Types of Applications:

1) Console Based Applications ⇨ Core Java + SQL + Embedded System

2) Desktop / Standalone Applications ⇨ Core Java + SQL + AWT, Applets & Swings

GUI Applications

3) Web-Based Applications ⇨ Core Java + ADV Java + Frameworks + SQL + UI + Dev-Ops

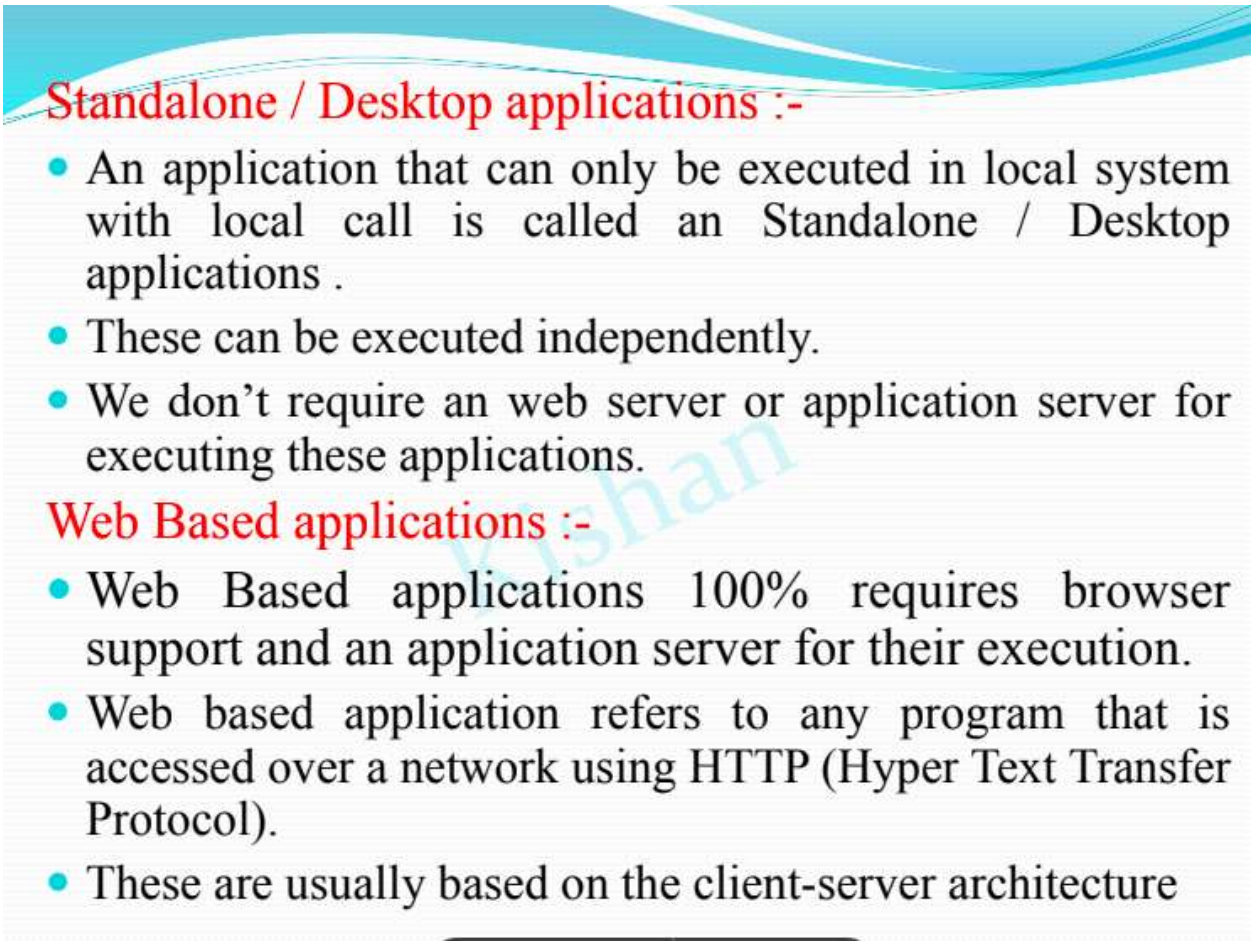
JDBC Servlets JSP | Spring | Oracle | Html Css JavaScript

Types of Applications

- Generally all the Projects or Applications are divided in to '3' types.
  1. Console Based applications
  2. Standalone / Desktop applications
  3. Web Based applications

Console Based Applications :-

- A console based application is a computer program designed to be used with the help of command line interface of some operating systems.
- A user typically interacts with a console application using only a keyboard and display screen, as opposed to GUI applications, which normally require the use of a mouse or other pointing device.
- As the speed and ease-of-use of GUIs applications have improved over time, the use of console applications has greatly diminished, but not disappeared.



