

Java Platform



Java SE
Features



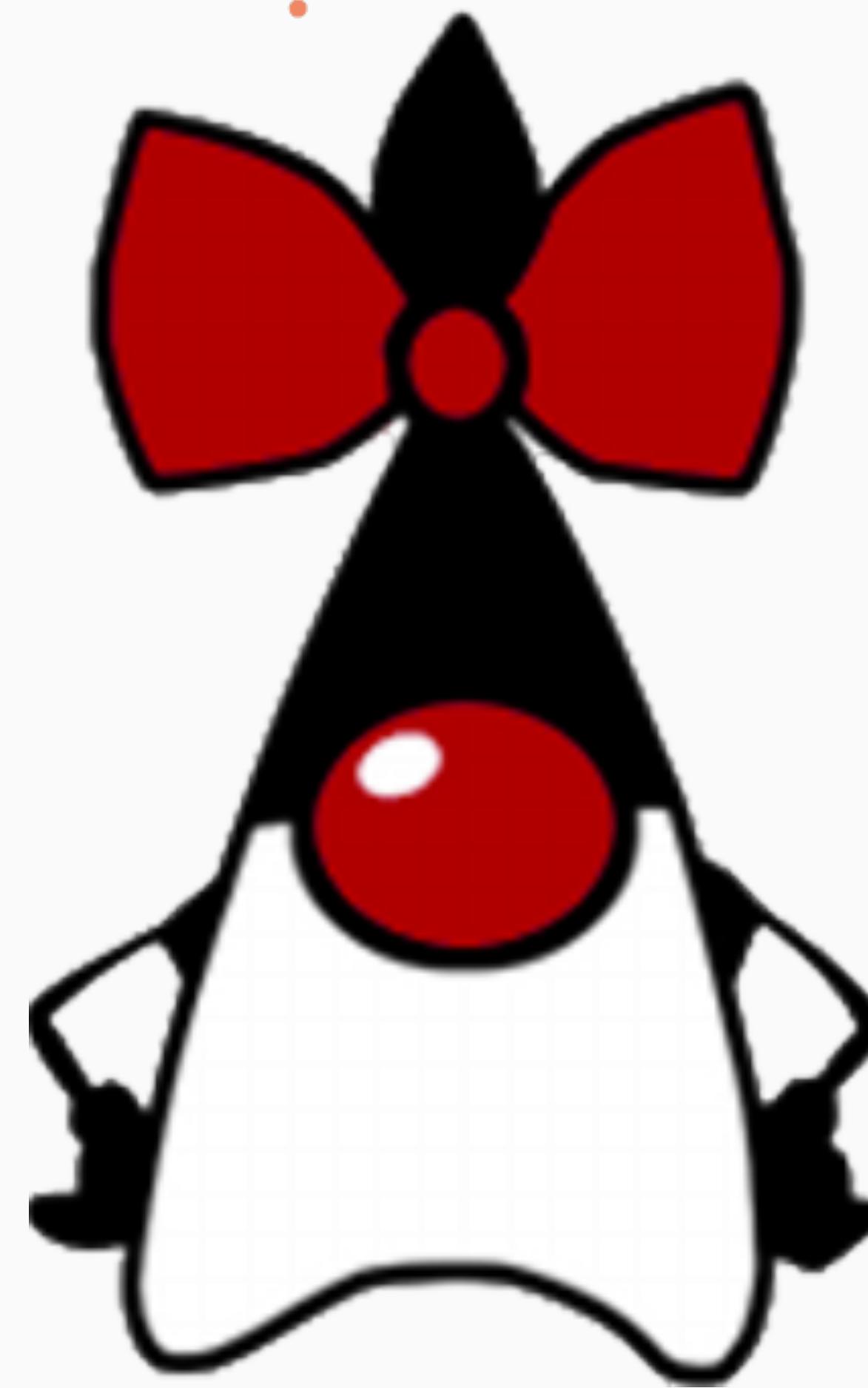
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J Duchess
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⟨Devs⟩
+502

Comunidad Desarrolladores en Tecnologías
<Google> en Guatemala



Historia de Java

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The Green Team

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The Green Team

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Stealth Project → Oak → Green

- Patrick Naughton, Mike Sheridan and James Gosling (leader)
- Diciembre 1990
- Nueva generación Electrodomésticos Inteligentes
- Empezaron usando C++
- Gosling propuso modificar y extender C++

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Personal Digital Assistant Star7

