All jav file are in .java file

C, c++ give code to compiler: take entire file and convert to machine code 0 and 1

In java it is different

Java compiler convert the source code to byte code not machine code

Extension .class

When u complie java file u get .class file

This byte code will not be directly run on a system

We need jvm to run this and give machine code

So entire program compile to byte code and the byte code is interpreted line by line by jvm. This is reason java is platform indepent

More about platform independence:

It means byte code can run on all operating systems

Java code compile to byte code and this can run on window, linux, max

After complying c/c++ code we get .exe file which is platform dependent.

But if u done comile in window then u need to do recomplilation in mac,linux

Java is platform independent but jvm is platform dependent

JDK vs JRE vs JVM vs JIT:

Jdk=jre+development tool

Jre=jvm+library classes

Jvm

Jit

JDK:

Java development kit

It is package set of file u can download from internet.

It provides environment to develop and run the java program

It is a package that include

Development tools=to provide environment to develop your program

JRE- to excute a program

A compiler-javac

Archire-jar,interpreter/loader also have

JRE

It is an installation package that provide environment to only run program

It consists of

1. Deployment technology
2. User interface toolkit
3. integration libraries
4. Base libraries
5. Jvm

After we get .class file,the next things happen at runtime:

1.class loader loads all classes need to excute the program

2.jvm sends code to byte code verifier to check the format of code

JVM:interpreter byte code

Jvm contain the stack and heap memory allocation

When u have same blocks of code used in many part u do again and again process to convert to byte code so why we jit

JIT=just in time

Those method that are repeated JIT provide direct machine code so reinterpretation is not required maeks execution faster

Jdk convert source code to .class byte code by javac compiler and jvm convert it to excutable code that can be run by jre

What file need by jvm to do work jre provides