

Object-oriented programming is programming based on the concept of objects.

Take an example,

In Code:Block, program looks like this

```
1  #include <iostream>
2  #include <string>
3  using namespace std;
4
5  class Student {          // Class name
6      public:              // Access specifier
7          int id;          // Attribute (int variable)
8          string name;     // Attribute (string variable)
9  };
10
11 int main() {
12     Student obj; // Object of class Student
13
14     // Access attributes and set values using object
15     obj.id = 30;
16     obj.name = "EasyExamNotes.com";
17
18     // Print values using object
19     cout << obj.id << "\n";
20     cout << obj.name;
21     return 0;
22 }
23
```

In above program, class Student contains the variables id and name.

```
class Student {
    public:
```

```
    int id;  
    string name;  
};
```

To access the variables `id` and `name` from the class `Student`, there is the need of an object for the class `Student`.

Syntax to create object:

```
ClassName ObjectName;
```

Objects for a class are always created in a function. Here object is created in a main function.

```
int main() {  
    Student obj;  
    return 0;  
}
```

Now with the help of object `obj`, members of class `Student` are accessible.

Syntax to access class members using objects:

```
ObjectName.ClassMemberName;
```

Using object `obj`, assign a value to variable `id` and `name`.

```
obj.id = 30;  
obj.name = "EasyExamNotes.com";
```

To print the values of variables code is,

```
cout << obj.id << "\n";  
cout << obj.name;
```

C++ program to implement use of object

```
#include <iostream>  
#include <string>  
using namespace std;  
  
class Student {  
    public:  
        int id;  
        string name;  
};  
  
int main() {  
    Student obj;  
  
    obj.id = 30;  
    obj.name = "EasyExamNotes.com";
```

```
cout << obj.id << "\n";  
cout << obj.name;  
return 0;  
}
```

Output

```
C:\MinGW\one.exe  
30  
EasyExamNotes.com  
Process returned 0 (0x0) execution time : 0.662  
Press any key to continue.
```

Now it will be easy to write some theory points on object oriented programming.

- Object oriented programming involve use of object.
- Object is like a key for any class.
- Class members are accessible, only in the function where object is created.
- A class can have more than one object.
- Without class there is no existence of object.

What is class in OOP ?

- A class is like a blueprint for an object.
- Class is like a container, to store data and functions.
- Class is a user defined data type.

- When a class is defined no memory allocated without object.
- In above program, Student is like a variable whose data type is Class.

We will read more about class in the next article.

What is an Object of a class ?

- An Object is an instance of a Class.
- Object makes class members accessible.
- Objects are runtime entities.
- When object is created, memory is allocated to the class.

Some other examples of OOP ?

C++, Python, Java, C Sharp dot net, etc.

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