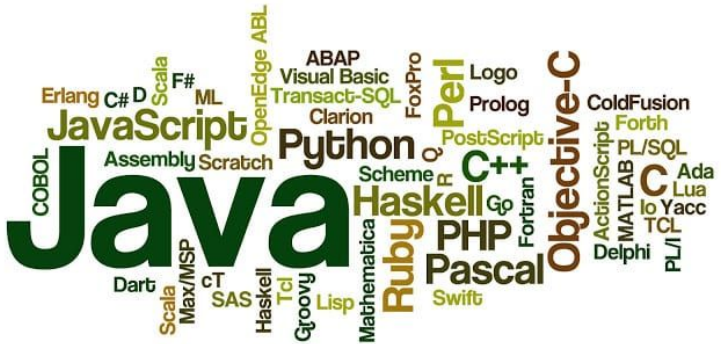
summarizer 1000

Java Programming Language

ACADEMIADECODIGO

FÁBIO FERREIRA 10-05-2018

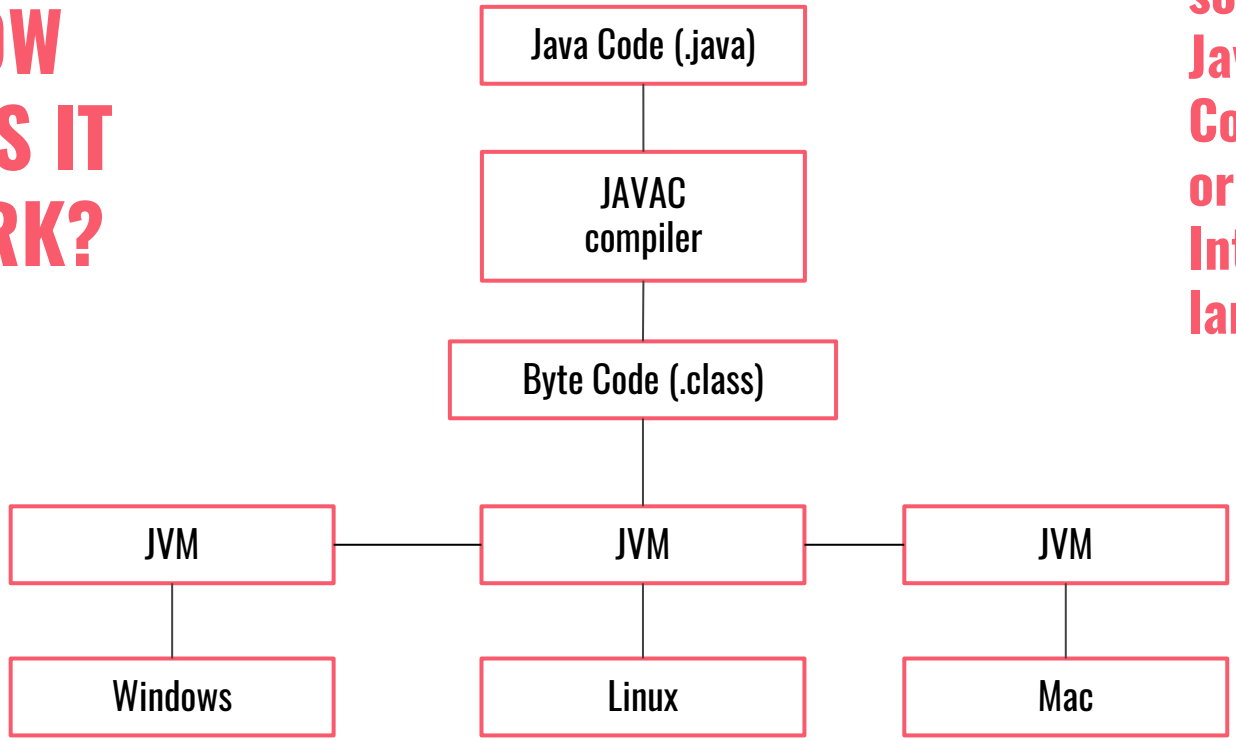
Catarina presented PROGRAMMING LANGUAGES



Telma talked about REGULAR EXPRESSIONS and how to configure git to ignore files.