1.console-based applications

These are outdated applications at present

Example: Bus ticket machine, electricity bill machine

These applications do not have pointing devices

2.Desktop/standalone application

In this we will have to create a frame

Frame is rectangular structure which occupies some of the user's screen space

In this we need to create some buttons and buttons will be having some auctions

These are limited or confined to only one machine

Core Java + SQL + AWT (Abstract Window Toolkit), Applets &Swings

AWS, Applets & Swings

These are used to create GUI applications

These are replaced by UI technologies like HTML, CSS, Java script, node js, react, angular, bootstrap

These are also outdated applications

3.Web-Based applications

Core Java + Advanced Java + frameworks + SQL + UI + Devops

Advanced Java

JDBC

Servlets

JSP

JDBC (Java Data Base Connectivity)

How to connect our java program to database

To store the data permanently

Servlets

How to handle request response scenarios

In web-based applications the output will be visible on a browser, when you are speaking about a browser, we need to follow some protocols like HTTP (Hyper Text Transfer Protocol)

So, directly from Java program if you are connecting to the browser, it will not accept there should be a medium there should be an interface that is a server

From Java programming how to connect the server that will be taken care by servlet

JSP (Java server page)

It is used to create dynamic web pages

Inside JSP we should write HTML CSS and JavaScript

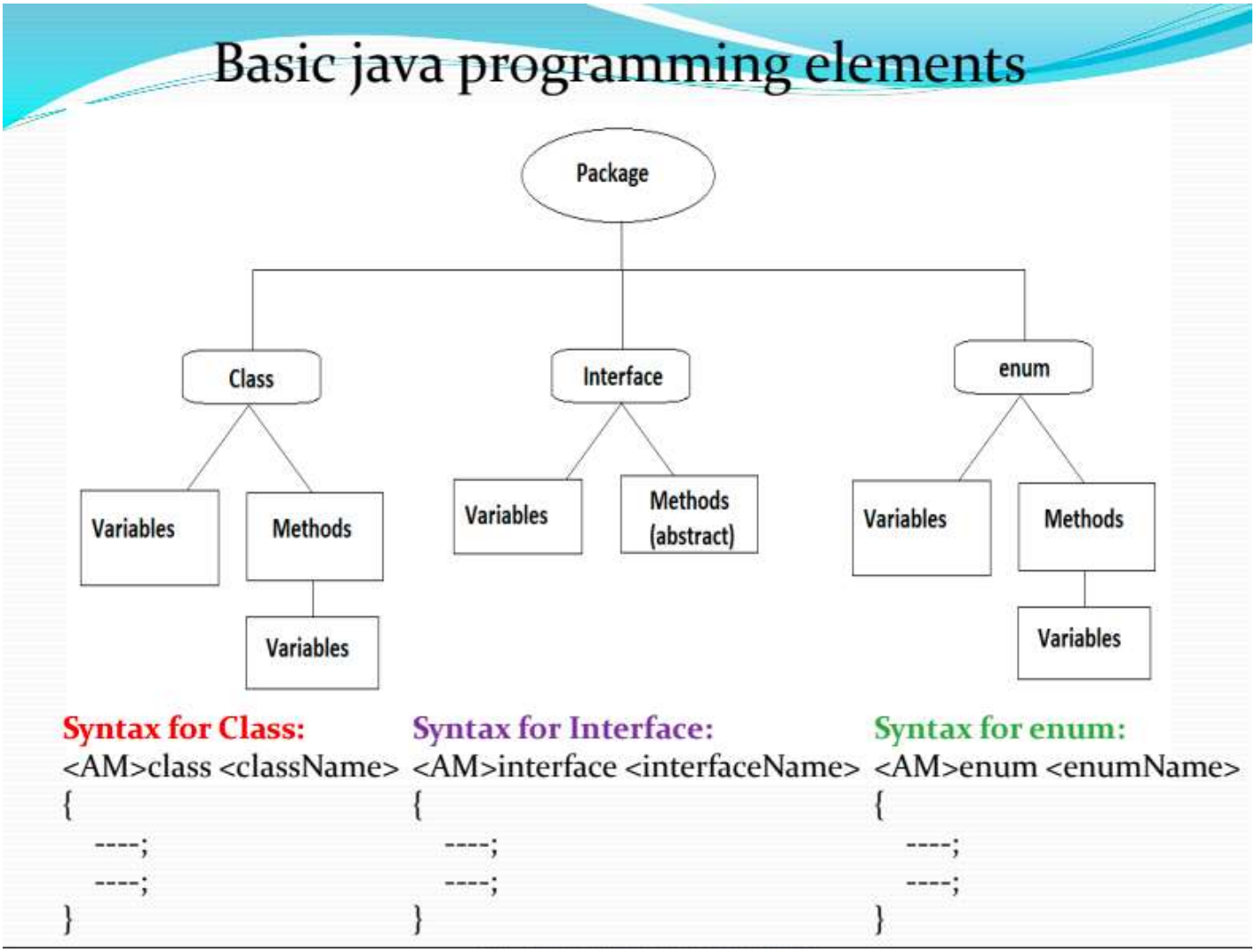
Framework

Before 10 to 15 years there are mainly 2 frameworks there are instruct and hibernate

This will reduce the work of the developers. The instruct and hibernate are replaced by spring.

Editions of Java

- **Java Standard Edition (Java SE)** CONTAINS LIBRARIES & PACKAGES
  - Also known as J2SE or Java 2 Standard Edition
  - Referred to as the ***CORE*** *Java software*
  - Used in building applets or desktop applications
