

Understanding the JVM

JVM and the main method

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Topics list

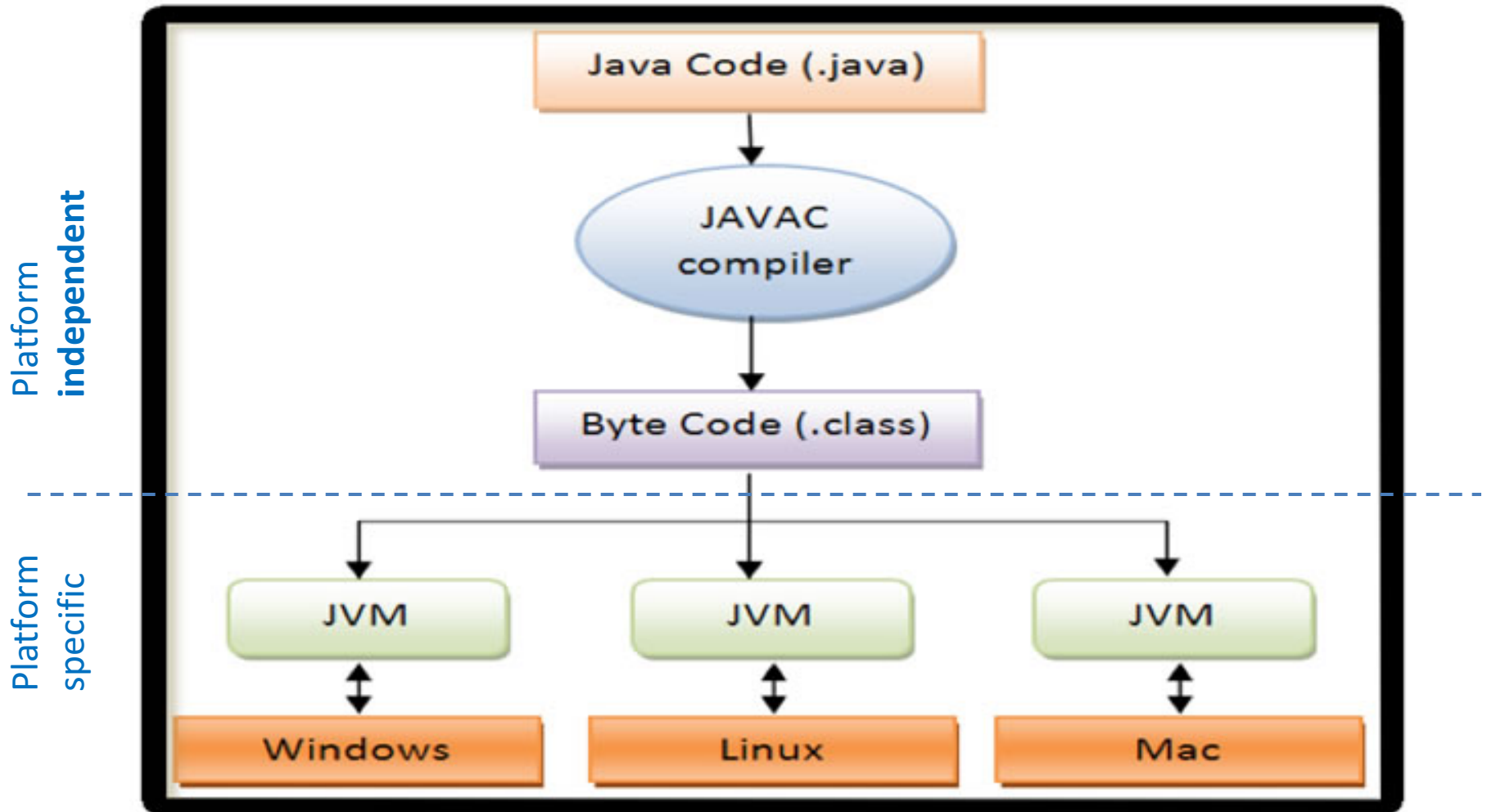
1. Files in Java.

2. Java Virtual Machine (**JVM**).

3. **main()** method.

