

```

/*
Vinay 7118
Program-15 : Use of Static Class member
*/
#include<iostream>
using namespace std;

class item{ static int
    count; int
    number; public:
    void getdata(int a){ number=a;
        count++;
    }
    void getcount(void){ cout <<
        "Count: "; cout <<
        count << endl;
    } }; int
item :: count;
int main(){ item
a,b,c;
    a.getcount();
    b.getcount();
    c.getcount();

    a.getdata(100);
    a.getdata(200);
    a.getdata(300);

    cout << "After reading data" << endl;

    a.getcount();
    b.getcount();
    c.getcount();
    return 0;
}

```

Output:

```

Count: 0
Count: 0
Count: 0
After reading data
Count: 3
Count: 3
Count: 3

...Program finished with exit code 0
Press ENTER to exit console.

```

```

/*
Vinay 7118
Program-16 : Use of static Member function
*/
#include<iostream>
using namespace std;
class test{ int code; static int
count; public:
    void setcode(void){
        code=++count;
    } void showcode(void){ cout << "Object number:
" << code << endl;
    } static void showcount(void){ cout <<
"count : " << count << endl;
    } }; int test
:: count; int
main(){
    test t1,t2; t2.setcode();
    test :: showcount(); test
t3; t3.setcode(); test ::
showcount();
t1.showcode();
t2.showcode();
t3.showcode(); return 0;

}

```

## Output:

```

count : 1
count : 2
Object number: 22071
Object number: 1
Object number: 2

...Program finished with exit code 0
Press ENTER to exit console.

```

```

/*
Vinay 7118
Program-17 : Array of Objects
*/
#include<iostream>
using namespace std;

class employee{ char
    name[30]; float age;
public: void
    getdata(void); void
    putdata(void);
}; void employee :: getdata(void){ cout << "Enter
name : "; cin >> name; cout << "Enter age : "; cin
>> age; } void employee :: putdata(void){ cout
<< "Name : " << name << endl; cout <<
    "Age : " << age << endl;
} int main(){ const int size=3; employee manager[size];
for(int i=0;i<size;i++){ cout << "\n Details of manager "
<< i+1 << endl; manager[i].getdata();
    } cout <<
    "\n"; for(int
    i=0;i<size;i+
    +){ cout <<
    "\n Manager
    " << i+1 <<
    "\n";
    manager[i].p
    utdata();
    } return
    0;
}

```

Output:

```
Details of manager 1
Enter name : Abhi
Enter age : 25

Details of manager 2
Enter name : Shourya
Enter age : 26

Details of manager 3
Enter name : Aryan
Enter age : 45

Manager 1
Name : Abhi
Age : 25

Manager 2
Name : Shourya
Age : 26

Manager 3
Name : Aryan
Age : 45
```

```

/*
Vinay 7118
Program-18 : Objects as arguments
*/
#include <iostream>
using namespace std;

class thime{ int hours,
            minutes; public:
            void gettime(int h, int m){ hours = h;
            minutes = m;
            } void puttime(){ cout << hours << " hours
            and "; cout << minutes << " minutes" <<
            endl;
            } void
            sum(thime,thime);
};

void thime::sum(thime t1, thime t2){ minutes =
            t1.minutes + t2.minutes; hours =
            minutes/60; minutes = minutes%60; hours
            = hours + t1.hours + t2.hours;
}

int main(){ thime t1, t2, t3;
            t1.gettime(2,45);
            t2.gettime(3,30);
            t3.sum(t1,t2); cout << "T1
            = "; t1.puttime(); cout
            <<"T2 = "; t2.puttime();
            cout << "T3 = ";
            t3.puttime(); return 0;
}

```

## Output:

```

T1 = 2 hours and 45 minutes
T2 = 3 hours and 30 minutes
T3 = 6 hours and 15 minutes

...Program finished with exit code 0
Press ENTER to exit console.

```

```

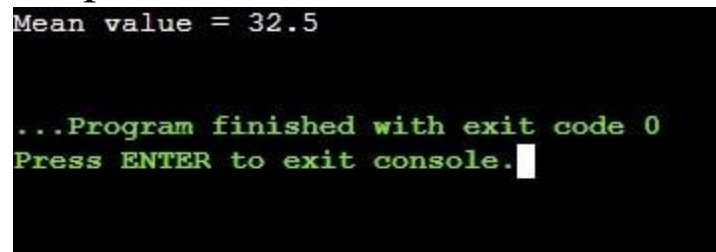
/*
Vinay 7118
Program-19 : Friend in one class
*/

#include<iostream>
using namespace std;
class sample{ int a; int b;
public:
    void setvalue(){ a=25;
    b=40; } friend float
    mean(sample s);
}; float mean(sample s){ return
    float(s.a + s.b)/2.0;
}

int main(){ sample X; X.setvalue(); cout << "Mean
value = " << mean(X) << endl; return 0;
}

```

## Output:



```

Mean value = 32.5

...Program finished with exit code 0
Press ENTER to exit console.

```

```
/*  
  Vinay 7118  
  Program-19 : Use in Default Constructor  
*/  
  
#include<iostream> using  
namespace std;  
  
class rect{ int length,breadth; public:  
    rect(){ length=5;  
            breadth=10;  
    }; int rectangle(){ return  
        (length*breadth);  
    } }; int main(){ rect result; cout  
<< result.rectangle(); return 0;  
}
```

