Java

Module 1

1) Explain the features of Java
    - Java is very easy to learn, and its syntax is simple, clean and easy to understand.
    - Java language is a simple programming language because:
    Java syntax is based on C++ (so easier for programmers to learn it after C++). Java has removed many complicated and rarely-used features, for example, explicit pointers, operator overloading, etc.
    There is no need to remove unreferenced objects because there is an Automatic Garbage Collection in Java.
    - Java is an object-oriented programming language. Everything in Java is an object. Object-oriented means we organize our software as a combination of different types of objects that incorporates both data and behavior.
    - Java is platform independent. Java is a write once, run anywhere language.
    - Java is best known for its security. With Java, we can develop virus-free systems.
    - Java is robust
    - Java is portable because it facilitates you to carry the Java bytecode to any platform. It doesn't require any implementation.
    - Java is Distributed because Enables multiple programmers at multiple locations work together on a single project

2) Explain Constructor?
    - In Java, a constructor is a block of codes similar to the method. It is called when an instance of the class is created. At the time of calling constructor, memory for the object is allocated in the memory. .
    - It is a special type of method which is used to initialize the object.
    - Every time an object is created using the new() keyword, at least one constructor is called.
    - There are two types of constructors in Java:
        Default constructor
        parameterized constructor.

3) Explain This Keyword?

- There can be a lot of usage of java this keyword. In java, this is a reference variable that refers to the current object.
- Usage of java this keyword
  - this can be used to refer current class instance variable.
  - this can be used to invoke current class method (implicitly)
  - this() can be used to invoke current class constructor.
  - this can be passed as an argument in the method call.
  - this can be passed as argument in the constructor call.
  - this can be used to return the current class instance from the method.

3) Explain how to create object class and method in Java?
- An entity that has state and behavior is known as an object.
- It can be physical or logical. (tangible and intangible). The example of an intangible object is the banking system
- An object has three characteristics:
  - State
  - Behavior
  - Identity
- An object is an instance of a class

Class

A class is a group of objects which have common properties. It is a template or blueprint from which objects are created. It is a logical entity. It can't be physical.

A class in java can contain:

- Fields
- Methods
- Constructors
- Blocks
- Nested class and interface

Method

In Java, a method is like a function which is used to expose the behavior of an object.

Advantage of Method

- Code Reusability
- Code Optimization