

Java Programming Language

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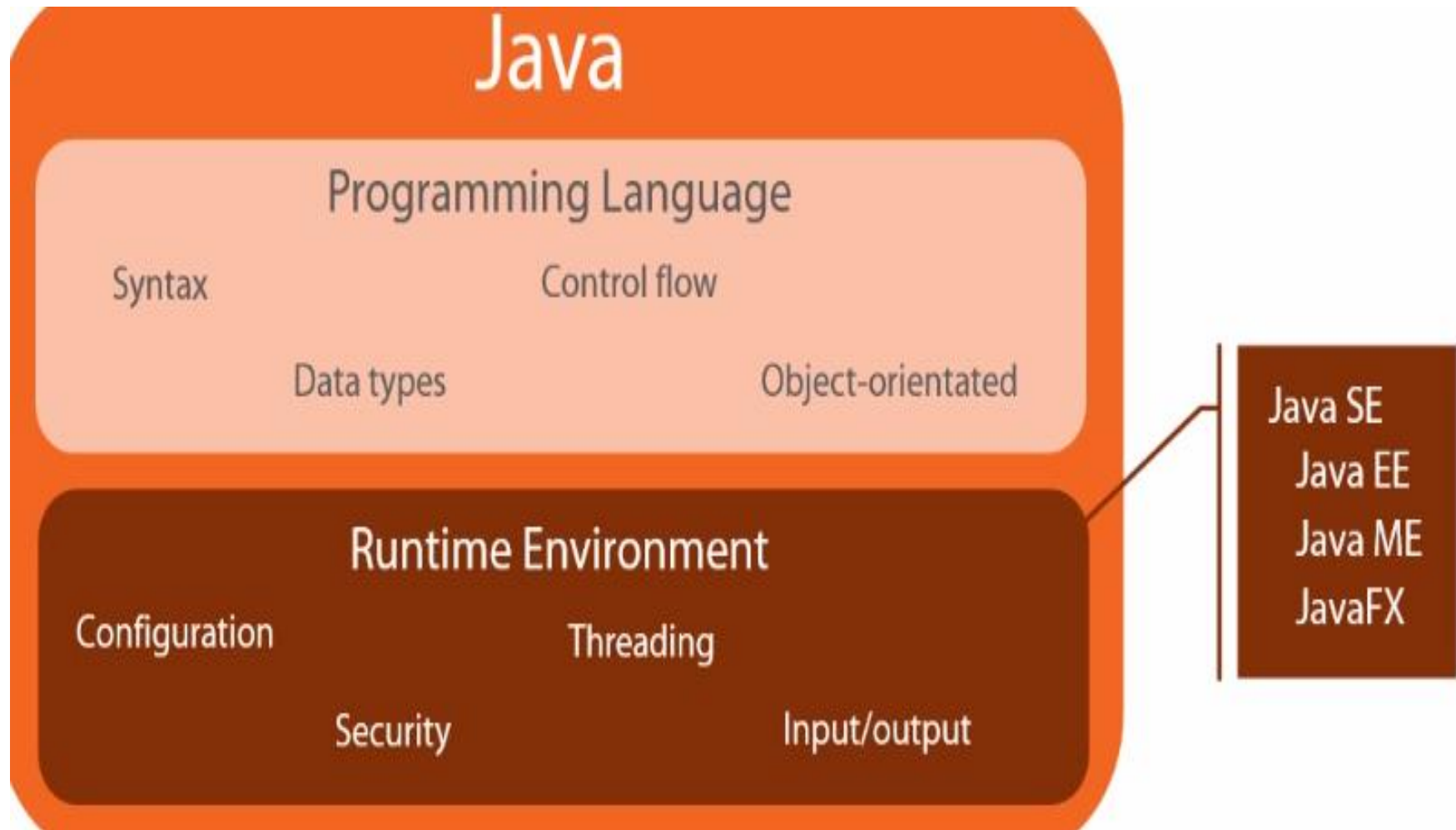
Agenda

- “ What is JAVA
- “ Difference between Java Language and Java Environment
- “ Difference between JRE and JDK
- “ OOPS concept and Java

What Is JAVA

- “ We can say JAVA comprises of 2 things.
 - . Programming Language
 - “ Programming language contains their own Syntax, Data Types, Different Types of Loops and Control Flow, Object –Oriented which maps real world entity with Classes in Java etc.
 - . Runtime Environment
 - “ Configuration
 - “ Security
 - “ Threading
 - “ Input/output

What is Java contd..



JRE vs JDK

“ Java Runtime Environment (JRE)

- . Required to run Java application
- . End User normally requires only the JRE

“ Java Development Kit (JDK)

- . Provide tools required to create Java Application
- . Developer normally requires the JDK
- . JDK installation includes the JRE

“ Now we need to understand how does it work together.

JDK

- “ We write the java language source code for example abc.java and now I wanted to run it in some host environment how we will do it ?
- “ For this we require JDK tool. We will feed source code into JDK tool which will produce java application. Now this java application use an abstraction properties and produces byte code which is platform independent. This byte code need some interface to run on the host environment which is provided by JRE.

JDK and JRE

“ Abc.java -> It requires compiling the program
-> Using JDK -> After compilation -> Byte Code
-> Requires and interface -> provided by JRE ->
Output

OOPs Concept and Java

“ Abstraction

- . Abstraction is a process of exposing essential feature of an entity while hiding other irrelevant detail. Why would you want to use abstraction?
abstraction reduces code complexity

OOPS Concept and Java

“ Encapsulation

- . We have to take in consideration that Encapsulation is somehow related to Data Hiding. Encapsulation is when you hide your modules internal data and all other implementation details/mechanism from other modules.
it is also a way of restricting access to certain properties or component.
Remember, Encapsulation is not data hiding, but Encapsulation leads to data hiding

OOPS Concept and Java

” Inheritance

- . *The ability of creating a new class from an existing class.*
- . Like the word Inheritance literally means it is a practice of passing on property, titles, debts, rights and obligations upon the death of an individual.
in OOP this is somehow true(Except the death of an individual) ,
where The base class(the existing class sometimes called as the Parent class) has properties and methods that will be inherited by the sub class(sometime called a subtype or child class) and *it can have additional properties or methods.*
- . Inheritance is also a way to use code of an existing objects.

OOPS Concept and Java

“ Polymorphism

- . Polymorphism refers to the ability to take into different forms or stages. A subclass can define its own unique behaviour and still share the same functionalities or behaviour of its parent/base class. Yes, you got it right, subclass can have their own behaviour and share some behaviour from its parent class BUT!! not vice versa. A parent class cannot have the behaviour of its subclass.

Running Java Program

- “ We have to 1st compile program. While compiling we may get error of JAVAC doesn't recognized as an internal command
- “ Either we need to set the Env Variable or we can set the path

```
set path=C:\Program Files\Java\jdk1.8.0_131\bin;
```