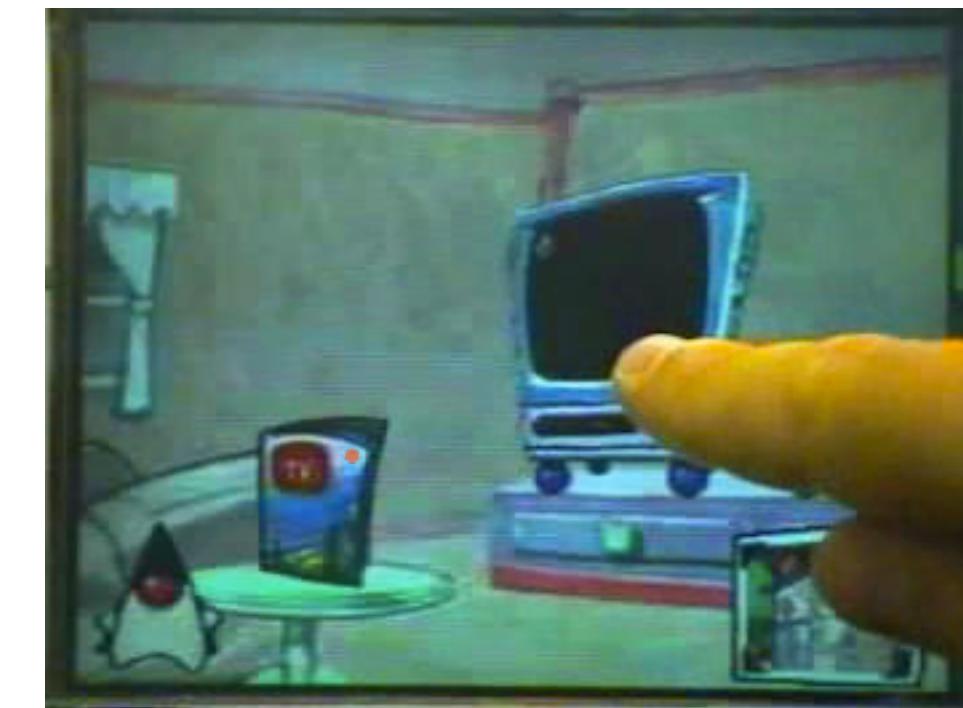


Green OS
Oak language

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Septiembre 1992



• Cómo nació Java?

- A mediados de 1994
- Green Team & John Gage (Director of the Science Office of the Sun Microsystems)
- 3 días de lluvia de ideas
- Redirigieron el proyecto al WWW (World Wide Web)
- Tomaron ventaja de los web browser gráficos como Mosaic

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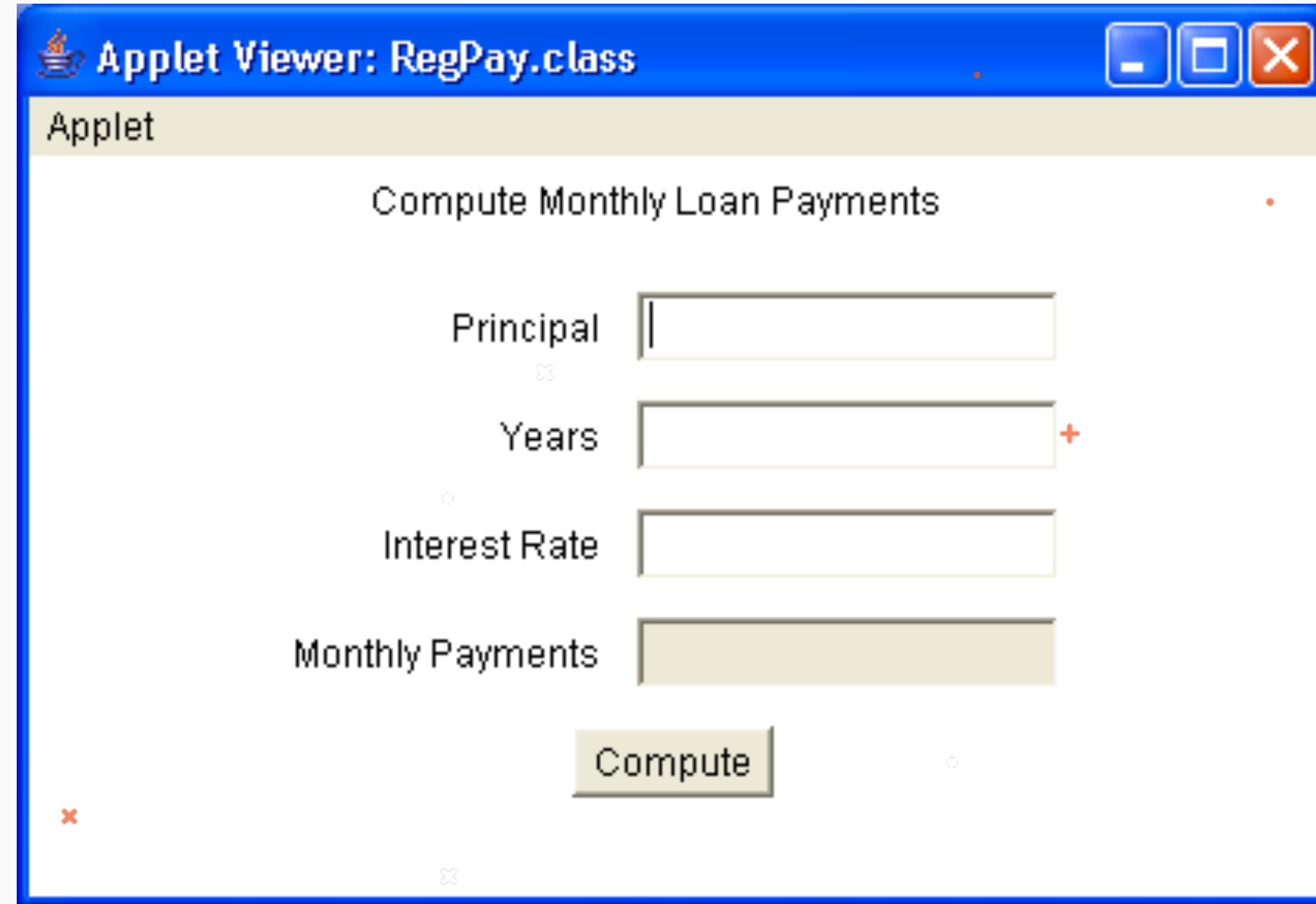
Sun Lanza Java en 1995