4. Installing **JDK 9**.

Files in Java (1)



Files in Java (2)

- **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
 - is also known as “**byte code**”
 - it is 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*)

Topics list

1. Files in Java.

2. Java Virtual Machine (JVM).

3. main() method.

4. Installing JDK 9.

Java Virtual Machine (JVM)

- Java Virtual Machine (**JVM**)
 - is a “**virtual**” computer that resides in the “real” computer as a software process.
- 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).

Topics list

1. **Files** in Java.
2. Java Virtual Machine (**JVM**).
3. **main()** method.
4. Installing **JDK 9**.

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)
{
    ...
}
```

main() method


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

- The main method should
 - create an object
 - call the first method

Topics list

1. **Files** in Java.
2. Java Virtual Machine (**JVM**).
3. **main()** method.
4. Installing **JDK 9**.

What is a **JDK**?

- Java Development Kit (JDK).
- It includes **tools** for developing Java applications.
- It also includes a Runtime Environment (**JRE**) 
 - **JRE** is the implementation of the JVM.
 - It is a subset of the JDK
- Free from **Oracle** website.

Note

- If you are installing the JDK on a windows platform, **USE Internet Explorer!**
- There are **issues** with installing the JDK using the following browsers:
 - Firefox
 - Chrome
 - Microsoft Edge



Note

- If you are installing the JDK on the OSX platform, **USE Safari!**
- There are **issues** with installing the JDK using the following browsers:
 - Firefox
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NOTE: Mar 2018

we are using **JDK version 8**
in order to maintain compatibility
with content being delivered in the
Web Development module.

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future reference

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NetBeans with JDK 8

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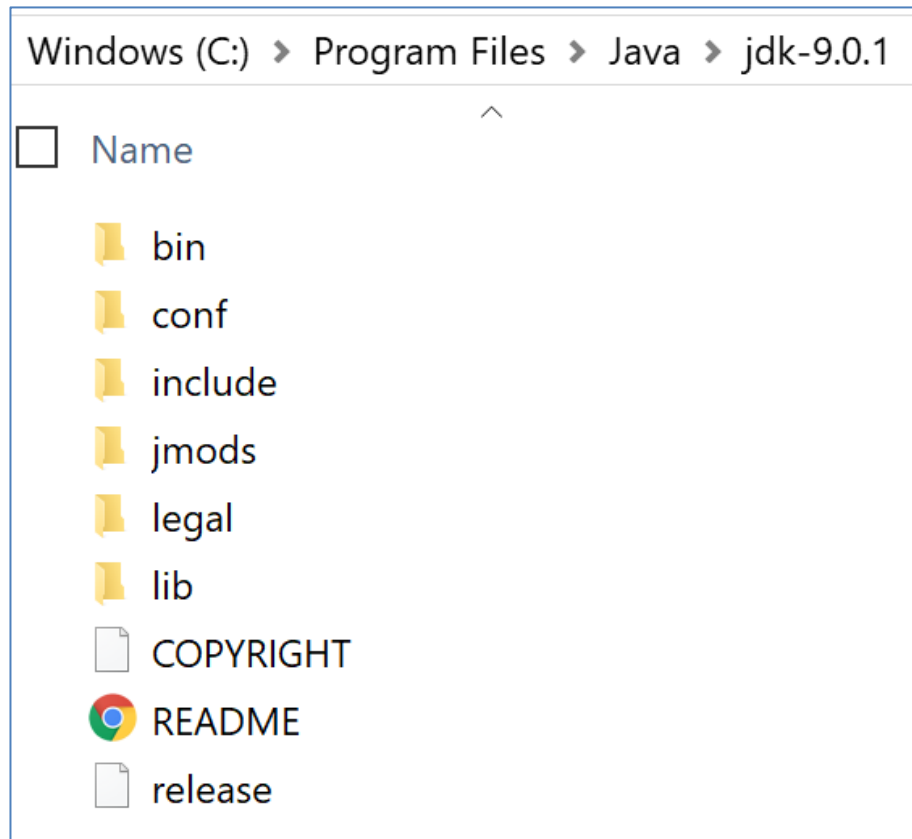
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