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Java Programming

A Comprehensive Bootcamp from Zero to Hero

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✓ Exceptional handling

✓ BufferedReader,Scanner

✓ hashCode,equals,
Cloning,toString

✓ Immutable Objects,
records, var

✓ Wrapper Classes

✓ Collections

✓ List,ArrayList,
LinkedList

✓ Comparator,Comparable

✓ Map,HashMap,TreeMap,
LinkedHashMap

✓ Set,HashSet,Treeset,
LinkedHashSet

✓ Enums

✓ Date and Time in Java

FOR INTERMEDIATE JAVA PROGRAMMER

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✓ Generics

✓ Functional Programming

✓ Lambda expressions

✓ Functional interface

✓ Method References

✓ Constructor Reference

✓ Streams API

✓ Collections with Streams API

✓ Optional

✓ MultiThreading

✓ Deadlock, race conditions, syncronized
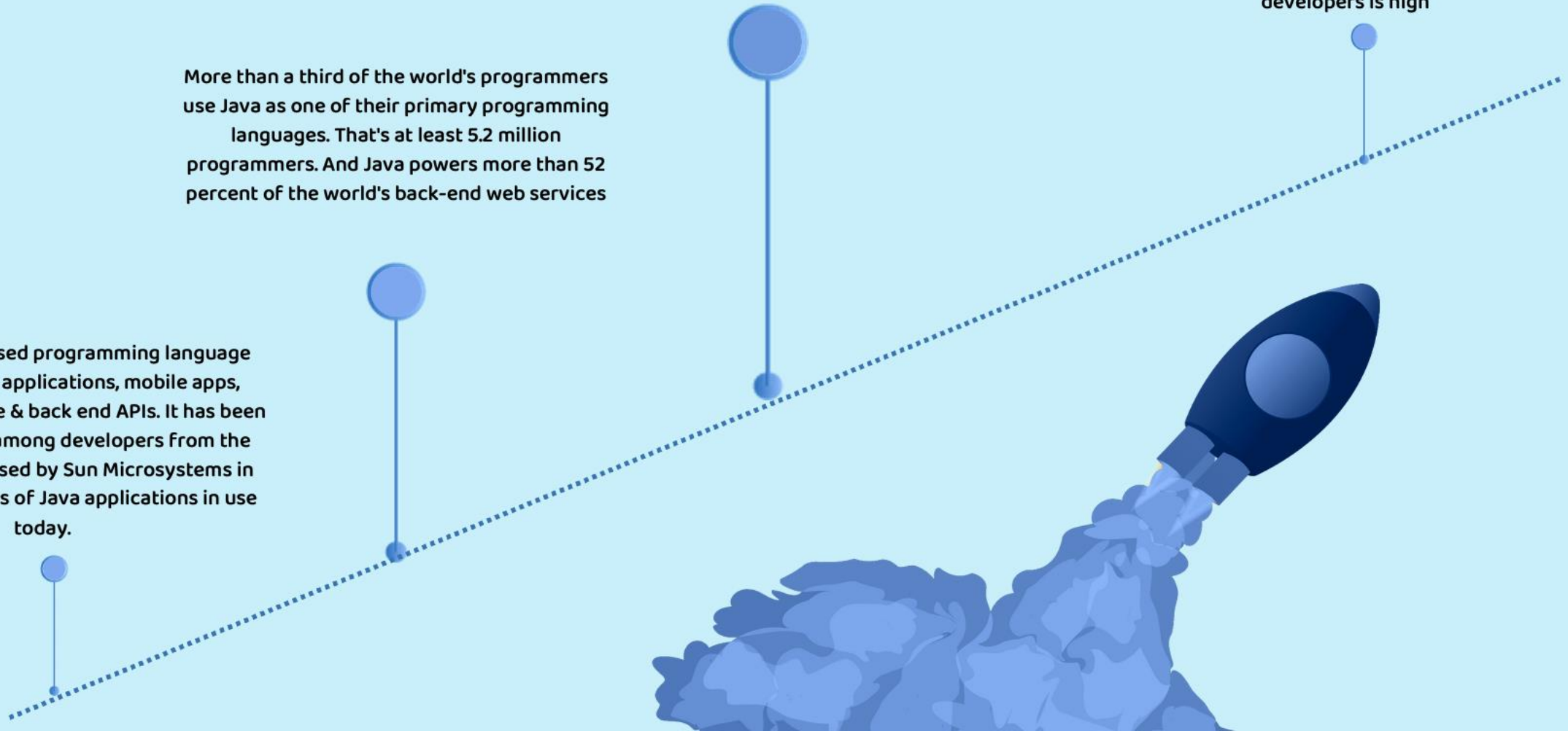
✓ Virtual Threads

FOR ADVANCED JAVA PROGRAMMER

What is Java ?

