

Java Applications

Agenda

- Introduction to JAVA
- Java Application: Desktop Tools
- Java Application: Mobile Application
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- Java Application: embedded systems
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- Java Application: Develop Artificial Intelligence
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- Java Application: Work with Big data
- Java Application: Web servers & Application Servers
- Java Application: IDEs
- Java Application: Science and Mathematics
- Java Application: Aeronautics

Introduction to java

Introduction to Java

What is Java ?

- As a tool
- As a platform

Wide range of Java based Applications

- JMARS
- Wikipedia Search
- Minecraft
- SmartThings

Java Application: Desktop Tools

Java Application: Desktop tools

Desktop tools

- The applications/Softwares/Tools that run on a desktop/Laptop and is accessible to only a single user

Feature of Java supporting Desktop Application development

- Platform independent
- Robust

Java Application: Desktop tools

Packages/APIs provided by Java for developing Desktop Applications

- AWT
- Swing
- JavaFX



Example

- Acrobat Reader
- Antiviruses
- Media player

Java Application: Mobile Applications

Java Application: Mobile Application

Mobile Applications

- The Applications that can be installed and used on a mobile devices or tablets or any smartphones

Feature of Java supporting Mobile Application development

- Portability
- Secure

Java Application: Mobile Application

Packages/APIs provided by Java for developing Mobile Applications

- Android
- DVM (Dalvik virtual Machine)
- J2ME

Example

- Calendar
- Netflix
- Uber



Java Application: Enterprise level solutions

Java Application: Enterprise level Solution

Enterprise Applications

- The large scale and multi-tiered applications installed and used on a enterprise wide platform. These Applications are combination of various smaller apps.

Feature of Java supporting Development of Enterprise level solutions

- Scalable
- Secure
- Powerful

Java Application: Enterprise level Solution

Packages/APIs provided by Java for developing Enterprise level solutions

- Java EE

Example

- Myntra
- Naukri
- Trip Advisor



Java Application: Shared Applications

Java Application: Shared Applications

Shared Applications or Distributed application

- Applications that run on multiple different Computers connected via network

Feature of Java supporting developing shared Applications

- Distributed
- Extendable
- Dynamic

Java Application: Shared Applications

Packages/APIs provided by Java for developing Distributed Applications

- RMI
- CORBA
- JINI



Examples

- Web Browsers
- Aircraft traffic control system

Java Application: Dive into the world of clouds

Java Application: Dive into world of Cloud

Cloud based system

- Cloud computing is on demand delivery of services like storage, database, servers, softwares etc. through any network.

Feature of Java that helps creating cloud based Applications

- Distributed
- WORA (write once run anywhere)

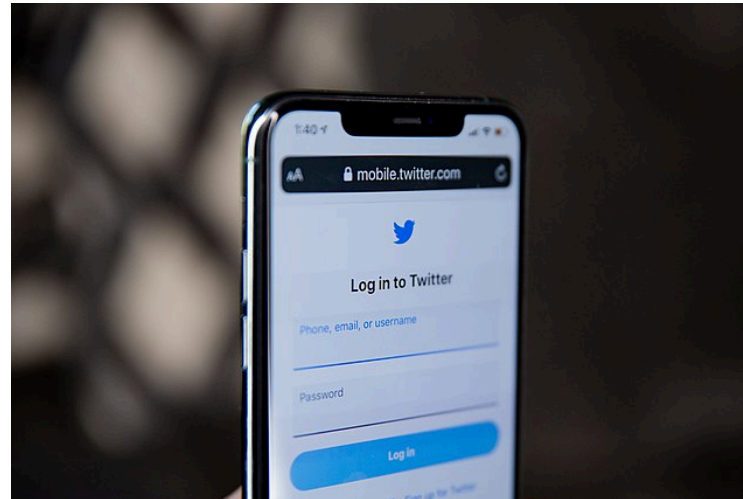
Java Application: Dive into world of Cloud

Packages/APIs provided by Java for developing Cloud Applications

- Oracle Java cloud service

Examples

- Netflix
- Amazon
- Twitter



Java Application: Embedded systems

Java Application: Embedded systems

Embedded systems

- Also called as integrated systems, are the collections of various smaller systems integrated to a large scale systems

Feature of Java that supports Embedded system development

- Fast
- Robustness

Java Application: Embedded systems

Packages/APIs provided by Java for creating embedded systems

- Java SE embedded
- Java ME embedded
- Oracle APIs

Examples

- Blue-Ray Disc
- SIM cards



Java Application: 2D and 3D games

Java Application: 2D and 3D Games

Feature of Java that supports Games development

- Versatile

Packages/APIs provided by Java for creating 2D & 3D Games

- libGDX
- JMonkeyEngine

Examples

- Mission impossible III
- Asphalt 6
- Minecraft



Java Application: Develop Artificial Intelligence

Java Application: Develop Artificial Intelligence

Artificial intelligence & Machine learning

- Incorporating human intelligence into machines and making the machine learn a behavior, then perform accordingly

