

UNIT 2

Shreyasi



DESTRUCTOR

- It is another type of special member function.
- Its name starts with a tilde(~) character followed by the class name.
- It is implicitly called when an object is destroyed.

```
~Test()  
{  
    cout<<"Destructor runs for object:"<<objectID<<endl;  
}
```



COPY CONSTRUCTOR

- It is used to:
 - Initialize an object with a copy of another object of the same class.
 - Pass an object by value to a function.
 - Return an object by value from a function.

```
Test(const Test &obj)
{
    cout<<"In copy constructor"<<endl;
    objectID=obj.objectID;
    message=obj.message;
}
```



FRIEND FUNCTION

- It is a non-member function which has the right to access the public and non-public members of the class.
- Standalone functions or member functions of other classes may be declared as friends of another class.



```
#include<iostream>
using namespace std;
class Test
{
    friend void setID(Test &,int);
private:
    int objectID;
public:
    Test(int id)
    {
        objectID=id;
    }
    void display()
    {
        cout<<"Object ID:"<<objectID<<endl;
    }
};

void setID(Test &t,int a)
{
    t.objectID=a;
}
int main()
{
    Test s1(2);
    s1.display();
    setID(s1,3);
    s1.display();
}
```

```

#include <iostream>
using namespace std;
class One{
    private:
        int a;
    public:
        One(){
            a=1;
        }
    friend class Two;
};

class Two
{
    private:
    int b;
    public:
    void display(One& one)
    {
        cout<<"Value of a: "<<one.a;
    }
};

int main()
{
    One one;
    Two t;
    t.display(one);
}

```

FRIEND CLASS

- It can access the private and protected members of a class in which it is declared as a friend.



```
#include <iostream>
#include <array>
using namespace std;
int main()
{
    array<int,5> a;
    int k=1;
    for(int i:a)
    {
        i=k++;
        cout<<i<<endl;
    }
}
```

CONTAINER CLASS

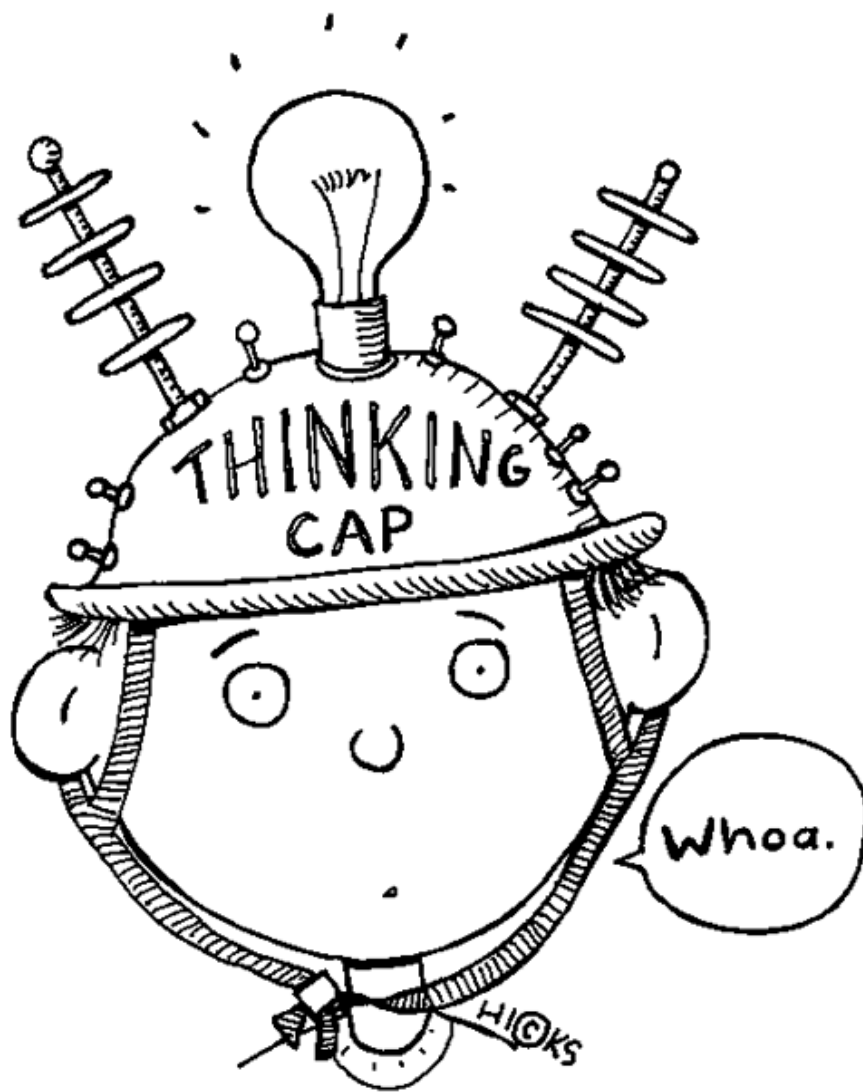
- It is used to store objects in the memory space.
- Array class is an example of the standard container classes.




```
#include<iostream>
using namespace std;
class Student
{
    private:
    int studentID;
    public:
        void setStudentID(int id)
        {
            studentID=id;
        }
        int getStudentID()
        {
            return studentID;
        }
};
int main()
{
    Student s[3];
    for(int i=0;i<3;i++)
    {
        s[i].setStudentID(101+i);
        cout<<s[i].getStudentID()<<endl;
    }
}
```

ARRAY OF OBJECTS





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QUESTIONS?

