

Introduction to Java











Master Dev SS4

Introduction

- James Gosling initiated Java language project in June 1991.
- Sun released the first public implementation as Java 1.0 in 1995.
- Oak, Java.



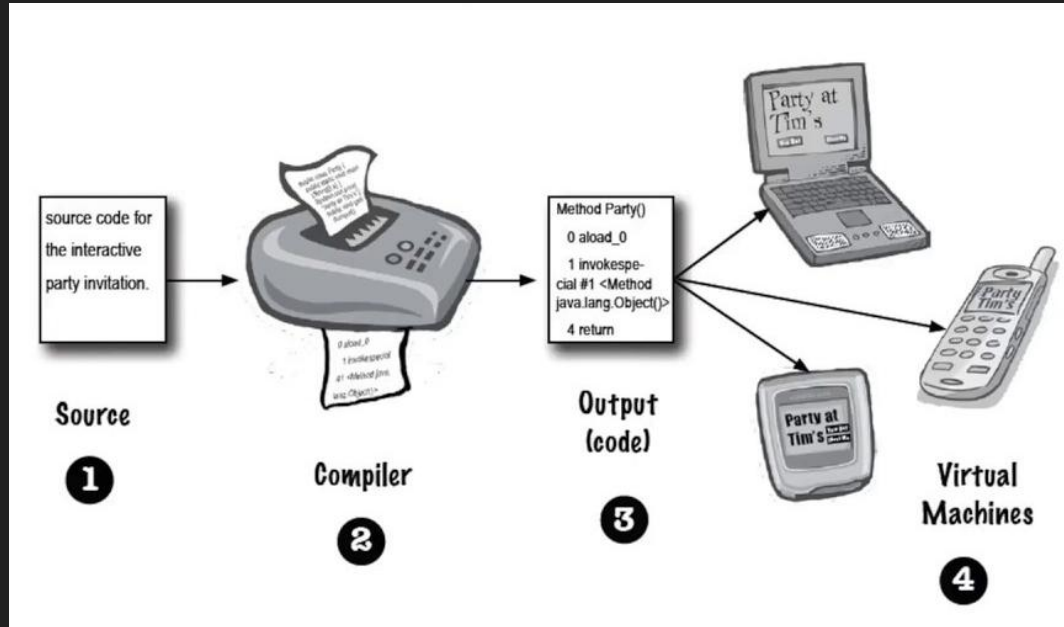
TIOBE Index for June 2022

Jun 2022	Jun 2021	Change	Programming Language		Ratings	Change
1	2	▲		Python	12.20%	+0.35%
2	1	▼		C	11.91%	-0.64%
3	3			Java	10.47%	-1.07%
4	4			C++	9.63%	+2.26%
5	5			C#	6.12%	+1.79%
6	6			Visual Basic	5.42%	+1.40%
7	7			JavaScript	2.09%	-0.24%
8	10	▲		SQL	1.94%	+0.06%
9	9			Assembly language	1.85%	-0.21%
10	16	▲		Swift	1.55%	+0.44%