- **Java Enterprise Edition (Java EE)** CREATING WEB APPLICATION
  - Also known as J2EE or Java 2 Enterprise Edition
  - Used in building server-side applications
- **Java Micro Edition (Java ME)** CREATING MOBILE AND SMALL DEVICES APPLICATION
  - Also known as Java 2 Micro Edition
  - Used in building applications for wireless devices such as mobile phones and PDAs.



Abstract method

Every method present inside an interface is by default Abstract method

It has no body method

Syntax for Abstract method

<AM>abstract<return type><method name>();

Here abstract is key word

Understanding JVM:

Q) What happens internally whenever we are compiling and running a Java program?

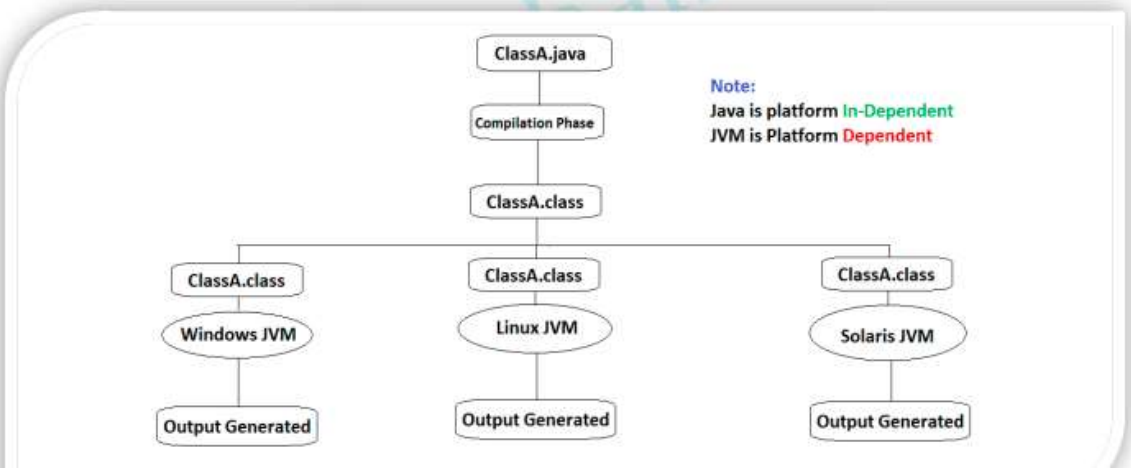
A) When ever we are compiling our java program with the help of the command **javac FileName.java**, Java compiler is going to compile our java program. After successfull compilation it is going to generate a .class file. The generated .class file consists of byte code instructions which cant be understandable by the humans. Those byte code instructions can be understandable only by the Machines. In our scenerio that machine is JVM. Inorder to run our java program we need to provide the generated .class file as an input to the JVM with the help of the command **java Generated.classFileName** JVM is going to check whether all the byte code instructions present in that .class file are correct or wrong, if correct we will be getting the output. If wrong we will be getting an **exception**

Understanding JVM

What is JVM in Java ?
Different components of JVM ?
Difference between JVM, JRE, and JDK?

INTRO:

- Java Virtual Machine (JVM) is an virtual machine that resides on your computer and provides a runtime execution environment for the Java bytecode to get executed.
- The basic function of JVM is to execute the compiled .class files (i.e. the bytecode) and generate an output.
- JVM is PLATFORM DEPENDENT where as JAVA is PLATFORM IN-DEPENDENT



Internal architecture of JVM