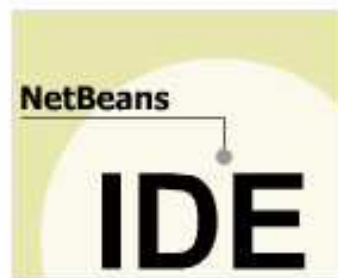# Module 1 - 2

Introduction to Java
Variables and Operators

Introduction to Java

- Classes and Objects

- Getting started with
Java

- Introduction to JDK

- Writing a Java program

- NetBeans IDE Overwiew

- Using comment in Java

Class and Object

- Describe real-world entities as objects

- Describe a software object

- Describe and explain the structure of a class
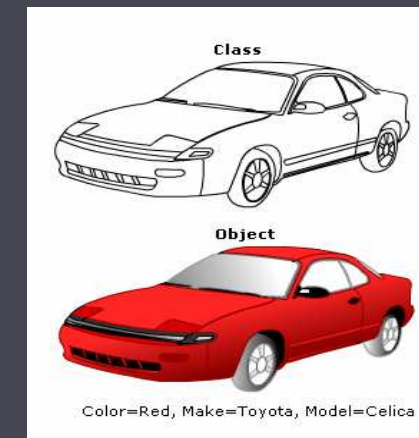
- Compare classes and objects

Class & Objects

- Object is the presentation of real world entities.
- The two most important elements of object in real world are characteristics and actions

Object (Real world)	Software Object
Characteristics (properties)	State – Attributes – Variables - Fields
Actions	Behavior – Method - Functions

- Class is a template defines the outline of state and behavior for all object belonging to that class
- All instances of the class, called objects, will have common state and behavior

Class && Object: Compare

Class	Object
Class is a conceptual model	Object is a real thing
Class describes an entity	Object is the actual entity
Class consists of fields (data members) and functions	Object is an instance of a class

Class

Object
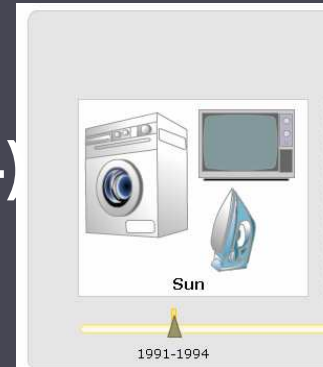
Color=Red, Make=Toyota, Model=Celica

Getting started with Java

- Identify the evoluation stages of Java

- State the components of the Java platform

- List the features of Java as programming

language

The evoluation stages of Java
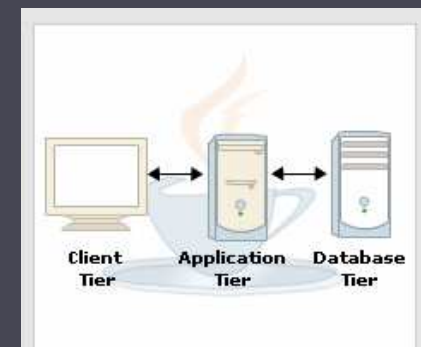
- **Embedded Systems (1991 – 1994)**

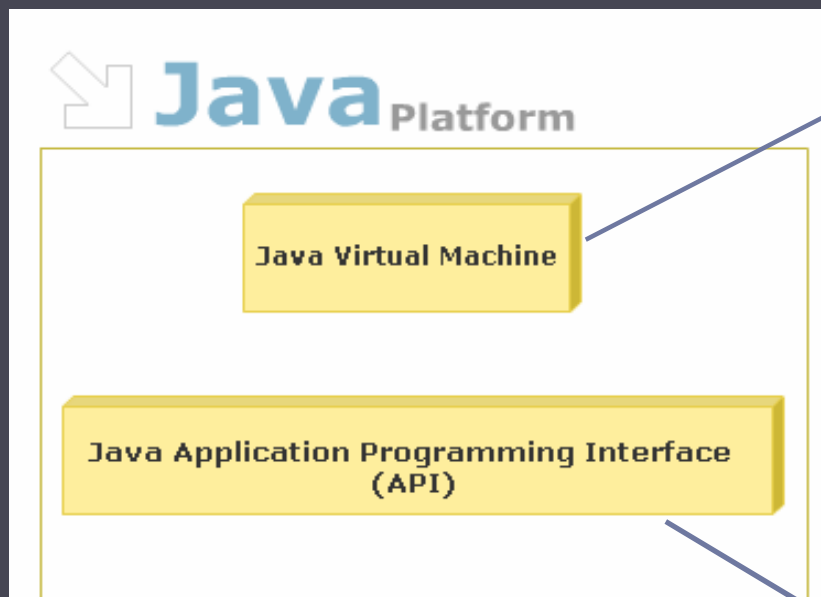- **A client – side Wonder (1995 – 1997)**

- **Moved into the Middle – tier (1997 – to present)**

- **Future: may gian more success**

Java platform

Java Virtual Machine

Java Application Programming Interface (API)

The Java Virtual Machine (JVM)

The Java Virtual Machine (JVM) is the Java runtime environment and is available on different operating systems. It serves as the intermediary between a Java program and a host computer. JVM executes compiled Java programs (byte codes). It forms a layer of abstraction for:

- Underlying hardware platform
- Operating system
- Compiled code

Different versions of JVMs are available for different operating systems.

The Java Application Programming Interface (API)

Java APIs contain vast libraries of classes and other software components such as interfaces. These are included as a part of the Java SDK. Newer releases of Java APIs provide enhanced features with introduction of new class libraries and packages.

Java – Programming language

- **Object – oriented**: The elements are present can only be accessed through classes and objects.

- **Platform – independent**: The ability of a program to run on any machine regardless of underlying platform

- **Robust:** Java requires all data to be declared explicity

- **Secure:** Provides a secure environtment and several layers of security controls

- **Distributed:** To develop application portable across multiply platform.

- **Multi-threaded**: Java provides for multi-threading to perform many task simultaneously

Introduction JDK

- Explain JDK and its tools
  - javac (Java compiler)
  - java (Java intepreter)
- Configure JDK
  - Path
  - Classpath
- Writing a java simple program
  - Writing
  - Compile and execute