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Applets



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2010 Oracle Compra Sun



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Sigue Arriba en el Ranking

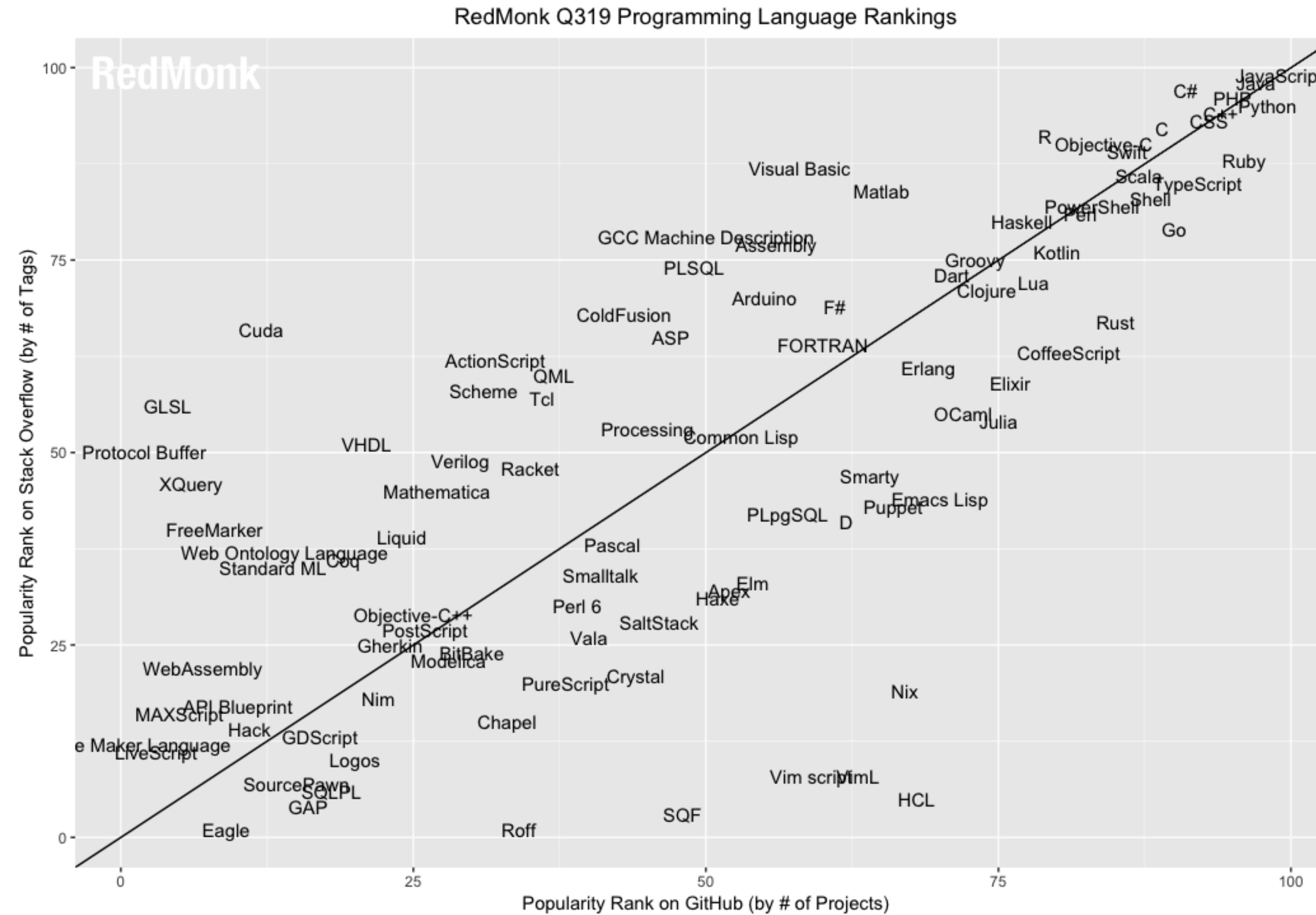
Tiobe Octubre 2019

Oct 2019	Oct 2018	Change	Programming Language	Ratings	Change
1	1		Java	16.884%	-0.92%
2	2		C	16.180%	+0.80%
3	4	▲	Python	9.089%	+1.93%
4	3	▼	C++	6.229%	-1.36%
5	6	▲	C#	3.860%	+0.37%
6	5	▼	Visual Basic .NET	3.745%	-2.14%
7	8	▲	JavaScript	2.076%	-0.20%
8	9	▲	SQL	1.935%	-0.10%
9	7	▼	PHP	1.909%	-0.89%
10	15	▲	Objective-C	1.501%	+0.30%
11	28	▲	Groovy	1.394%	+0.96%
12	10	▼	Swift	1.362%	-0.14%
13	18	▲	Ruby	1.318%	+0.21%
14	13	▼	Assembly language	1.307%	+0.06%
15	14	▼	R	1.261%	+0.05%
16	20	▲	Visual Basic	1.234%	+0.58%
17	12	▼	Go	1.100%	-0.15%

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Sigue Arriba en el Ranking⁺



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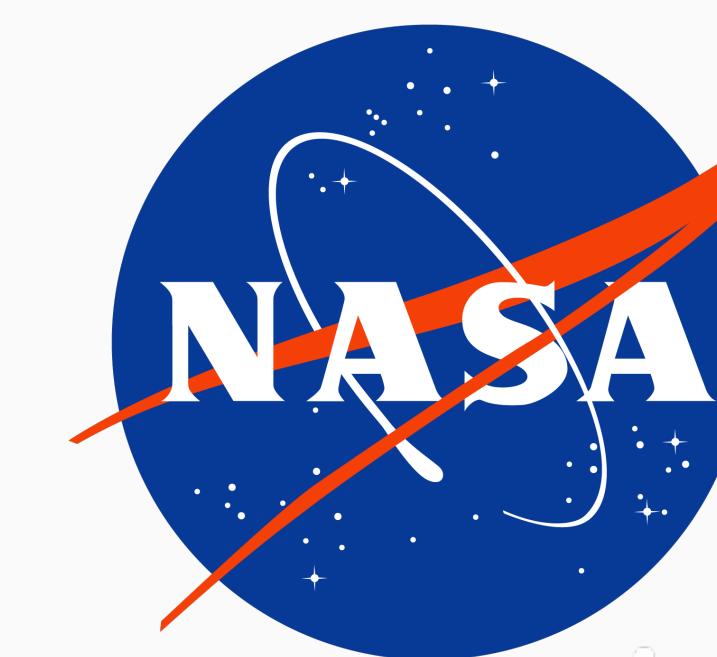
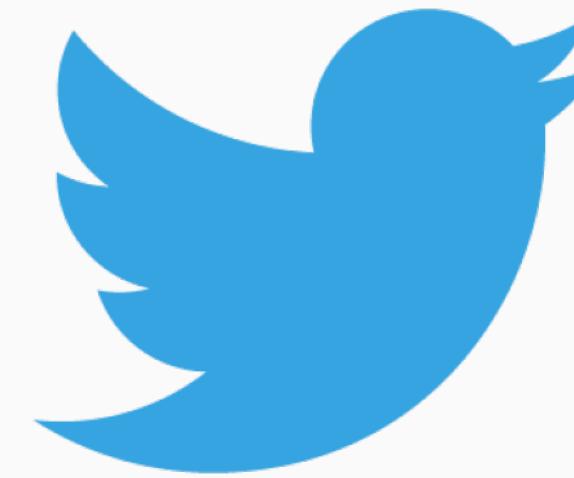


Mas Poderosos Lenguajes

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Beneficios de Java

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Orientado a Objetos

- Object (Entidad que tiene características y un comportamiento)
- Simulación de un problema real
- Encapsulación
- Herencia
- Polimorfismo

Abstracción / Encapsulación

- Es una estrategia.
- Ocultar los detalles de la implementación.
- Protección de datos (Modificadores de acceso)
- Abstracción, código flexible y reutilizable.

Independiente de la Platform

- WORA (Write Once Run Everywhere)
- Compilamos utilizando *javac*
- Ejecutamos en una *Máquina Virtual*
- Lenguaje Intermedio (es compilado e interpretado)

Simple

- En los 90's lo popular era C o C++
- No utiliza punteros
- Garbage Collection

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Robusto

- Garbage Collection (GC)
- Stack Memory (referencia a objetos, primitive types), único que accede el código.
- Heap Memory (objetos), accede el GC.

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Seguro

- Sandbox (JVM), ningún componente externo accede al código.

