

L1

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Master In Core Java



Fully Practical
Live Classes



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What is Java??

- ▶ Java is a **programming language** and a **platform**. Java is a high level, robust, object-oriented and secure programming language.
- ▶ Java was developed by *Sun Microsystems* (which is now the subsidiary of Oracle) in the year 1995. *James Gosling* is known as the father of Java. Before Java, its name was *Oak*. Since Oak was already a registered company, so James Gosling and his team changed the Oak name to Java.
- ▶

```
class HelloJava{
```
- ▶

```
    public static void main(String args[]){
```
- ▶

```
        System.out.println("Hello Developers");
```
- ▶

```
    } }
```

Java Application

According to Sun, 3 billion devices run Java. There are many devices where Java is currently used. Some of them are as follows:

- ▶ Desktop Applications such as acrobat reader, media player, antivirus, etc.
- ▶ Enterprise Applications such as banking applications.
- ▶ Mobile
- ▶ Embedded System
- ▶ Smart Card
- ▶ Robotics
- ▶ Games, etc.

Types of Java Applications

There are mainly 4 types of applications that can be created using Java programming:

- ▶ 1) Standalone Application
 - ▶ Standalone applications are also known as desktop applications or window-based applications. These are traditional software that we need to install on every machine. Examples of standalone application are Media player, antivirus, etc. AWT and Swing are used in Java for creating standalone applications.
- ▶ 2) Web Application
 - ▶ An application that runs on the server side and creates a dynamic page is called a web application. Currently, Servlet, JSP, Struts, Spring, Hibernate, JSF, etc. technologies are used for creating web applications in Java.
- ▶ 3) Enterprise Application
 - ▶ An application that is distributed in nature, such as banking applications, etc. is called enterprise application. It has advantages of the high-level security, load balancing, and clustering. In Java, EJB is used for creating enterprise applications.
- ▶ 4) Mobile Application
 - ▶ An application which is created for mobile devices is called a mobile application. Currently, Android and Java ME are used for creating mobile applications.