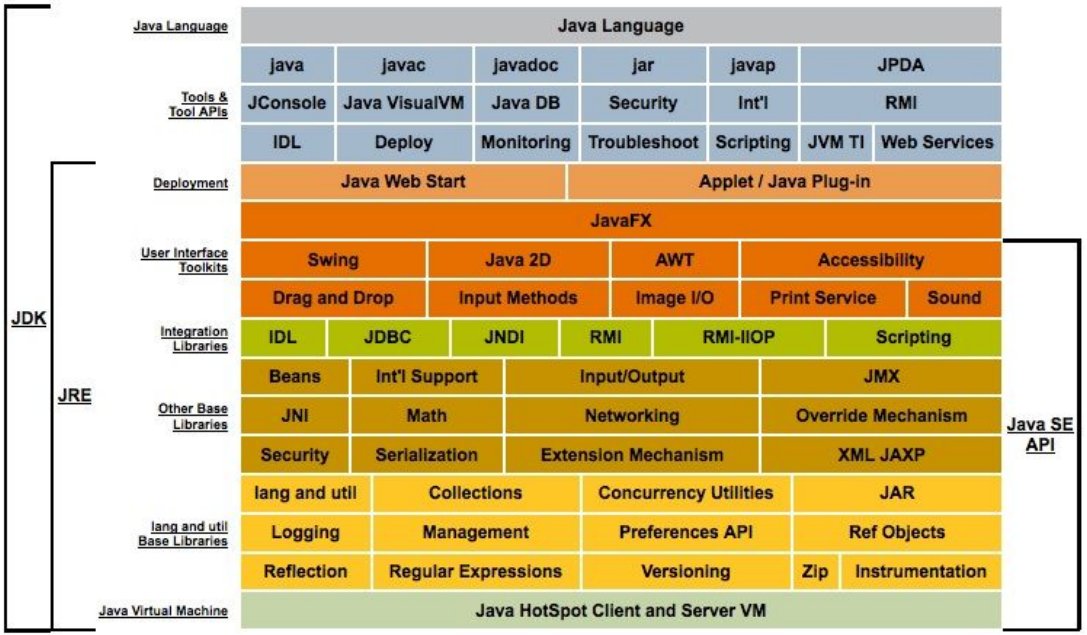

JAVA
WRITE ONCE, RUN ANYWHERE

HOW DOES IT WORK?



so...
Java is a Compiled or an Interpreted language?

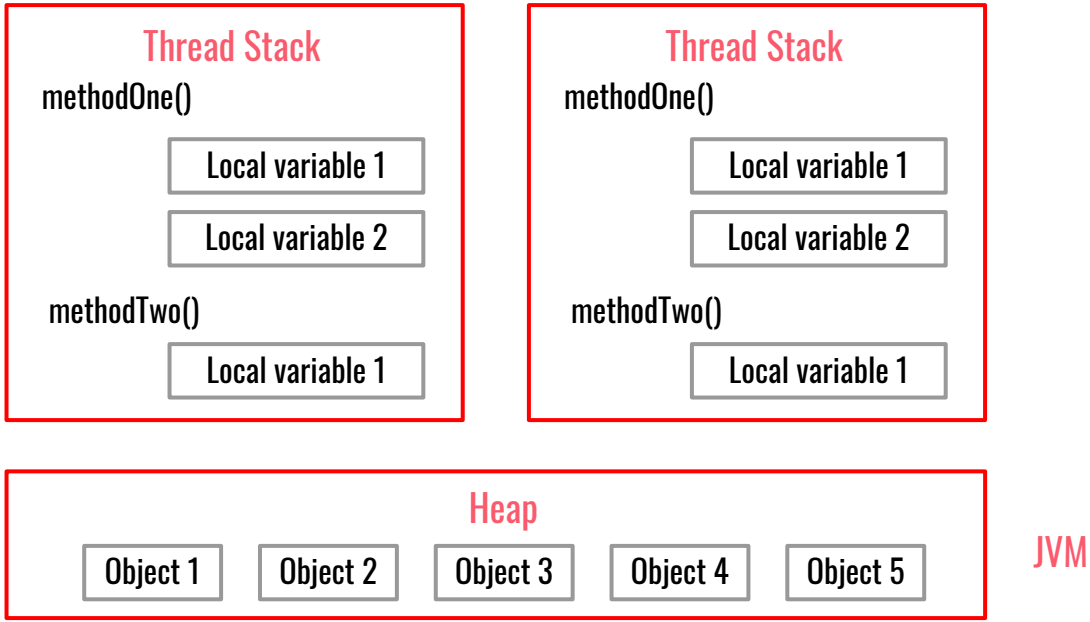
Java Platform



The Java platform consists of two essential software packages:

JDK- Java Development Kit
JRE- Java SE Runtime Environment

Java Memory Model



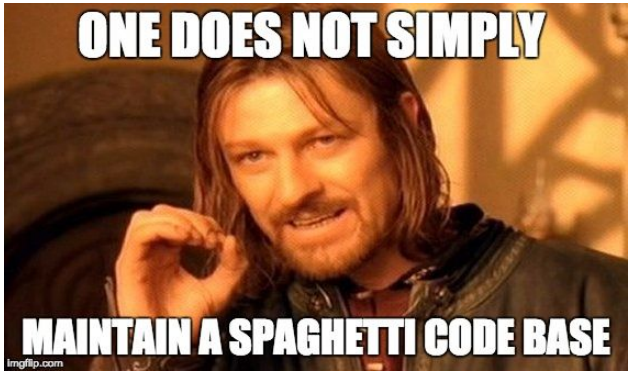
Object

is a combination of variables and methods.

Programming Paradigms

Procedural vs Object-Oriented Programming

Procedural	**Object-Oriented Programming**
Program is divided into small parts called **functions**.	Programs are divided into parts called **objects**.
Does not have any proper way of hiding data so it is less secure.	Supports Data Hiding, providing more security.
Example: C, VB, FORTRAN,Pascal	Example: JAVA,C#



Our first program in Java

```
class HelloWorld {

    public static void main(String[] args) {

        System.out.println("Hello World!!");

    }

}
```

“Hello World!!”

Java is a statically typed language.

We always need to define the type of variable.

`int number= 10;` ✓ `number = 10;` ✗

Variables

Primitive Types

int age=20;

Stored in memory

Type	Contains	Default	Size	Range
boolean	true or false	false	1 bit	NA
char	Unicode character	\u0000	16 bits	\u0000 to \uFFFF
byte	Signed integer	0	8 bits	-128 to 127
short	Signed integer	0	16 bits	-32768 to 32767
int	Signed integer	0	32 bits	-2147483648 to 2147483647
long	Signed integer	0	64 bits	-9223372036854775808 to 9223372036854775807
float	IEEE 754 floating point	0.0	32 bits	±1.4E-45 to ±3.4028235E+38
double	IEEE 754 floating point	0.0	64 bits	±4.9E-324 to ±1.7976931348623157E+308

Reference Types

Ball b;

Ball b = new Ball();

Ball c=b;

Stored in the heap.

Primitive Wraps

Wraps a primitive variable into an object which extends its functionality

```
int primitiveInt = 50;

Integer objectInt = new Integer("50");

System.out.println("To Binary: " + Integer.toBinaryString(primitiveInt));  // ??
System.out.println("To String: " + objectInt.toString());
```

Operators

Assignment = ex: int score = 200

Math Operators + - * / ex: score = 200+10 Modulus % ex: 200 % 3

Unary Operator ++ -- ex: score ++ += -= *= /= ex: score += 10

Ternary Operator ? ex: (x % 2 == 0) ? "yes " : "no "

Relational Operators > < >= <= == != ex: score > 99

Logical Operators && || ex: score > 99 && score < 150

Basic Methods

Math.abs Math.ceil Math.floor Math.round Math.min Math.max

Strings

A String is a sequence of characters (char).

A String in Java is an Object, we access it using a String reference.

We can create a String in a literal form or using a constructor.

literal

String hello = ”hello world”;

checks the *String pool*
and reuse it.
More memory efficient.

constructor

String hello = new String(“hello world”);

always creates a new object in heap.

and finally....

Compare the String content

```
System.out.println(c.equals(d));
```

Concatenating Strings

```
System.out.println(hello + world);
```

Converting Numbers to String

```
Integer.toString(age);
```

Getting a Character by Index

```
str.charAt(6);
```

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