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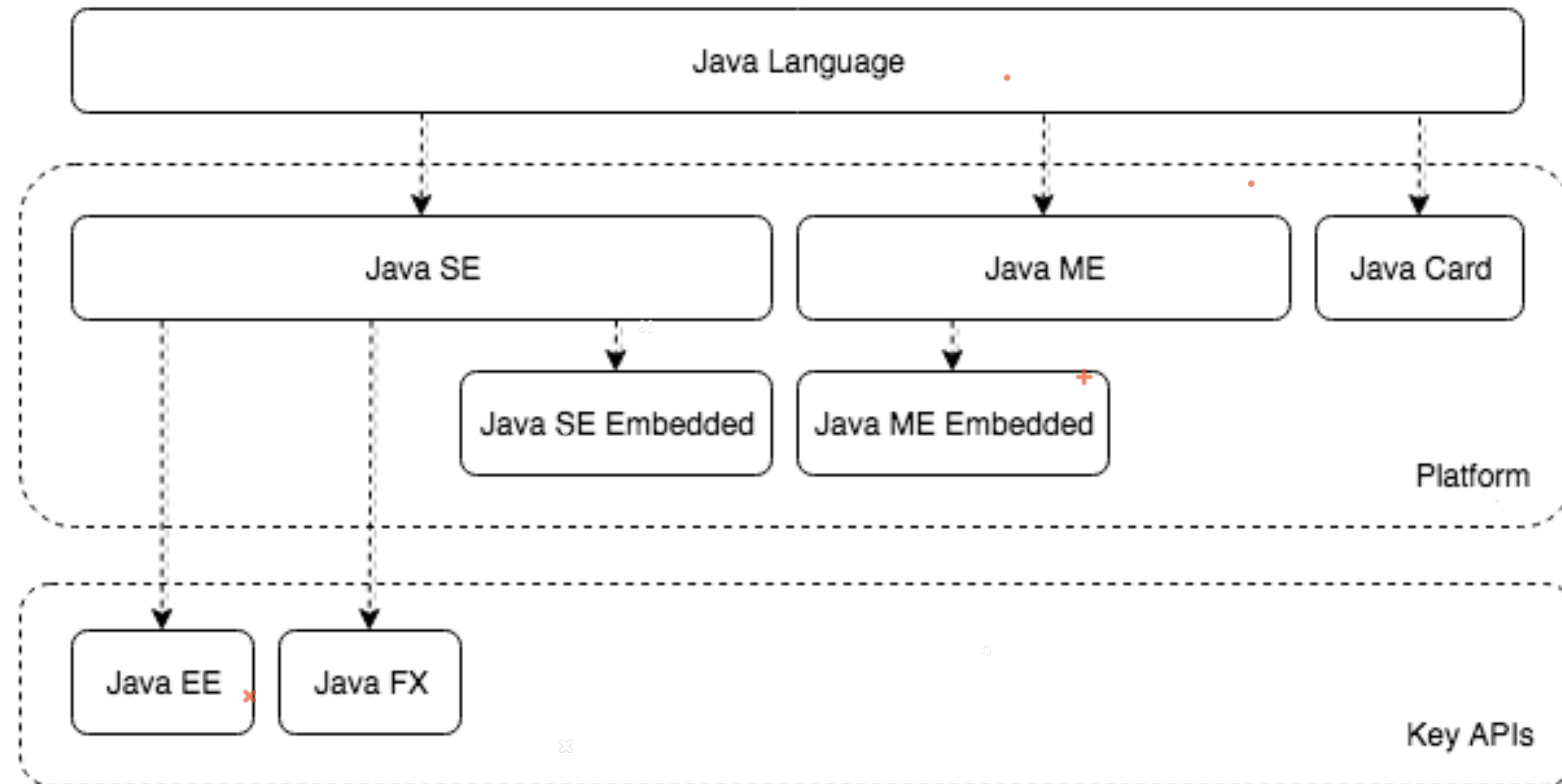


Java es Multi Propósito

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Multi Propósito



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Java Language

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Java Platform

- Java SE (Standard Edition)
- Java SE Embedded
- Java ME
- Java ME Embedded
- Java Card