Java is a widely-used programming language for building web applications, mobile apps, enterprise software & back end APIs. It has been a popular choice among developers from the day it is first released by Sun Microsystems in **1995,** with millions of Java applications in use today.

More than a third of the world's programmers use Java as one of their primary programming languages. That's at least 5.2 million programmers. And Java powers more than 52 percent of the world's back-end web services

Ninety percent of all Fortune 500 companies use Java. Java technology powers applications of companies like Netflix, Alibaba, Tinder, Uber, PayPal, Youtube, Slack, Shopify, Twitter, Target, LinkedIn, Wells Fargo etc.

Since Java is one of the most popular programming languages in use, so it's no surprise it came in as the No. 1 skill, tech companies were looking for. According to Oracle, 3 billion mobile phones run Java, along with 125 million TV devices and 89% of desktop computers in the U.S. Java is everywhere and the demand for Java developers is high

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Approach to learn English languagge

Approach to learn Java languagge

1

ABCDEFG HIJKLM NOPQRST UVWXYZ

First we learn the **alphabets**

ABCDEFG HIJKLM NOPQRST UVWXYZ

First we learn the **alphabets**

2

hello

Once we master alphabets, we focus on learning **words**

Keyword

Once we master alphabets, we focus on learning Java **keywords** like **class, for, if, return, while, void** etc.

3

NOUN

As a next step, we will try to learn **grammar** like what is noun, adjective etc

{/>_
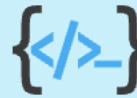
As a next step, we will try to learn **syntaxes** of Java language

4

Hello MY NAME IS

With the help of aplhabets, words and grammar, we will try to form **sentences**

With the help of aplhabets, keywords and syntaxes, we will try to write **statements**

5

We try to master language by **speaking**, **reading** and **writing**

We try to master Java language by writing **programmes** that solves a specific problem

6

Once we master language, with the help of it we try to become **Doctor, Writer, Computer Engineer** etc

API

Once we master Java language, with the help of it we try to build **web apps, mobile apps, APIs** etc

WRITE YOUR FIRST JAVA STATEMENT USING jshell

❯ what is jshell ?

The Java Shell tool (JShell) is an interactive tool for learning the Java programming language and prototyping Java code. JShell is a Read-Evaluate-Print Loop (REPL), which evaluates declarations, statements, and expressions as they are entered and immediately shows the results.

Since jshell don't need any IDEs or extra editors to execute simple java programs, It's very useful for beginners in core java and experts to use it to learn and evaluate new features and small test code.

❯ Printing our name on to the screen

Using jshell, let's try to print our name on to the screen.

Does this sound scary to achieve ? Don't worry. I am here. We just have to write below code inside the jshell,

System.out.println("Madan");

⚠️ Since printing an input on the screen/console is a most common requirement, Java provided required class and methods for the same. We just have to invoke them. So println() is a method which accepts String as an input. The println() method can be invoked using the class & static variable System.out

Methods will have ( ) which helps to pass any input data to process. Similarly a dot (.) operator can be used to invoke the elements of a class like methods, variables etc.

Every instruction inside Java should be ended with a semicolon (;)