Feature of Java that helps developing AI & ML related software

- stability
- Speed
- Cross platform

Java Application: Develop Artificial Intelligence

Packages/APIs for developing artificial intelligence using java

- Deep learning for java (DL4J)
- Apache spark's MLib

Examples

- AI based chatbot (EVA by HDFC)
- Self driving cars
- Online fraud detection



Java Application: High performance websites

Java Application: High performance websites

Web based applications

- The applications that run on client machine with the help of browsers and also on server to respond back with services to client using internet

Feature of Java that helps creating reliable websites

- Easy coding
- High security

Java Application: High performance websites

Packages/APIs for creating high performance web Apps

- Servlets/struts/JSP
- Spring/ Hibernate

Examples

- Irctc.co.in
- Amazon
- Aliexpress



Java Application: Work with Big Data

Java Application: Work with Big data

Big data

- Chunks of larger data set, analyzed and researched for further findings

Feature of Java that helps working with Big Data easy

- Fast
- Reliable
- Garbage collection
- Memory distribution

Java Application: Work with Big data

Packages/APIs of Java that is helping working with Big Data

- Apache Kafka
- Apache Hadoop
- Elasticsearch

Examples

- ETL Applications
- Wikipedia
- Parallel Graph Analytics



Java Application: Web servers & Application servers

Java Application: Web servers & Application server

Servers

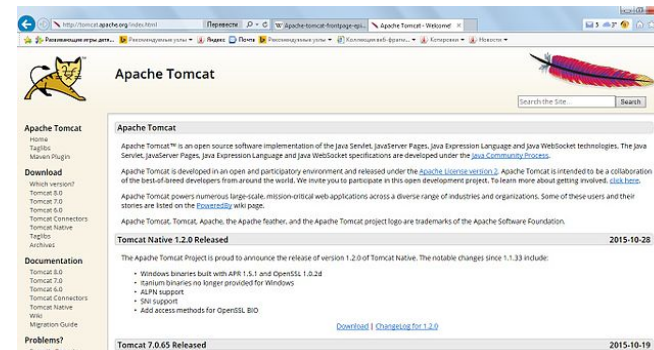
- A platform that provides services as a response to the request sent by client using web browsers

Difference between Web servers & Application servers

- Application server provides access to business logic of any application whereas web servers is just about displaying http pages to client

Example

- Apache Tomcat
- Glassfish



Java Application: IDEs

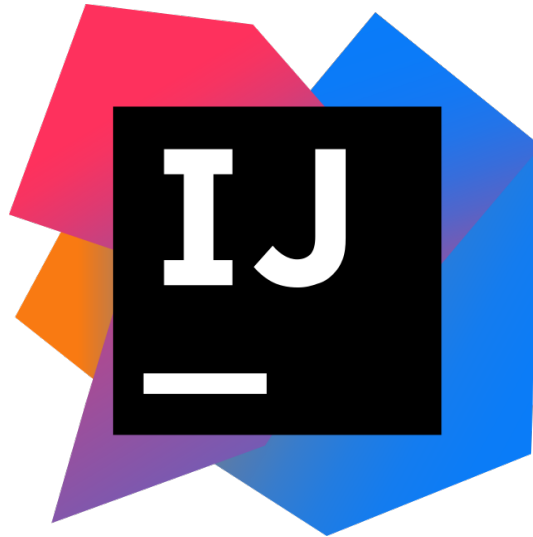
Java Application: IDEs

IDEs

- An integrated environment which helps to develop, analyze and debug any programming language codes. It provides help in terms of support of already developed code snippets.

Examples

- Eclipse
- Byte Buddy
- IntelliJ
- Jenkins



Java Application: Science & Mathematics

Java Application: Science and Mathematics

Feature of Java that helps in the field of Science & Mathematics

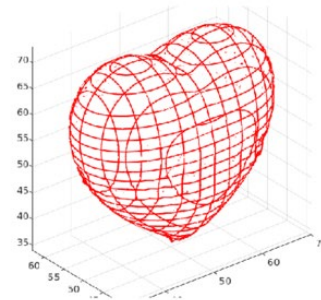
- Fast and Secure
- Highly Portable

Packages/APIs of Java that supports these fields

- Struts, JSP and Servlets

Examples

- MATLAB



MATLAB

Java Application: Aeronautics

Java Application: Aeronautics

Feature of Java that helps in the area of aeronautics

- Secure and Reliable

Packages/APIs of Java that supports working in aeronautics

- WorldWind SDK
- JMars

Examples

- Maestro Mars Rover Controller
- JavaFX deep space trajectory explorer



Summary

Application of Java Ranges from a small tool to a large scale application.

The areas of java applications are

- Desktop applications
- Mobile based Apps
- Enterprise Apps
- Scientific and Highly mathematical Apps
- Cloud based services
- Big data related support
- AI and ML related development
- Websites
- Distributed systems
- Embedded systems
- Servers and IDEs