The Values are : 3

6

9

8

B. Aim : Write a program to demonstrate Virtual class
and abstract class

```
#include <iostream.h>  
#include <conio.h>  
class base  
{  
public :  
    int a, b;  
public :  
    Void read ()
```

{

```
Cout << "Enter two Values : " ;  
cin >> a >> b;
```

}

```
Void display ()
```

```
Cout << "The Values are :" << a << "\n" << b;  
}
```

};

```
class Sub: public Virtual base
```

```
{
```

```
int c,d;
```

```
Void read ()
```

{

```
Cout << "Enter four Values : " ;
```

```
cin >> a >> b >> c >> d;
```

}

```
Void display ()
```

```
Cout << "The Values are :" << a << "\n" << b << "\n"  
     << c << "\n" << d;
```

}

};

```
Void main ()
```

{

```
cls();
```

```
Sub s;
```

```
s.read();
```

s. display();
getch();
3

Output:

Enter four values : 3 9 5 8

The Values are : 3
9
5
8

A. Aim: Write a program using referencing and operator of the pointer.

```
# include <iostream.h>
# include <conio.h>
Void main ()
{
    clrscr();
    int a, * p;
    a = 125;
    p = & a;
    cout << a << endl;
    cout << p << endl;
    cout << * p << endl;
    getch ();
}
```

Output :

125
10FCA32
125

B. Aim : Write a Program for pointer to Pointer

```
#include <iostream.h>
```

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

```
Void main ()
```

```
{
```

```
clrscr ();
```

```
int a * p * * pl ;
```

```
a = 125;
```

```
p = & a;
```

```
pl = & p;
```

```
Cout << a << endl;
```

```
Cout << p << endl;
```

```
Cout << pl << endl;
```

```
Cout << * p << endl;
```

```
Cout << * pl << endl;
```

```
Cout << * * pl << endl;
```

```
getch ();
```

Output :

125

16A = 32C1

53CB1821

125

125

A. Aim : Write a program using friend function

```
#include <iostream.h>
#include <conio.h>
class Example
{
    friend void display(Example);
    int n, m;
public
    void getData()
    {
        cout << "Enter the two numbers : ";
        cin >> n >> m;
    }
    void show()
    {
        cout << "N = " << n;
        cout << " M = " << m;
    }
};

void main()
{
    clrscr();
    Example ef;
    ef.getData();
    cout << " Data displayed through member function ";
    ef.show();
    cout << " Data displayed through friend function ";
    display(ef);
}
```

```
getch();  
}
```

```
Void display (Example e)  
{
```

```
Cout << "In N = " << e.n;  
Cout << "In M = " << e.m;  
}
```

Output : (

Enter two numbers:

2
4

Data displayed through member function

N = 2

M = 4

Data displayed through friend function

N = 2

M = 4

B. Aim : Write a program to write and read a string from a file or to a file.

```
#include <iostream.h>
#include <conio.h>
#include <fstream.h>
Void main()
{
    char msg [20];
    of stream o;
    o.open ("test0", ios :: in)
    o << "Hello friend !!." << endl;
    o << "Bye !!." << endl;
    o, close ();
    ifstream i;
    i.open ("test0", ios :: out);
    i >> msg;
    cout << msg << endl;
    i >> msg;
    cout << msg << endl;
    getch ();
}
```