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Java Key APIs

- Java EE (Enterprise Edition)
ahora Jakarta EE
- Java FX

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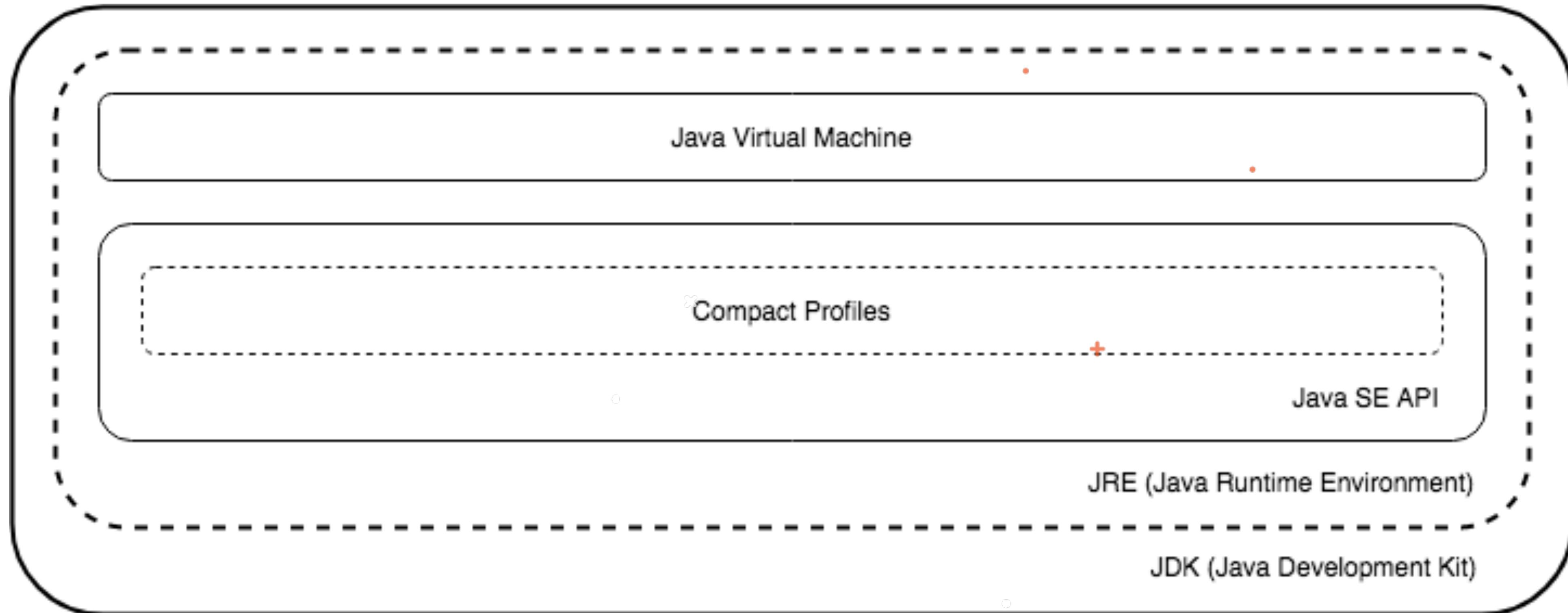


Componentes Java SE

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Componentes



JDK

- Java Development Kit
- JRE
- Java Language
- Tools and Tool APIs (java, javac, jar, keytool, etc)

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JRE

- Java Runtime Environment
- JVM
- Java SE API
- Components to run applications

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JVM

- Java Virtual Machine
- Allow java to run programs on any device and OS
- Garbage Collection
- Es una **especificación**
- Puede tener varias implementaciones (HotSpot JVM, OpenJ9, GraalVM, Zulu)

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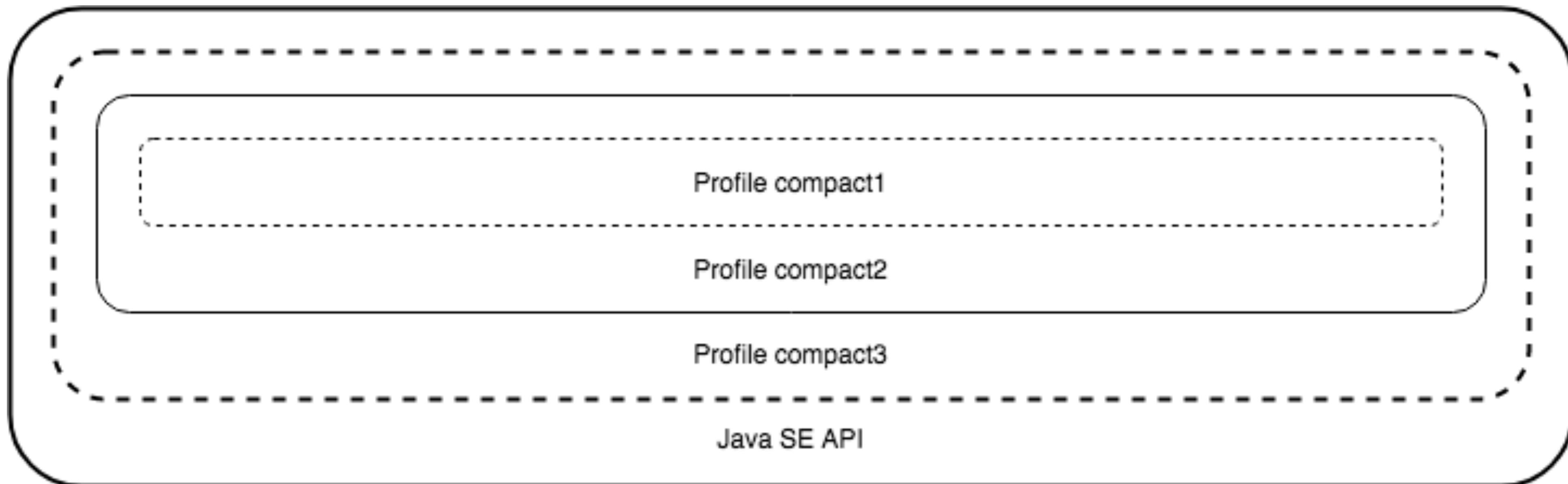
Java SE API

