A public member can be accessed from outside the class anywhere within the scope of the class object. You can also specify the members of a class as private or protected which we will discuss. A default constructor does not have any parameter, but if you need, a constructor can have parameters. This helps you to assign initial value to an object at the time of its creation

If a function is inline, the compiler places a copy of the code of that function at each point where the function is called at compile time. To inline a function, place the keyword inline before the function name and define the function before any calls are made to the function. The compiler can ignore the inline qualifier in case defined function is more than a line. A function definition in a class definition is an inline function definition, even without the use of the inline specifier.

C++ allows you to specify more than one definition for an operator in the same scope, which is called operator overloading . Overloaded operators are functions with special names: the keyword "operator" followed by the symbol for the operator being defined. Like any other function, an overloaded operator has a return type and a parameter list. Box operator(const Box&).

By declaring a function member as static, you make it independent of any particular object of the class. A static member function can be called even if no objects of the class exist and the static functions are accessed using only the class name and the scope resolution . A static member function can only access static data member, other static member functions and any other functions from outside the class.

When creating a class, instead of writing completely new data members and member functions, the programmer can designate that the new class should inherit the members of an existing class. This existing class is called the base class, and the new class is referred to as the derived class. Refer to events that occurs at compile time.

We can see that there are relationships between classes when we draw CRC cards. We can divide all relationships into five categories. Otherwise Known as Generalization. Inheritance represents a “is-a-kind-of“ relationship. Inheritance is a relationship between a general thing (superclass/parent) and a more specific kind of a thing (subclass/child).

A "whole/part“relationship refers to a fairly strong connection between two classes. One class represents a larger thing("whole"), which consists of smaller things ("parts"). This means “part of” relationship. Meaning that an object of the whole has objects of the part. Two types; • Aggregation (Relatively Weak) • Composition (Relatively Strong). Composition is a strong form of whole-part relationship .Graphically, a dependency is rendered as a filled diamond arrow. . Composition should have a relationship with a multiplicity of “1 .. “.Aggregation is just a special kind of association Aggregation is a weak form of whole-part relationship .Graphically, a dependency is rendered as an empty diamond arrow. The same rule for multiplicity can be applied for aggregation relationship. . In some situations Aggregation can also have a multiplicity of “0..”.

Dependency is a weaker form of relationship which indicates that one class depends on another because it uses it at some point in time. •It implies that a change to one class may affect the other but not vice versa. Graphically, a dependency is rendered as a dashed directed line, directed to the thing being depended on. The association can also be promoted to a class • This places the responsibility for maintaining information pertaining to the association with the Ownership class.