WRITE YOUR FIRST JAVA STATEMENT USING jshell

https://tryjshell.org
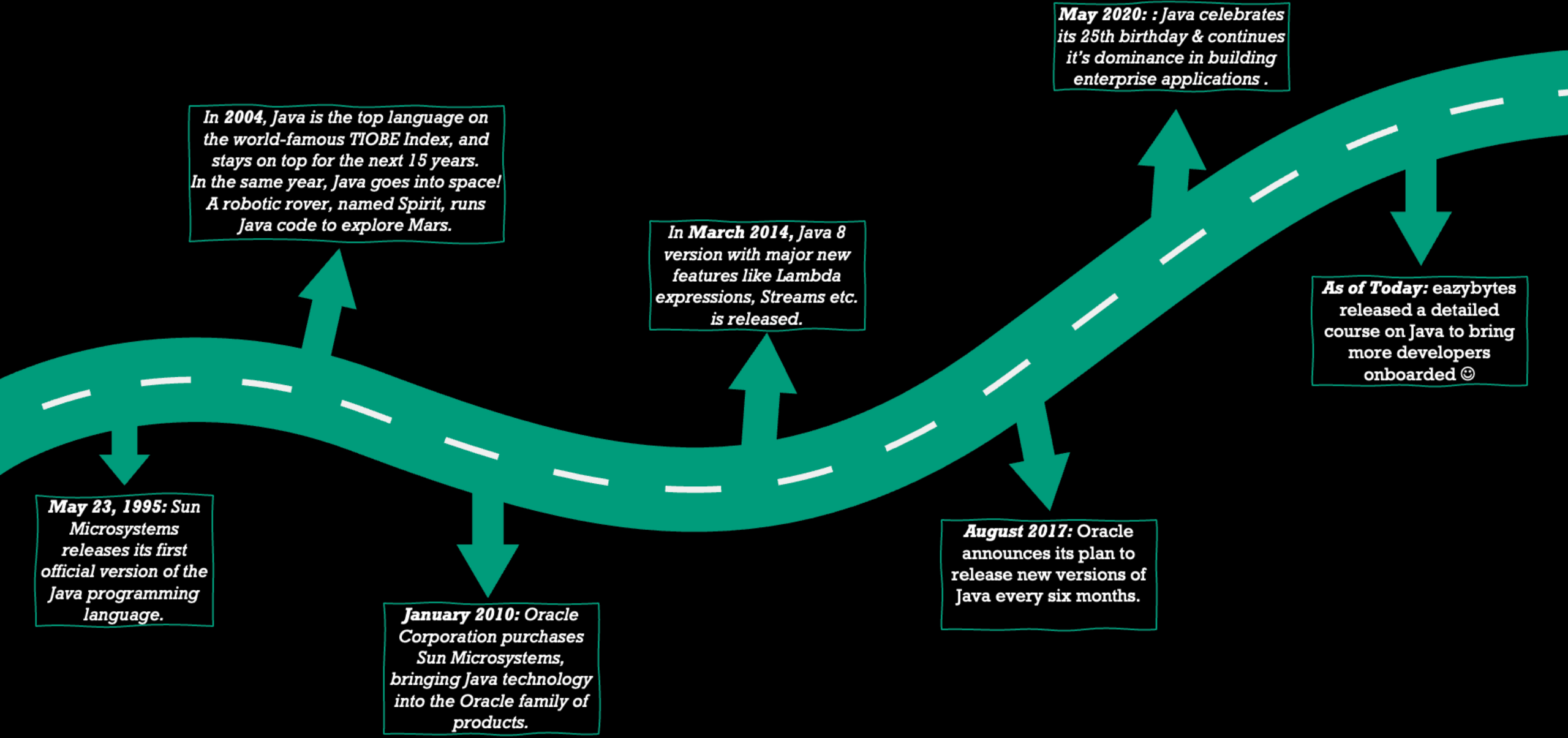
```
jshell> System.out.println("Madan");
Madan

jshell>
```

⚠️ *Mentioning a semicolon (;) after a Java statement is optional when using jshell, because Terminating semicolons are automatically added to the end of a complete snippet if not entered.*

In case you want to end the jshell session, you can use either /exit or /ex command.

BRIEF HISTORY OF JAVA

*In **2004**, Java is the top language on the world-famous TIOBE Index, and stays on top for the next 15 years. In the same year, Java goes into space! A robotic rover, named Spirit, runs Java code to explore Mars.*

*In **March 2014**, Java 8 version with major new features like Lambda expressions, Streams etc. is released.*

***May 2020:** : Java celebrates its 25th birthday & continues it's dominance in building enterprise applications .*

***As of Today:** eazybytes released a detailed course on Java to bring more developers onboarded ☺*

***May 23, 1995:** Sun Microsystems releases its first official version of the Java programming language.*

***January 2010:** Oracle Corporation purchases Sun Microsystems, bringing Java technology into the Oracle family of products.*

***August 2017:** Oracle announces its plan to release new versions of Java every six months.*

Java Release Timeline

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2+ years → 3+ years → 6 months → 6 months → 6 months →