- lang and util base libraries
- Other base libraries (I/O, Networking, Serialization, Security, JNI)
- Integration libraries (JDBC API, CORBA, RMI)
- User interface tools (AWT, Swing, Java 2D, Sound)

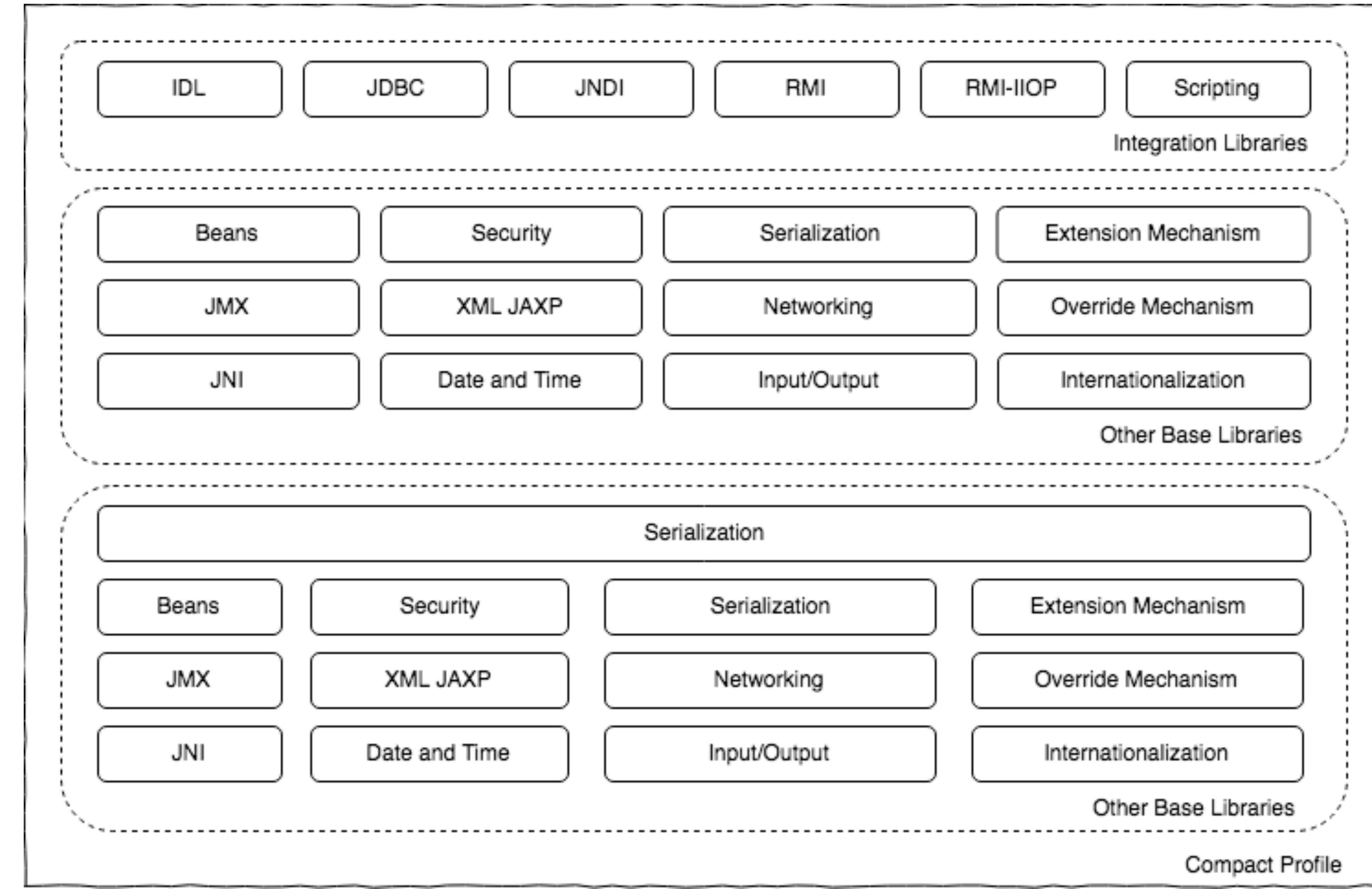
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Compact Profiles



Java SE API



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Compact Profiles

Each compact profile is defined for the next APIs:

- **compact1**: this is the smallest one, the first of the compact profiles. It owns the majority of the lang and util Base Libraries (all `java.lang` package, Math, Collection, Ref Object, Regular Expressions, Logging, Concurrency Utilities, Reflection, Versioning, JAR, ZIP). From the Other Base Libraries group contains (Security, Serialization, Extension Mechanism, Override Mechanism, Networking, Date and Time, Input/Output, Internationalization). Finally for the Integration Libraries group contains (JNDI and Scripting).
- **compact2**: contains compact1, XML JAXP of Other Base Libraries group, and for Integration Libraries Group JDBC and RMI.
- **compact3**: contains compact2 that at the same time contains compact1, but it will be added from lang and util Base Library Management and Instrumentation, from Other Base Libraries JMX.
- **Java SE API**: finally here will be included compact3 (all compact profiles) plus, Preference API from lang and util Base Libraries, Beans and JNI from Other Base Libraries, IDL and RMI-IIOP from Integration Libraries, and all the User Interface Toolkits (Swing, Java 2D, AWT, Accessibility, Drag and Drop, Input Methods, Image I/O, Print Service, Sound).



