

What is Java? (Popular Perception)

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Popular Perception/Definition

- Java is an object oriented programming language
- Class based OO language
- High level programming language
- Multi-threaded
- Write once - run anywhere
- Cross platform language
- Platform Independent
- Robust and Secured
- Interpreted language
- It is an open source

Is this claim valid?

Contradictions/Challenges

- Does Android Phone support Java?
 - NO
 - A Java class doesn't run on Android Phones out of box
 - Although majority android application is written using java language.
- Does iOS support Java?
 - NO
- Have you heard the term — "This computer doesn't have Java?"
 - We havent installed Java.
 - What have we not installed — Java Programming lanuage?
 - Do everyone needs to program in Java?
- When you try to download "java", what are your actually downloading?

Windows - Which should I choose?		
	Windows Online filesize: 1.99 MB	Instructions
	Windows Offline filesize: 69.61 MB	Instructions
	Windows Offline (64-bit) filesize: 79.19 MB	Instructions
If you use 32-bit and 64-bit browsers interchangeably, you will need to install both 32-bit and 64-bit Java in order to have the Java plug-in for both browsers. » FAQ about 64-bit Java for Windows		

- Why request for a Java download ended up downloading JRE?
- Is JRE and object oriented programming language?
- Is JRE platform independent
- Can you write an object oriented programming language using JRE?

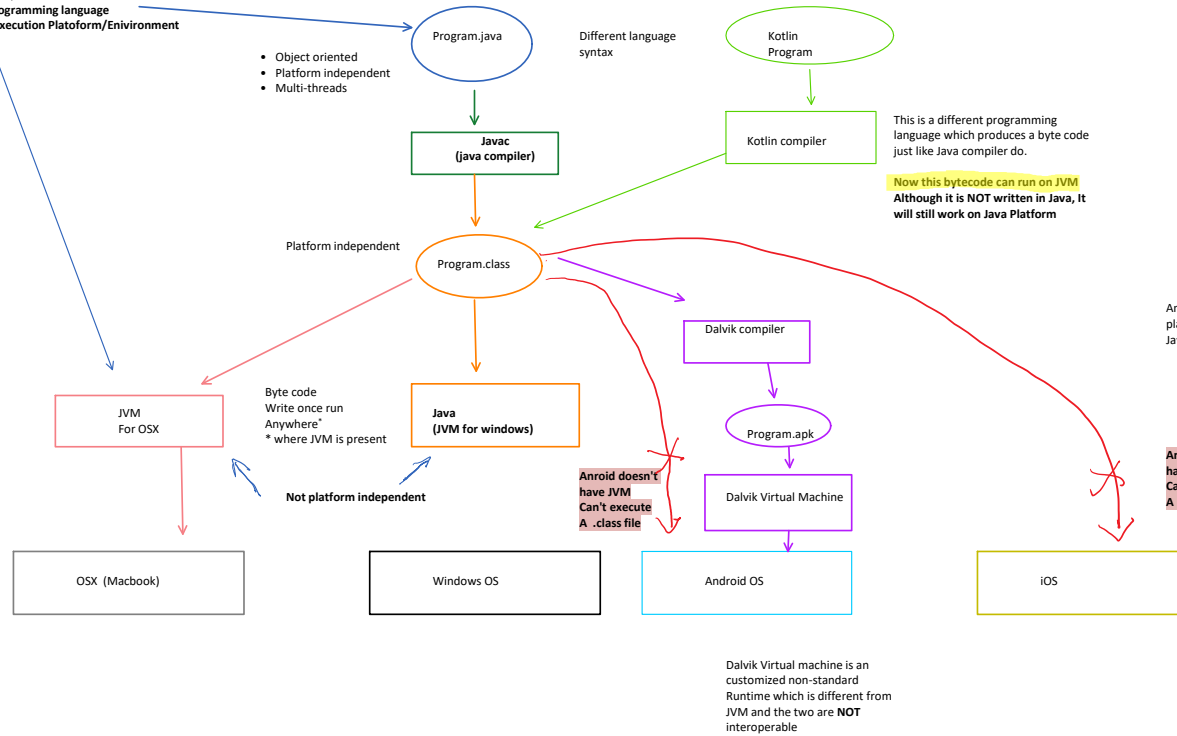


How many Java are there?