Output:



```
50  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

```

/*
Vinay 7118
Program-21 : Parameterized Constructor
*/
#include <iostream> using
namespace std; class
Point{ int x, y; public:
    Point(int a, int b){ x =
    a; y = b; } void
    display()
    { cout << " ( " << x << " , " << y << " ) " << endl;
    } };
int
main()
{
    Point p1(2, 2); cout
    << "Point p1 = ";
    p1.display(); return 0;
}

```

Output:

```

Point p1 = ( 2 , 2 )

...Program finished with exit code 0
Press ENTER to exit console.

```



```

/*
Vinay 7118
Program-22 : Copy Constructor
*/
#include<iostream>
using namespace std;
class code{ int id; public:
code(){ } code(int a){
id=a; } code(code &x){ id
    = x.id; } void
    display(void){ cout
        << id;
    } }; int main(){
code A(100); code
B(A); code
    C=A; code D;
    D=A;

    cout << "\n id of A: ";
    A.display(); cout <<
    "\n id of B: ";
    B.display(); cout <<
    "\n id of C: ";
    C.display(); cout <<
    "\n id of D: ";
    D.display(); return 0;
}

```

## Output:

```

id of A: 100
id of B: 100
id of C: 100
id of D: 100

...Program finished with exit code 0
Press ENTER to exit console.

```

```

/*
Vinay 7118
Program-23 : Destructor
*/
#include<iostream>
using namespace std;

int count=0; class test{ public: test(){ count++; cout << "\nConstructor Msg:
Object number " << count << " created.. " ;
    }
    ~test(){ cout << "\n\nDestructors Msg: Object number " << count << "
        destroyed.."; count--;
    } }; int main(){ cout << "Inside the
main block.."; cout << "\n\nCreating first
object T1..";
test T1;{ cout << "\n\nInside Block 1..."; cout << "\n\nCreating two more
objects T2 and T3.."; test T2,T3; cout << "\n\nLeaving Block 1..";
    } cout << "\n\nBack inside the main block.."; return
0;
}

```

## Output:

```

Inside the main block..

Creating first object T1..
Constructor Msg: Object number 1 created..

Inside Block 1...

Creating two more objects T2 and T3..
Constructor Msg: Object number 2 created..
Constructor Msg: Object number 3 created..

Leaving Block 1..

Destructors Msg: Object number 3 destroyed..

Destructors Msg: Object number 2 destroyed..

Back inside the main block..

Destructors Msg: Object number 1 destroyed..

...Program finished with exit code 0
Press ENTER to exit console.

```

```

/*
Vinay 7118
Program-24 : Constructor with dynamic operation
*/
#include<iostream>
#include<string.h> using
namespace std;

class String{ char
    *name; int
    length; public:
    String(){ length=0; name=new
        char[length+1];
    }
    String(char *s){ length = strlen(s);
        name = new char[length+1];

        strcpy(name, s);
    } void display(void){ cout
        << name << endl;
    } void join(String &a,String
        &b);
}; void String :: join(String &a,String
&b){ length=a.length+b.length; delete
name; name = new char[length+1];
strcpy(name, a.name); strcat(name,
b.name);
}; int main(){ char
*first="Narendra ";
    String name1(first),name2("Modi "),name3("Jii"),s1,s2;
    s1.join(name1,name2); s2.join(s1,name3);
    name1.display(); name2.display(); name3.display();
    s1.display(); s2.display(); return 0;
}

```

## Output:

```

Narendra
Modi
Jii
Narendra Modi
Narendra Modi Jii

...Program finished with exit code 0
Press ENTER to exit console.

```

```

/*
Vinay 7118
Program-25 : Dynamic Object
*/
#include<iostream>
using namespace std;
class rectangle{ int l,b; public: rectangle(){ cout << "Const with no Parameter\n";
    } void read(){ cout << "Enter length & breadth : \n";
    cin>>l>>b;
    } void area(){ cout << "Area of rectangle is
    " << l*b;
    }
    ~rectangle(){ cout << "\nDestruct
        invoked";
    } }; int main(){ rectangle *ptr;
ptr = new rectangle; ptr -> read(); ptr
-> area(); cout << "\nDestruct Obj";
delete ptr;
    cout << "\nEnd of program"; return
    0;

}

```

## Output:

```

Const with no Parameter
Enter length & breadth :
10
10
Area of rectangle is 100
Destruct Obj
Destruct invoked
End of program

...Program finished with exit code 0
Press ENTER to exit console.

```

```

/*
Vinay 7118
Program-26 : Operator overloading post and prefix increment
*/
#include<iostream>
using namespace std;

class score{
    int val;
public:
    score(){
        val=0;
    }
    score operator++(){           //prefix overload operator function score temp;
        val=val+1;
        temp.val=val;
        return(temp);
    }
    score operator++(int){       //postfix overload operator function score temp;
        temp.val=val;
        val=val+1;
        return(temp);
    } int show(){
        return(val);
    }
}; int main(){
    score s1,s2;
    cout << "\nInitial value of s1 object is " << s1.show(); cout << "\nInitial
    value of s2 object is " << s2.show(); s2 = ++s1; cout << "\ns1 = " <<
    s1.show(); cout << "\ns2 after prefix operation = " << s2.show(); s2 = s1++;
    cout << "\ns1 = " << s1.show(); cout << "\ns2 after postfix operation = " <<
    s2.show(); return 0;
}

```

## Output:

```

Initial value of s1 object is 0
Initial value of s2 object is 0
s1 = 1
s2 after prefix operation = 1
s1 = 2
s2 after postfix operation = 1

...Program finished with exit code 0
Press ENTER to exit console.

```