

LECTURE-2

OBJECT ORIENTED PROGRAMMING C++

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CLASS

- A Class is a blueprint of an object. It consists of member variables and member functions.
- A Class is a user defined data-type which has data members and member functions.
- Syntax of class:

```
class name of the class
{
    member variables;
    member functions;
};
```

MEMBER VARIABLES AND MEMBER FUNCTIONS

- Member variables: Member variables are variables that are declared in a class.
- Member functions: Member functions are functions that are declared in a class.
- Example: class CAT{

```
                     char a;  
                     void eat() { cout<<“Love food”; }  
                     };
```

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Example of a class:

```
class Test {  
    int height;  
    double weight;  
    void function1() { height = 5; }  
    float function2() { weight = 50; }  
};
```

OBJECT

- It is the basic unit of OOP. Data and methods are bundled into an object. It is also called the instance of a class.
- An object is created from a class.
- 2 ways to create object from a class.

2 WAYS TO CREATE OBJECT

- In the main function we can create object using the following syntax.

```
class CAT{  
    public:  
        char a;  
        void eat() { cout<<“Love food”; }  
};  
  
void main() {  
    CAT obj; //creating object obj from class CAT in the main function.  
    obj.eat();  
}
```

2 WAYS TO CREATE OBJECT

- we can create object from a class using the following syntax.

```
class CAT{  
    public:  
        char a;  
        void eat() { cout<<“Love food”; }  
    } obj; //creating object obj from class CAT in the main function.  
  
void main() {  
    obj.eat();  
}
```

ACCESS SPECIFIER/ACCESS MODIFIERS

- **Access specifiers** are the keywords in object-oriented languages that set the accessibility of methods and data members.
- **C++ access specifiers** are used for determining or setting the boundary for the availability of class members (data members and member functions) beyond that class
- It is also called **access modifiers**.

TYPES OF ACCESS SPECIFIERS

- There are 3 types of access specifiers:
 - **Public:** Data members or Member functions can be accessible from anywhere of the program (within the same class or outside of the class)
 - **Protected:** Data members or Member functions can be accessible within the same class as well as from the derived class.
 - **Private:** Data members or Member functions can be accessible within the same class as well as from the friend class or friend function.

EXAMPLE I

class name of the class {

access specifier:

member variables;

access specifier:

member functions;

};

EXAMPLE 2

```
class Test {  
    private:  
        int height;  
        double weight;  
    public:  
        void function1() { height = 5; }  
        float function2() { weight = 50; }  
};
```

EXAMPLE 3

- By default all the members in a class is private member.

```
class Test {  
    int height;  
    double weight;  
    void function1() { height = 5; }  
    float function2() { weight = 50; }  
};
```

QUESTION & ANSWER

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NEXT LECTURE

- Before Lecture 3 you will revise LOOPS, CONDITIONAL STATEMENTS, BREAK, LABEL
- Revision of Lecture 2
- New topic: C++ input/output syntax and some examples.