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In the world of computation Java refers to two related but **distinct terms**

1. **Java is a Programming language**
2. **Java is an execution Platform/Environment**

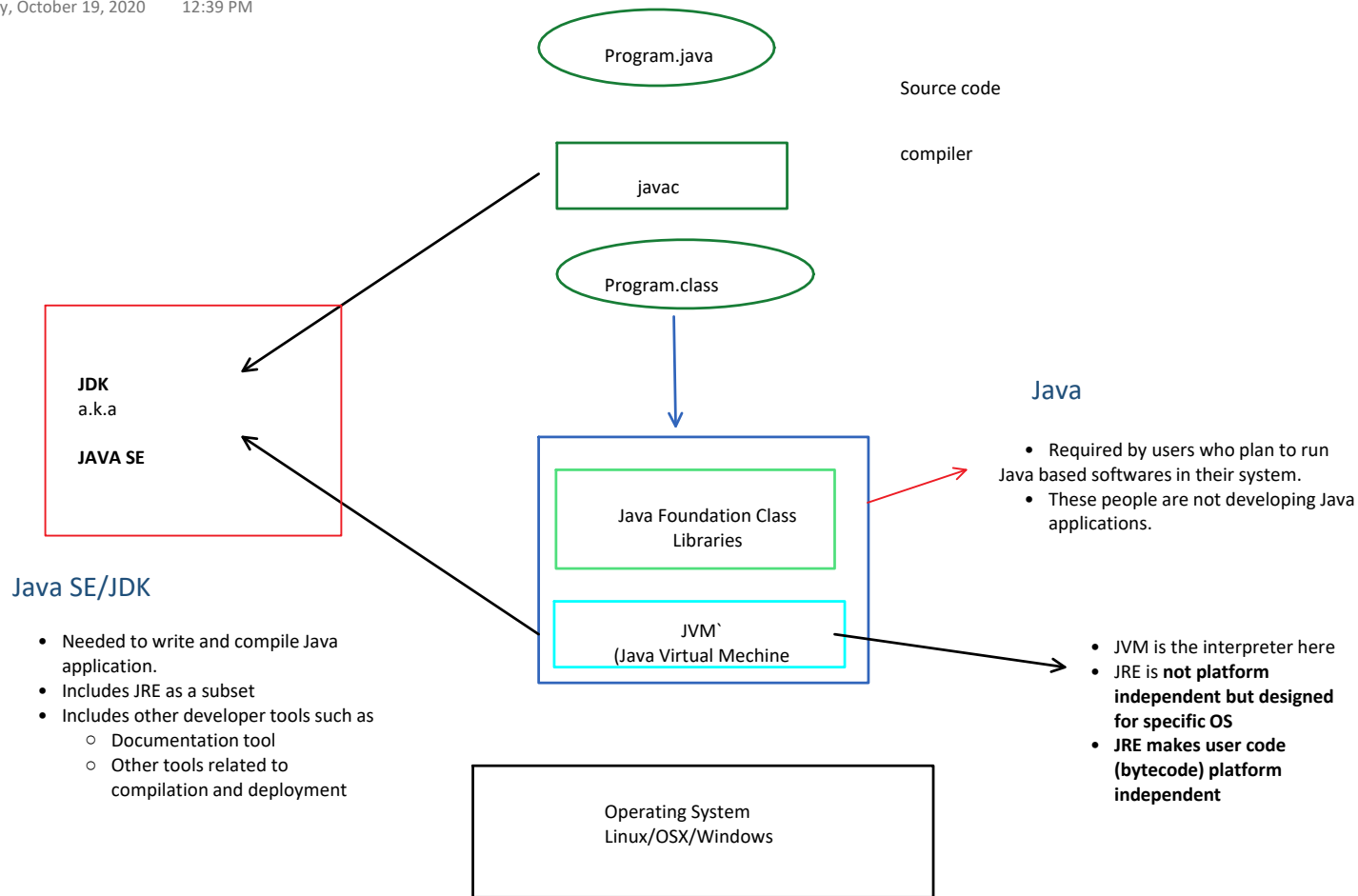


Since the release of Android Studio 3.0 in October 2017, Kotlin is included as an alternative to the standard Java compiler. The Android Kotlin compiler lets the user choose between targeting Java 6 or Java 8 compatible bytecode. Kotlin has been Google's preferred language for Android app development since 7 May 2019.

Android and IOS doesn't support Java platform and they are not considered Java systems.

