Encapsulation - mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit. In encapsulation, the variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class.

Abstraction - abstraction is a process of hiding the implementation details from the user, only the functionality will be provided to the user. In other words, the user will have the information on what the object does instead of how it does it.

Polymorphism - the ability of an object to take on many forms. The most common use of polymorphism in OOP occurs when a parent class reference is used to refer to a child class object. Any Java object that can pass more than one IS-A test is considered to be polymorphic.

Information hiding - mechanism for restricting access to some of the object's components. Encapsulation is a common technique to implement information hiding.

Top down design - In Top-Down programming, an application is constructed starting with a high-level description of what it is supposed to do, and breaking the specification down into simpler and simpler pieces.

Bottom up design - In Bottom-Up programming, you think of the basic functionality and the parts you're going to need and build them up. You develop the classes and their methods, and then you tie them together to make a coherent whole.

Interface - An interface is a reference type in Java. It is a collection of unimplemented methods. A class implements an interface, thereby inheriting the methods of the interface.

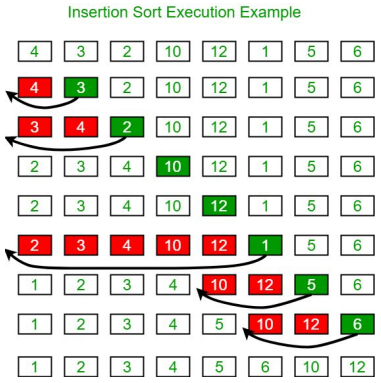
Inheritance - It is the mechanism in java by which one class is allow to inherit the features (fields and methods) of another class. The subclass can add its own fields and methods in addition to the superclass fields and methods.

Overriding methods - The ability of a subclass to override a method allows a class to inherit from a superclass whose behavior is "close enough" and then to modify behavior as needed. The overriding method has the same name, number and type of parameters, and return type as the method that it overrides.

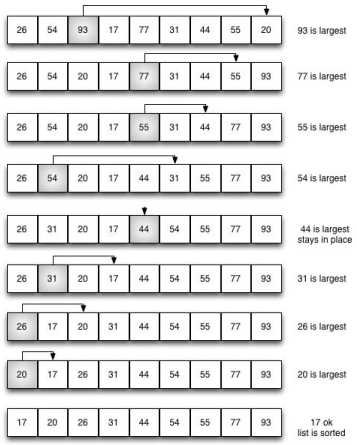
Overloading methods - a feature that allows a class to have more than one method having the same name, if their parameter lists are different.

Recursion - basic programming technique you can use in Java, in which a method calls itself to solve some problem.

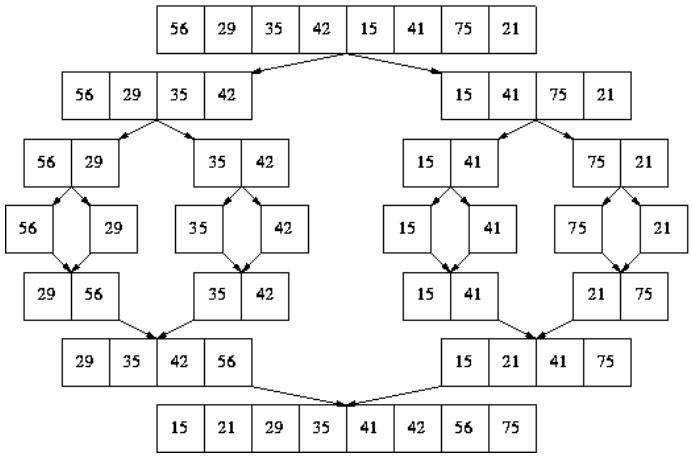
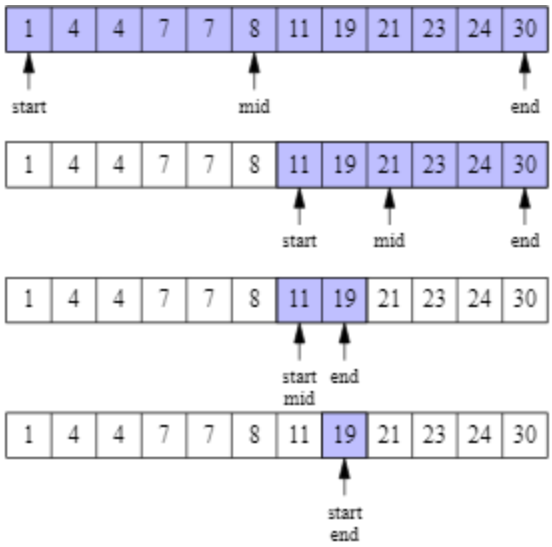
Insertion sort -




Selection sort -




Merge sort -



Binary search -