

Introduction to JVM

Java Virtual Machine and the main method

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Topics list

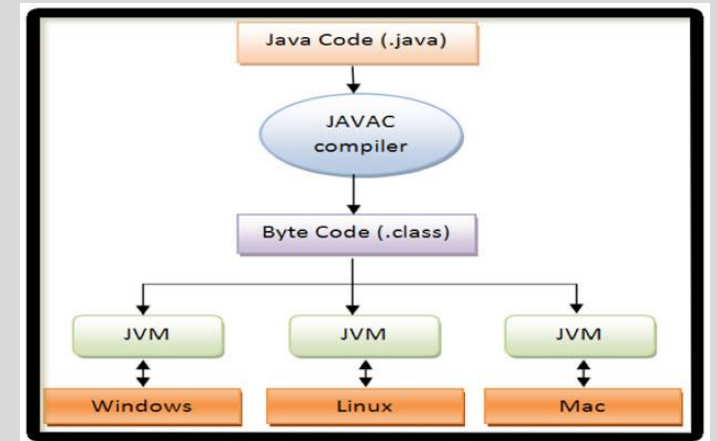
1. Files in Java.

2. Java Virtual Machine (JVM).

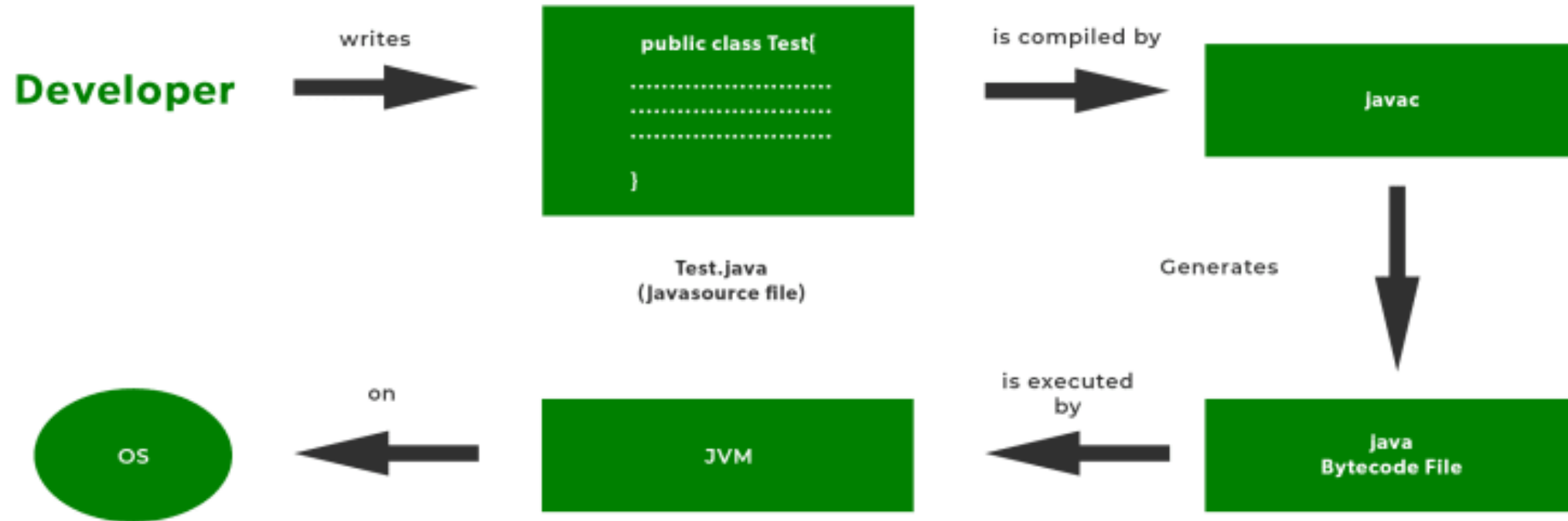
3. main() method.

Files in Java

- **Java code** is written in **.java** file.
 - code contains one or more Java language constructs e.g. Classes, Methods, Variable, Objects etc.
- **Compiling** this code generates a **.class** file
 - A **.class** file
 - “**byte code**”
 - the input to Java Virtual Machine (JVM)
 - The **JVM** (*for a specific platform*)
 - **reads** this byte code
 - **interprets** it as machine code instructions (*for that platform*)
 - and **executes** the program (*on that platform*)



Development Process



Step from java.code to machine code

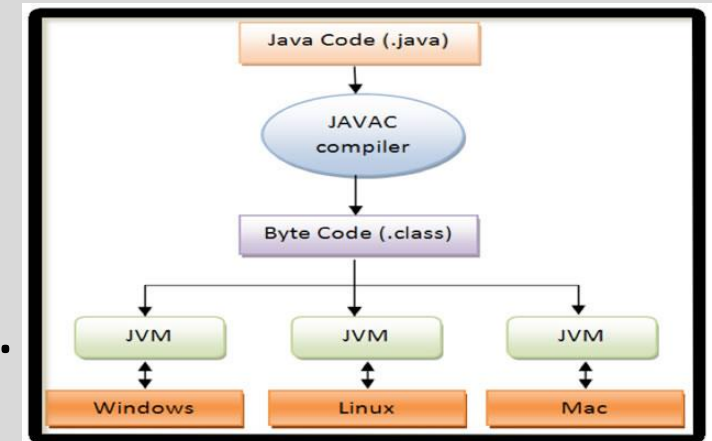
- java source code is compiled.
- Transformed to bytecode by java compiler.
- Interpreted and executed by the java virtual machine on the underlying operating system.