JDK 7
07/2011

JDK 8 (LTS)
03/2014

JDK 9
09/2017

JDK 10
03/2018

JDK 11 (LTS)
09/2018

JDK 12
03/2019

6 months

6 months ← 6 months ← 6 months ← 6 months ← 6 months ← 6 months ←

JDK 19
09/2022

JDK 18
03/2022

JDK 17 (LTS)
09/2021

JDK 16
03/2021

JDK 15
09/2020

JDK 14
03/2020

JDK 13
09/2019

6 months

6 months → 6 months →

JDK 20
03/2023

JDK 21 (LTS)
09/2023

JDK 22
03/2024
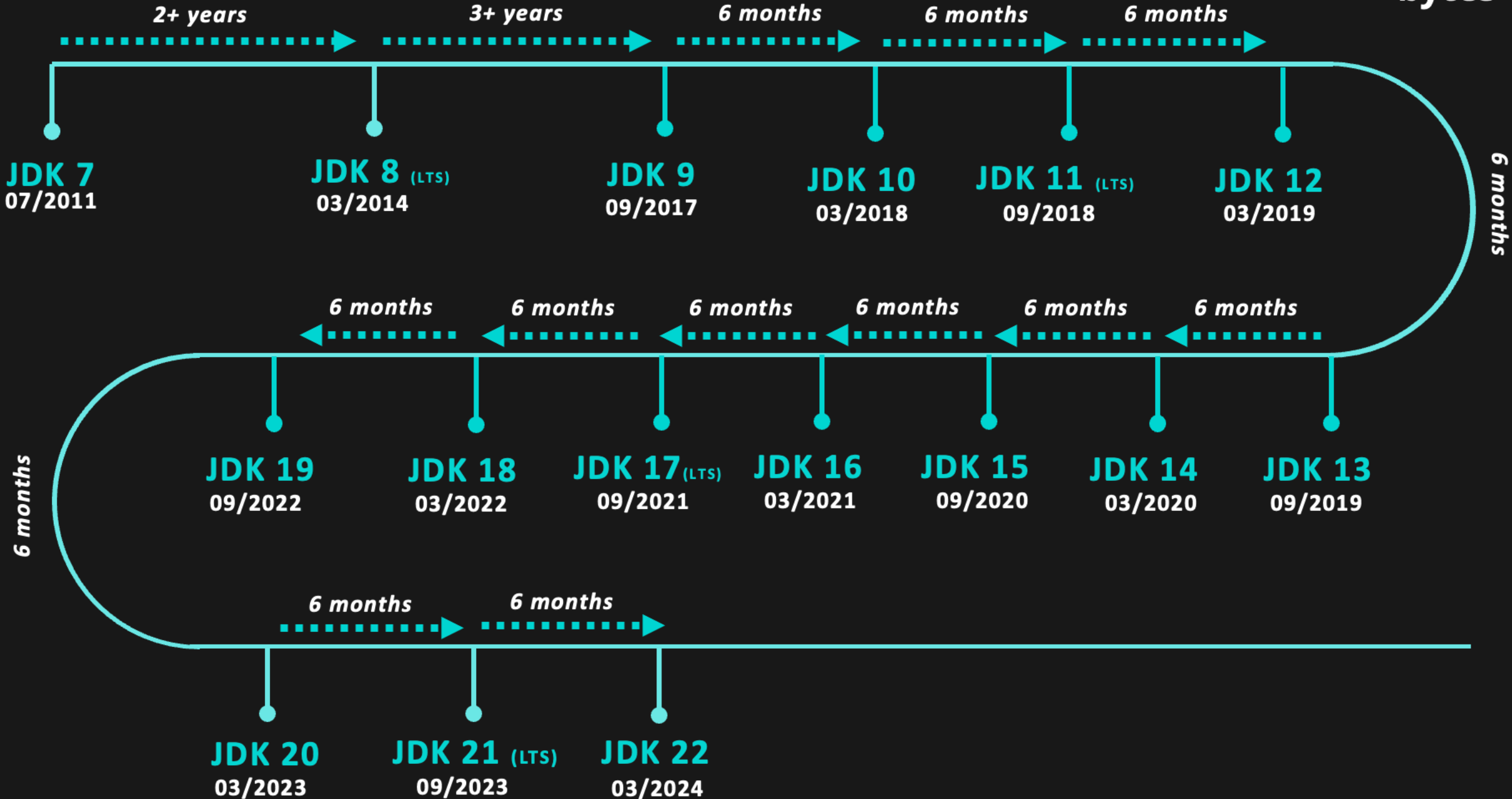
DIFFERENT JDK VENDORS IN JAVA

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https://openjdk.org/

Open JDK

OpenJDK is an open source implementation of the Java Standard Edition platform with contribution from Oracle and the open Java community. All other vendors of JDK are written on top of OpenJDK by doing a few tweaks without breaking the TCK compatibility.

https://www.oracle.com/java/

Oracle JDK

Oracle JDK is a commercial JDK targeted more towards an enterprise audience which values stability and requires Oracle support for any issues. It can be used for free during Development.

https://adoptium.net/

Adoptium JDK

The Adoptium Working Group promotes and supports high-quality, TCK certified JDKs. Eclipse Temurin is the name of the OpenJDK distribution from Adoptium.

⚠️ *TCK - Java Technology Compatibility Kit*
Other famous JDK vendors - Amazon Corretto, Azul, RedHat, IBM etc.