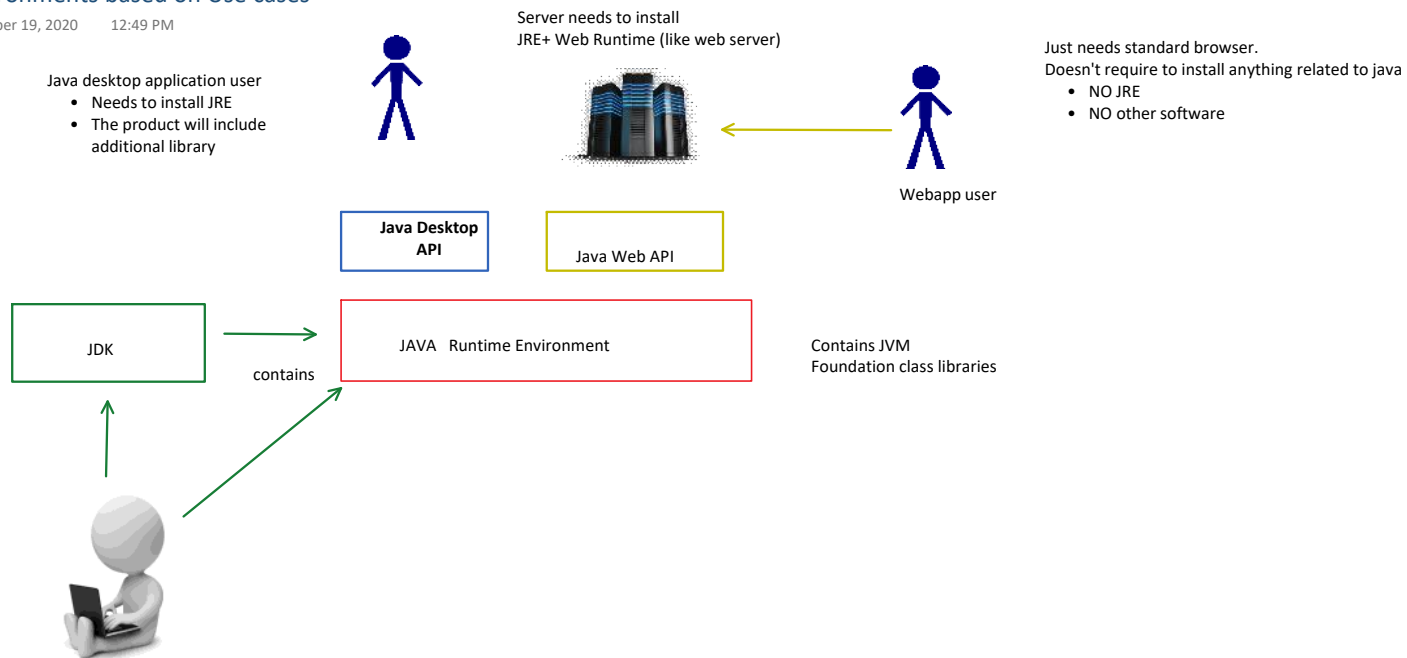
Java Framework

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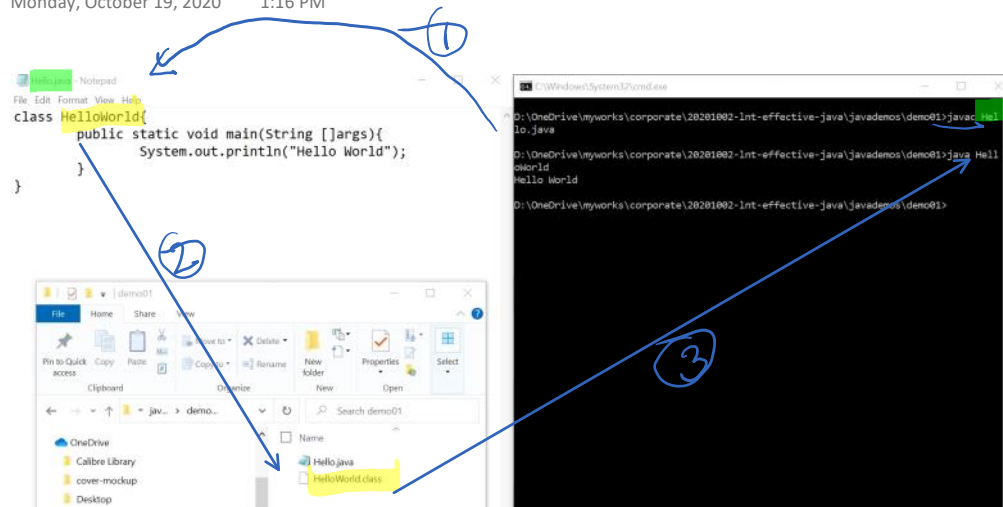
Java Environments based on Use cases

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Compiling and Running Java code

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1. You compile a source file
1. The byte code name is same as that of Class present in source code and not same as the .java file name
2. You run the byte code using java command

c:> java HelloWorld

Static context

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```
class FactorialApp{
    public static void main(String []args){
        int n=5;
        int fn=factorial(n); //user defined function

        System.out.println("Factorial of "+n+" is "+fn);
    }

    int factorial(int x){
        int fx=1;
        while(x>1)
            fx*=x--;

        return fx;
    }
}
```

FactorialApp.java:5: error: non-static method factorial(int) cannot be referenced from a static context

int fn=factorial(n); //user defined function

1 error

A static method can't access non-static method of the class directly

Important

Solution#1

Solution

- There are multiple way to solve this problem
- We will choose different solutions depending on the context

Solution 1

- Make factorial function static

```
static int factorial(int x){

    int fx=1;
    while(x>1)
        fx*=x--;

    return fx;
}
```