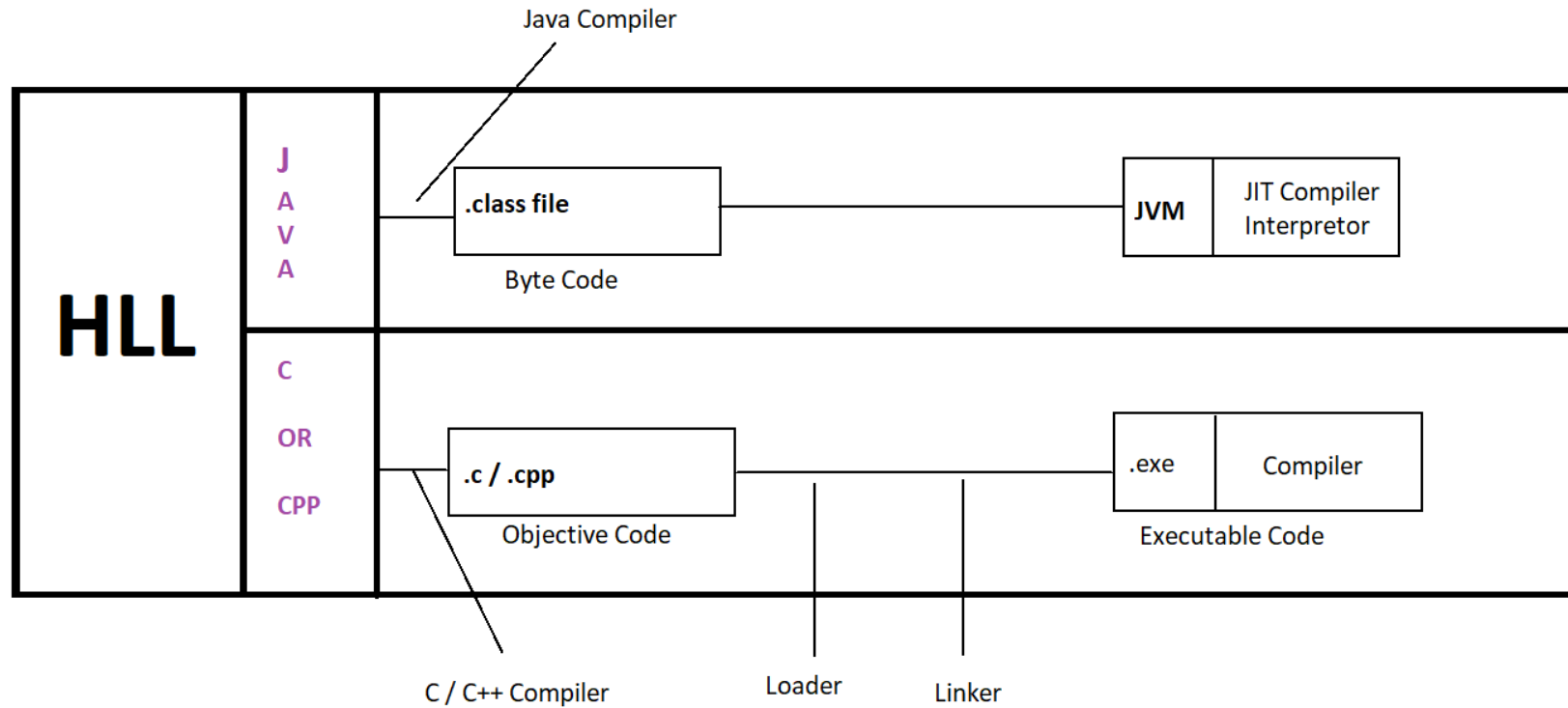
Java Platforms / Editions

- ▶ **1) Java SE (Java Standard Edition)**
- ▶ It is a Java programming platform. It includes Java programming APIs such as java.lang, java.io, java.net, java.util, java.sql, java.math etc. It includes core topics like OOPs, String, Regex, Exception, Inner classes, Multithreading, I/O Stream, Networking, AWT, Swing, Reflection, Collection, etc.
- ▶ **2) Java EE (Java Enterprise Edition)**
- ▶ It is an enterprise platform which is mainly used to develop web and enterprise applications. It is built on the top of the Java SE platform. It includes topics like Servlet, JSP, Web Services, EJB, JPA, etc.
- ▶ **3) Java ME (Java Micro Edition)**
- ▶ It is a micro platform which is mainly used to develop mobile applications.
- ▶ **4) JavaFX**
- ▶ It is used to develop rich internet applications. It uses a light-weight user interface API.

Features of JAVA

- ▶ Simple
- ▶ Object-Oriented
- ▶ Portable
- ▶ Platform independent
- ▶ Secured
- ▶ Robust
- ▶ Architecture neutral
- ▶ Interpreted
- ▶ High Performance
- ▶ Multithreaded
- ▶ Distributed
- ▶ Dynamic

What is Byte Code??



Identifiers in Java

- ▶ Identifier cannot be a keyword.
- ▶ Can be a class name, variable name, method name. Name in java program.
- ▶ Identifiers are case-sensitive.
- ▶ It can have a sequence of letters and digits. However, it must begin with a letter, \$ or _. The first letter of an identifier cannot be a digit.
- ▶ There is no length limit for java identifiers. But it is not recommended to use lengthy identifiers.
- ▶ It's convention to start an identifier with a letter rather and \$ or _.
- ▶ Whitespaces are not allowed.
- ▶ Similarly, you cannot use symbols such as @, #, and so on.

Cont.

Some Valid Identifiers

- ▶ `score`
- ▶ `level`
- ▶ `highestScore`
- ▶ `number1`
- ▶ `convertToString`

Some Invalid Identifiers

- ▶ `class`
- ▶ `float`
- ▶ `1number`
- ▶ `highest Score`
- ▶ `@pple`

Reserved Keywords in Java (50)

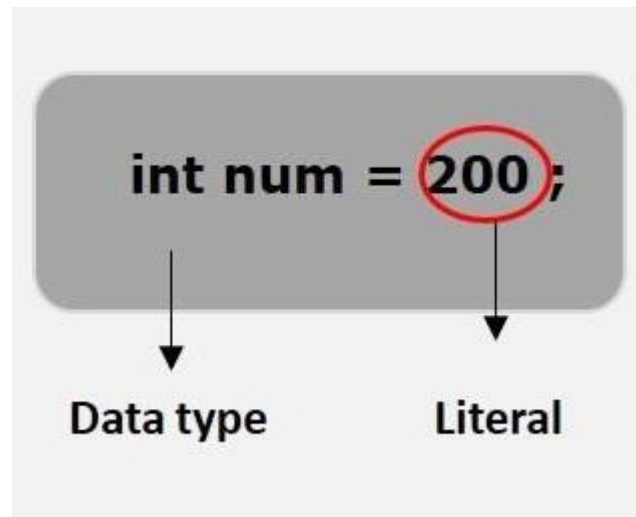
abstract	continue	For	new	switch
assert***	default	goto*	package	synchronized
boolean	do	If	private	this
break	double	implements	protected	throw
byte	else	import	public	throws
case	enum****	instanceof	return	transient
catch	extends	Int	short	try
char	final	interface	static	void
class	finally	long	strictfp**	volatile
const*	float	native	super	While