Support Model

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OpenJDK

The screenshot shows a web browser displaying the AdoptOpenJDK website at adoptopenjdk.net/?variant=openjdk8&jvmVariant=openj9. The page title is "Prebuilt OpenJDK Binaries for Free!". A descriptive text block explains the build process and licensing. Below it, a "Download for macOS x64" section allows users to choose between OpenJDK 8 (LTS), OpenJDK 11 (LTS), and OpenJDK 13 (Latest) for either the HotSpot or OpenJ9 JVM. A blue "English" button is visible on the right.

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Java™ is the world's leading programming language and platform. AdoptOpenJDK uses infrastructure, build and test scripts to produce prebuilt binaries from OpenJDK™ class libraries and a choice of either the OpenJDK HotSpot or Eclipse OpenJ9 VM.

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Download for macOS x64

1. Choose a Version 2. Choose a JVM [Help Me Choose](#)

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English

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Amazon Corretto 8

Now Generally Available

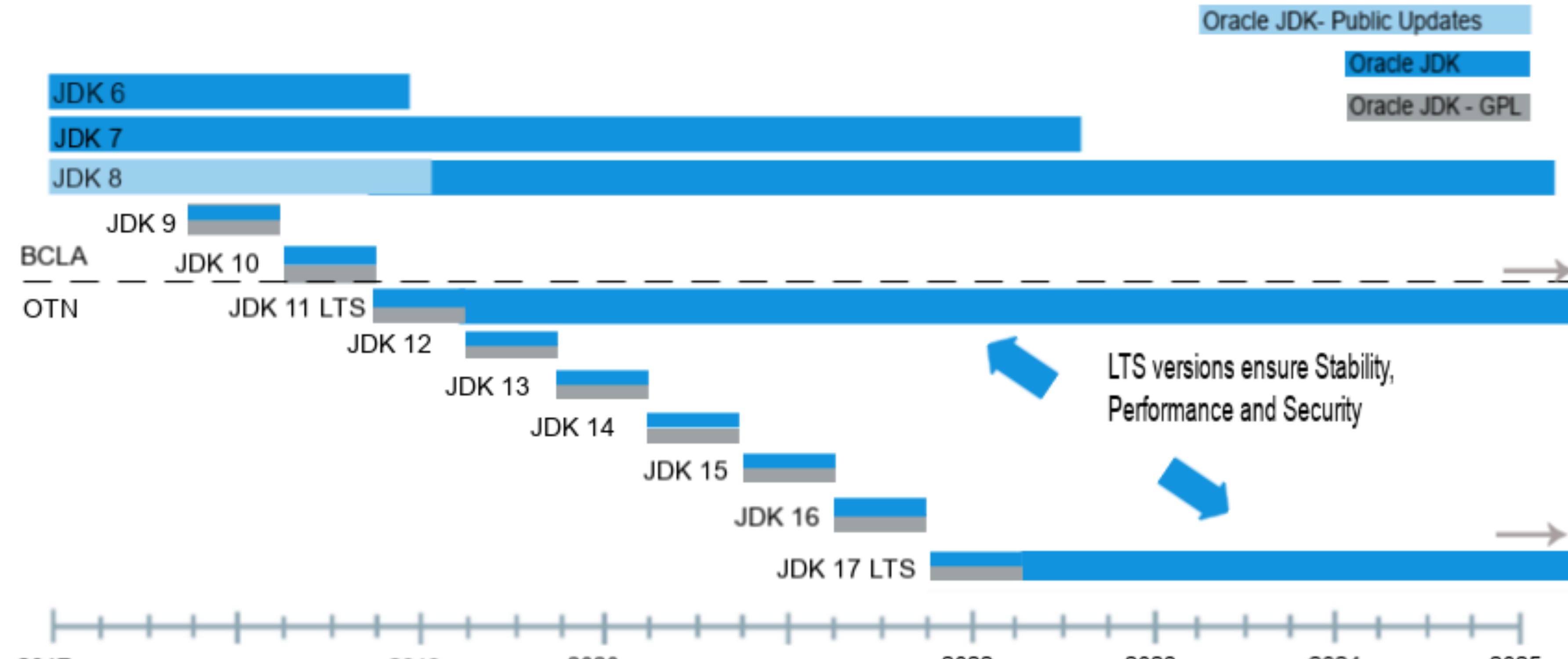


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Support License



Oracle JDK- Public Updates

Oracle JDK

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LTS versions ensure Stability,
Performance and Security

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BCLA = Binary Code License Agreement

OTN = Oracle Technology Network

LTS = Long term support release

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