Topics list

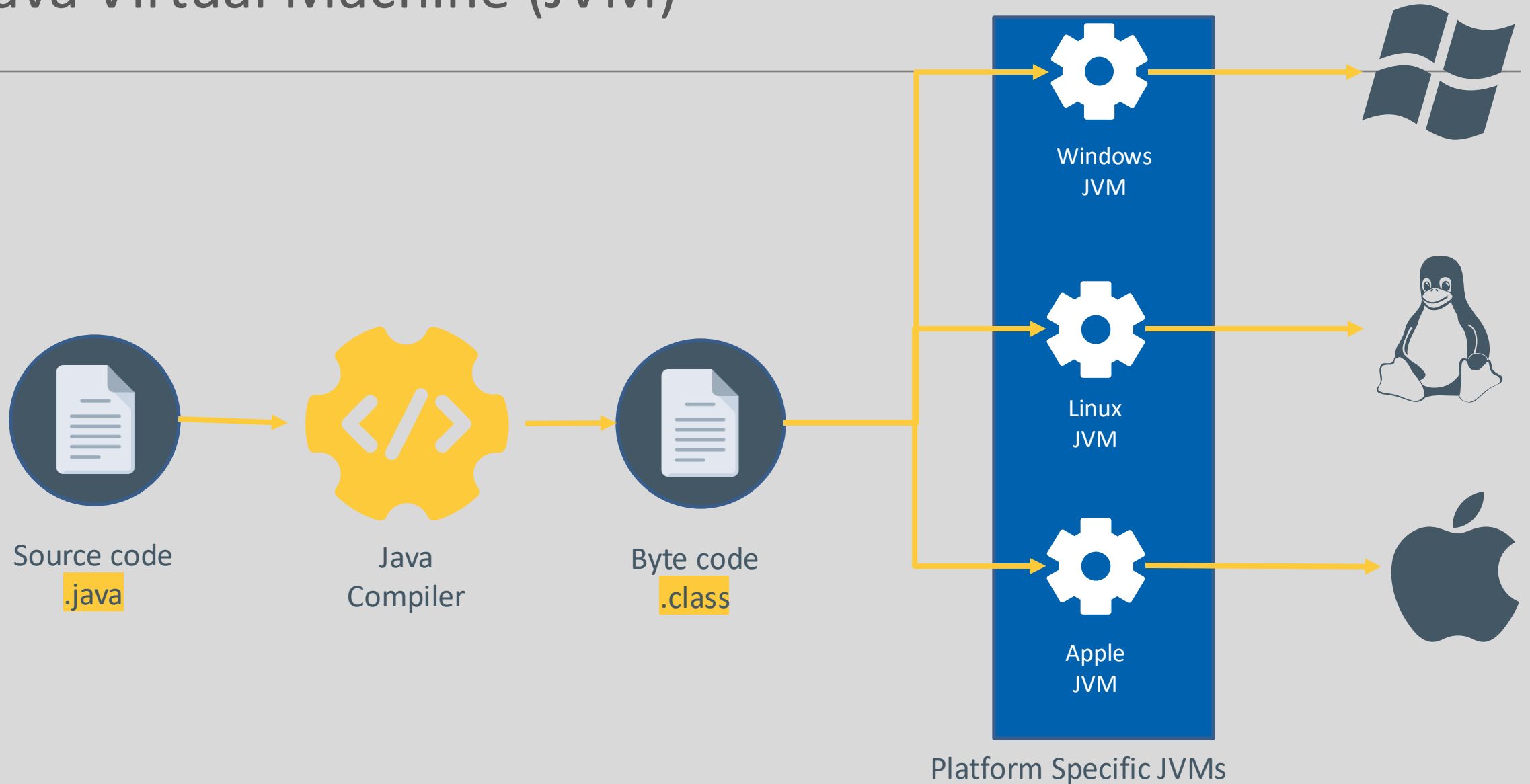
1. Files in Java.
2. Java Virtual Machine (JVM).
3. main() method.

Java Virtual Machine (JVM)

- Java Virtual Machine (**JVM**)
 - is a “**virtual**” computer that resides in the “real” computer as a software process.
 - E.g. JVM for windows, for OSX, Linux etc.
- The JVM gives Java the flexibility of **platform independence**.
- The **.class** files can be run on any OS, once a JVM has been installed
 - (NB: JVM is installed when you install the JDK).



Java Virtual Machine (JVM)



Topics list

1. Files in Java.
2. Java Virtual Machine (JVM).
3. `main()` method.

main() method

- When you want to run a java project, the Java Virtual Machine (JVM) invokes the **main()** method in the project.
- For the JVM to recognise it, the main() method must have a specific method **signature**.

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

main() method - signature

- “main” must exist
- “main” must be **public**
- “main” must be **static** (class method)
- “main” must have a **String array parameter**
- Only “main” can be invoked automatically.

```
public static void main(String[] args) {  
  
    System.out.println("Hello world!");  
  
}
```

The **main()** method typically...

```
public static void main(String[] args)
{
    Driver driver= new Driver() ;
    driver.runMenu() ;
}
```

Creates an object

Calls the first
method

Questions?