Reserved Keywords 53 | Used Keyword 48 | Unused Keyword 2- goto and const

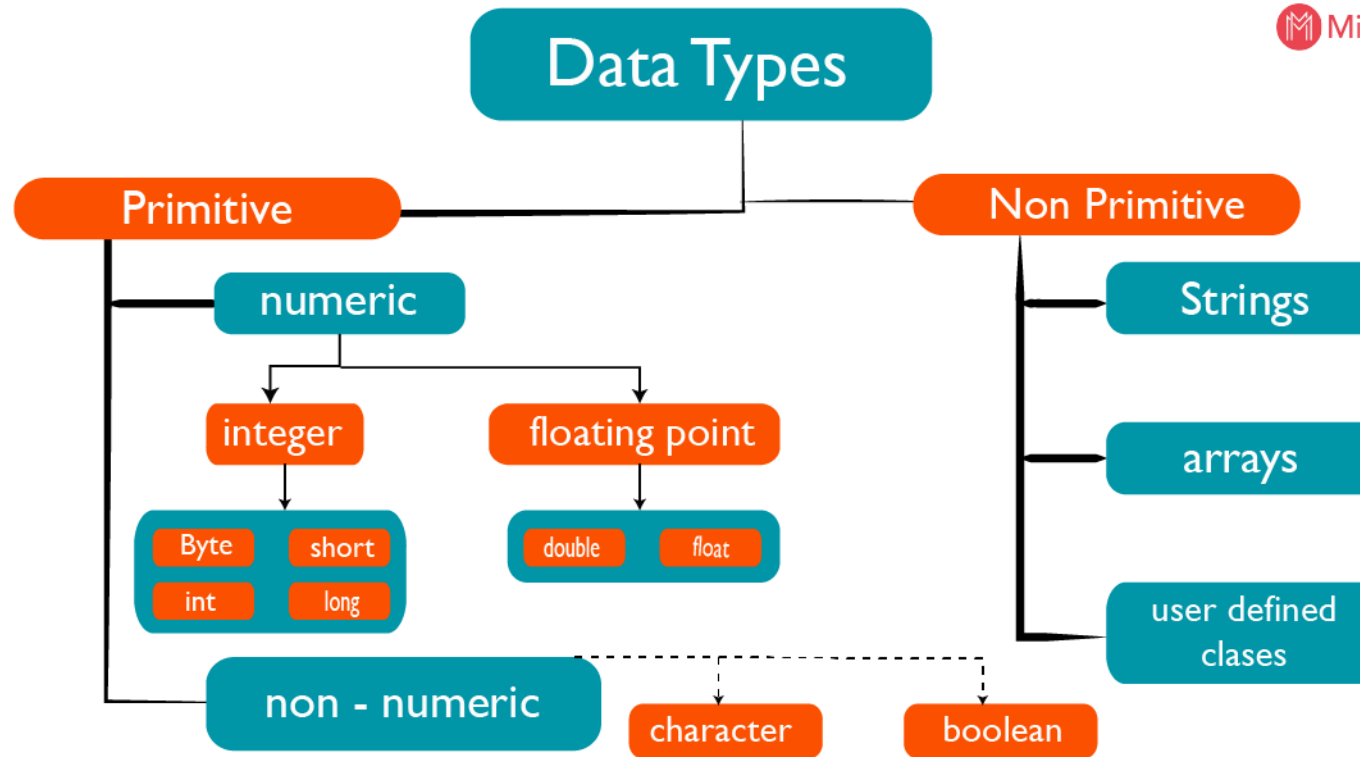
Reserved Literal (3) - True, False, Null

Literals in Java

- ▶ A literal is a source code representation of a fixed value. They are represented directly in the code without any computation.
- ▶ Literals can be assigned to any primitive type variable.



DataTypes in Java



Data Type and Sizes

TYPE	DESCRIPTION	DEFAULT	SIZE	EXAMPLE LITERALS	RANGE OF VALUES
boolean	true or false	false	1 bit	true, false	true, false
byte	twos complement integer	0	8 bits	(none)	-128 to 127
char	unicode character	\u0000	16 bits	'a', '\u0041', '\101', '\l', '\', '\n', '\b'	character representation of ASCII values 0 to 255
short	twos complement integer	0	16 bits	(none)	-32,768 to 32,767
int	twos complement integer	0	32 bits	-2, -1, 0, 1, 2	-2,147,483,648 to 2,147,483,647
long	twos complement integer	0	64 bits	-2L, -1L, 0L, 1L, 2L	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
float	IEEE 754 floating point	0.0	32 bits	1.23e100f, -1.23e-100f, .3f, 3.14F	upto 7 decimal digits
double	IEEE 754 floating point	0.0	64 bits	1.23456e300d, -1.23456e-300d, 1e1d	upto 16 decimal digits

Declaring variable in Java

- ▶ `String name="Some Name";`
- ▶ `char letterA = 'A'`
- ▶ `int age=20;`
- ▶ `boolean answer=true;`
- ▶ `short=20;`
- ▶ `long amount=155000L;`
- ▶ `float percentage=75.5f;`
- ▶ `double d = 12.3`

