UNIT -IV
Object Oriented Concepts

Passing objects as Arguments

The objects of a class can be passed as arguments to member functions as well as nonmember functions either by value or by reference.

When an object is passed by value, a copy of the actual object is created inside the function. This copy is destroyed when the function terminates.

Passing objects as Arguments

```
class className {
    ... .. ...

    public:
    void functionName(className agr1, className arg2)
    {
        ... .. ...
    }

    ... .. ..

};

int main() {

    className o1, o2, o3;
    o1.functionName (o2, o3);
}
```

```
class Demo
{
    private:
    int a;
    public:
    void set(int x)
    {
    a = x;
    }
void sum(Demo ob1, Demo ob2)
    {
    a  = ob1.a + ob2.a;
    }
    void print()
    {
    cout<<"Value of A :  "<<a<<endl;
    }
};
```

```
int main()
{
//object declarations
Demo d1, d2,d3;
//assigning values to the data member of
objects
d1.set(10);
d2.set(20);

//passing object d1 and d2
d3.sum(d1,d2);

//printing the values
d1.print();
d2.print();
d3.print();

return 0;
}
```

Returning an Object from a function

An object can be returned by a function using the return keyword.

```
#include<iostream>

class Student {...};

Student createStudent() {
    Student student;
    ... ...
    return student;
}

int main() {
    ... ...
    student1 = createStudent();
    ... ...
}
```

function call

Returning an Object from a function

```
class className {
    ... .. ...

    public:
    className functionName(className agr1)
    {
        className obj;
        ... .. ...
        return obj;
    }

    ... .. ..

};

int main() {

    className o1, o2, o3;
    o3 = o1.functionName (o2);
}
```

Arrays of Objects

When a class is defined, only the specification for the object is defined; no memory or storage is allocated.

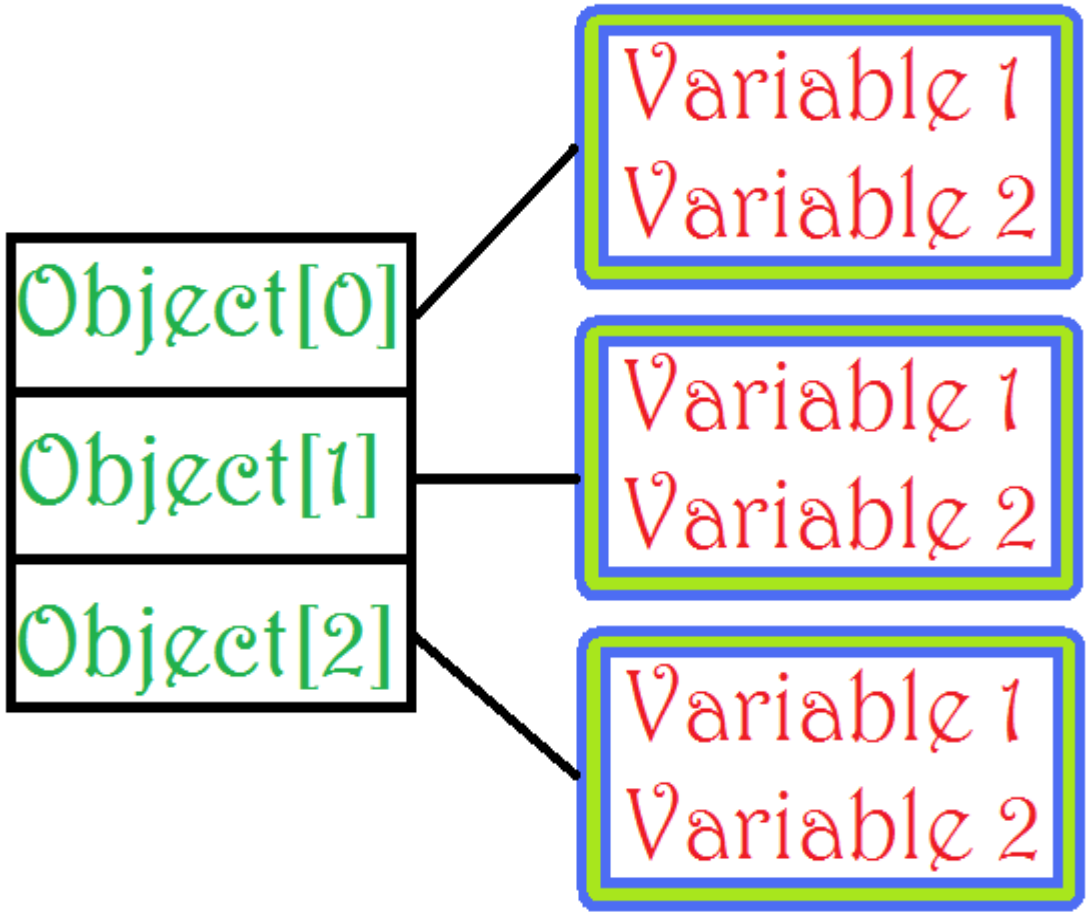
To use the data and access functions defined in the class, you need to create objects.

Syntax:

ClassName ObjectName[number of objects];

The Array of Objects stores objects. An array of a class type is also known as an array of objects.

Arrays of Objects



Arrays of Objects

```
class class-name
{
        datatype var1;
        datatype var2;
        - - - - - - - - - -
        datatype varN;

        method1();
        method2();
        - - - - - - - - - -
        methodN();
};

class-name obj[ size ];
```

```
class Employee
{
  int id;
  char name[30];
  public:
  void getdata();
void putdata();
};
void Employee::getdata()
{
  cout << "Enter Id : ";
  cin >> id;
  cout << "Enter Name : ";
  cin >> name;
}
```

```
void Employee::putdata()
{
  cout << id << " ";
  cout << name << " ";
  cout << endl;
}
 int main()
{
  Employee emp[30];
  int n, i;
  cout << "Enter Number of Employees
- ";
  cin >> n;
     for(i = 0; i < n; i++)
    emp[i].getdata();
     cout << "Employee Data - " << endl;
     for(i = 0; i < n; i++)
    emp[i].putdata();
}
```