Classes and Objects

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Class Objects

➢ Objects in C++ are analogous to real-world entities.

➢ Objects everywhere around you, like trees, birds, chairs, tables, dogs, cars, and the list can go on. There are some properties and functions associated with these objects.

➢ Similarly, C++ also includes the concept of objects.

➢ When you define a class, it contains all the information about the objects of the class type. Once it defines the class, it can create similar objects sharing that information, with the class name being the type specifier.

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Declaring Object of class

The syntax to create objects in C++:

    class_name object_name;

E.g.

student s1,s2,s3;

```cpp
classesandobject.cpp
1    #include<iostream>
2    using namespace std;
3    class student
4    {
5        private:
6            int id;
7        public:
8            void iden()
9            {
10               cout<<"Enter student id:    \n";
11               cin>>id;
12           }
13           float avg;
14           char grd;
15   };
16   int main()
17   {
18       student s1, s2, s3;
19       s1.iden();
20       s2.grd='A';
21       s3.avg=23.5;
22       cout<<s2.grd<<endl;
23       cout<<s3.avg;
24       return 0;
25
26   }
```

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Calling Member Functions


```cpp
#include <iostream>
using namespace std;
class room
{
    public:
        double length;
        double breath;
        double height;
        double calArea()
        {
            return length*breath;
        }
        double calVol()
        {
            return length*breath*height;
        }
};
int main()
{
    room r1;
    r1.length=23.5;
    r1.height=45.8;
    r1.breath=34.7;
    cout<<"Area:    "<< r1.calArea()<<endl;
        cout<<"Volume:    "<< r1.calVol()<<endl;
        return 0;
}
```

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```
E:\Programming Code of Files\classnew.exe
Area:    815.45
Volume:    37347.6

--------------------------------
Process exited after 0.1209 seconds with return value 0
Press any key to continue . . .
```

Storage of Objects in memory

The way memory is allocated to variables and functions of the class is different even though they both are from the same class.

The memory is only allocated to the variables of the class when the object is created.

The memory is not allocated to the variables when the class is declared.

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