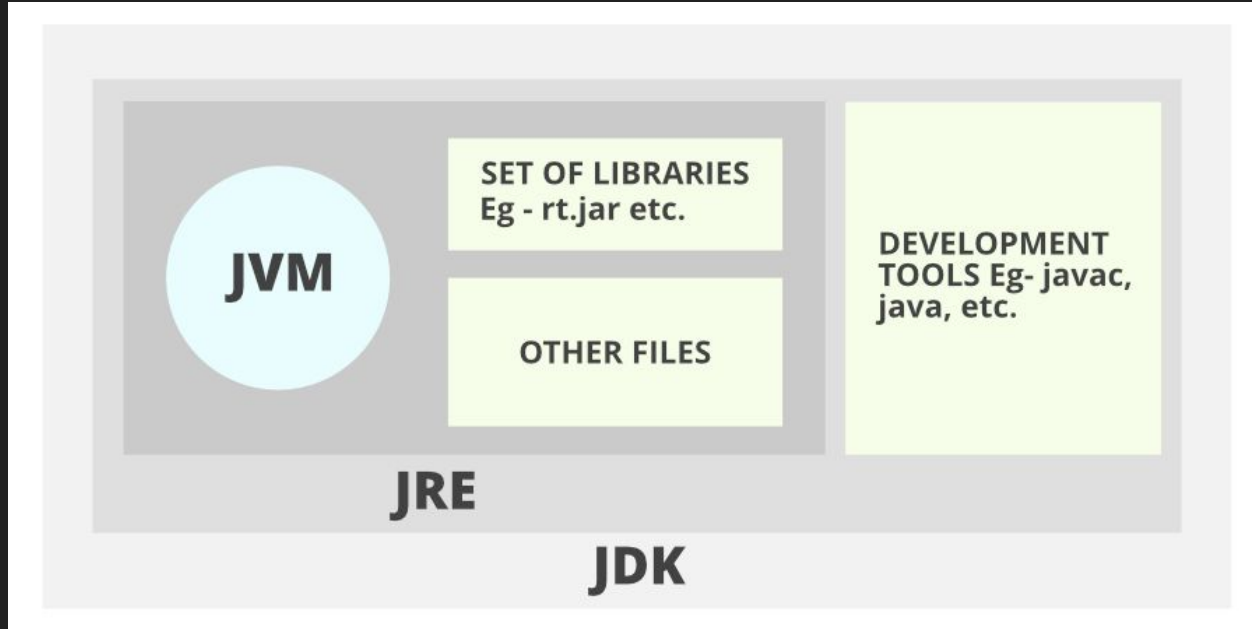
Java Building Blocks

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The Way Java Works



JDK, JRE and JVM



Java Class Structure

- Fields and Methods.
- Comments.
- Classes and Files.

```
class Product {  
  
    private String name;  
  
    public String getName() {  
        return name;  
    }  
  
    public void setName(String name) {  
        this.name = name;  
    }  
}
```

```
// One line comment  
  
/*  
 * Multiple line comment  
 */  
  
/**  
 * Javadoc multiple-line comment  
 *  
 * @author taivv13  
 */
```

Method main()

```
public static void main(String[] args) {  
    //  
}
```

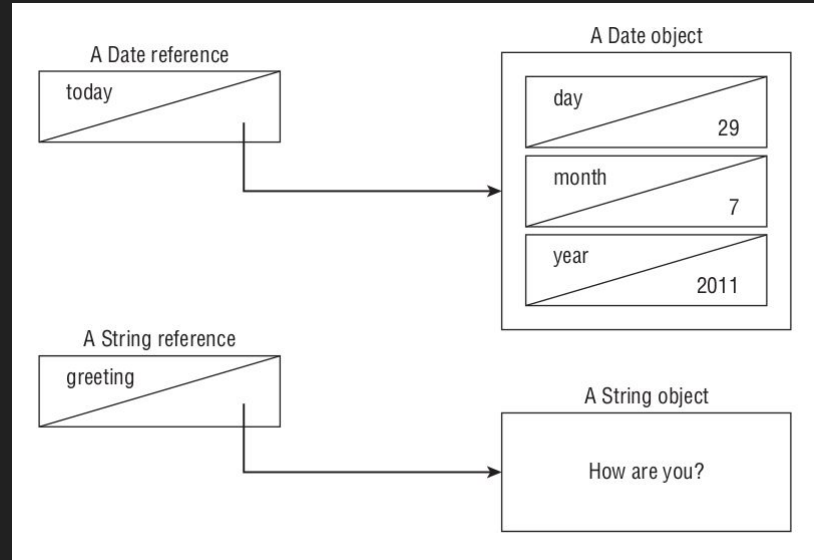

Object References and Primitives

Java primitive types

Keyword	Type	Example
boolean	true or false	true
byte	8-bit integral value	123
short	16-bit integral value	123
int	32-bit integral value	123
long	64-bit integral value	123
float	32-bit floating-point value	123.45f
double	64-bit floating-point value	123.456
char	16-bit Unicode value	'a'

Object References and Primitives

Java reference types



Object References and Primitives

Key differences

- reference types can be assigned null.
- reference types can be used to call methods when they do not point to null.
- primitive types have lowercase type names. All classes that come with Java begin with uppercase.

Default initialization of Variables

Local Variables

Local variables must be initialized before use.

Instance and Class Variables

Variable type	Default initialization value
boolean	false
byte, short, int, long	0 (in the type's bit-length)
float, double	0.0 (in the type's bit-length)
char	'\u0000' (NUL)
All object references (everything else)	null

Advantages and Disadvantages of Java

Advantages	Disadvantages
<ul style="list-style-type: none">- Java is easy to learn.- Java is platform-independent. Java - write once run anywhere.- Java is Simple.- Java is Object-Oriented Programming language.- Java supports Multithreading.	<ul style="list-style-type: none">- Java is slow and has a poor performance.- Java requires significant memory space.

Thanks for watching