

# Lesson:



## Exception, imports, and modifiers in Java



## List of Concepts Involved:

- ClassNotFoundException vs NoClassDefFoundError
- Exception handling
- Java file structure,different types of import
- packages and its modifiers

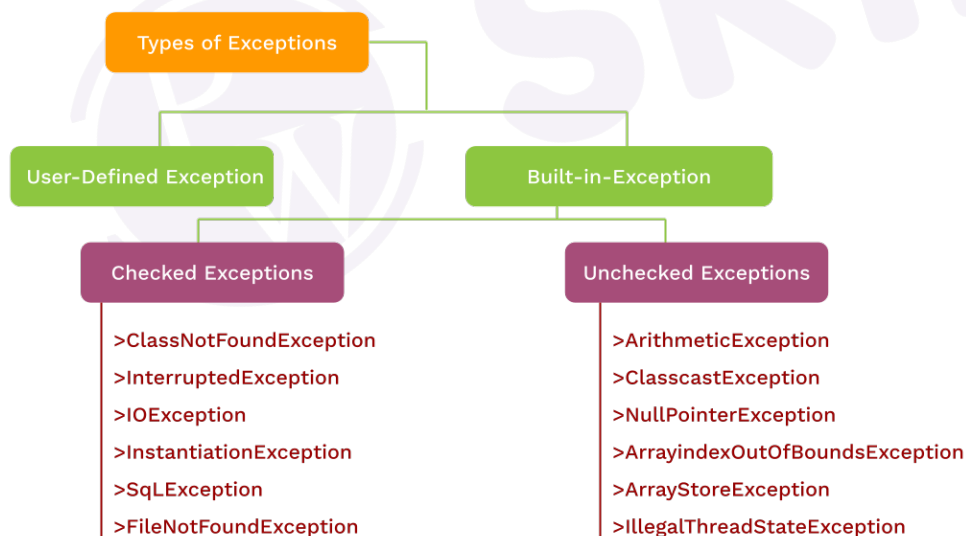
## ClassNotFoundException vs NoClassDefFoundError

- ClassNotFoundException and NoClassDefFoundError are the errors when JVM or ClassLoader are not able to find appropriate class while loading at run-time.
- ClassNotFoundException is a checked exception and NoClassDefFoundError is an Error which comes under unchecked.

## Exception handling

Exception handling in java is a mechanism to handle unwanted interruptions like exceptions and continue with the normal flow of the program.

Java uses try-catch blocks and other keywords like finally, throw, and throws to handle exceptions. JVM(Java Virtual Machine) by default handles exceptions, when an exception is raised it will halt the execution of the program and throw the exception.

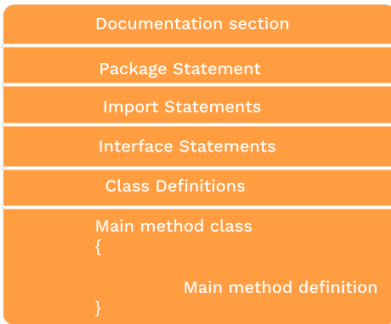


## Java file structure

A Java source code file normally has the following structure:

- package statement
- import statements
- class definition

If the name of the class defined in the file is A then the file must be named A.java.

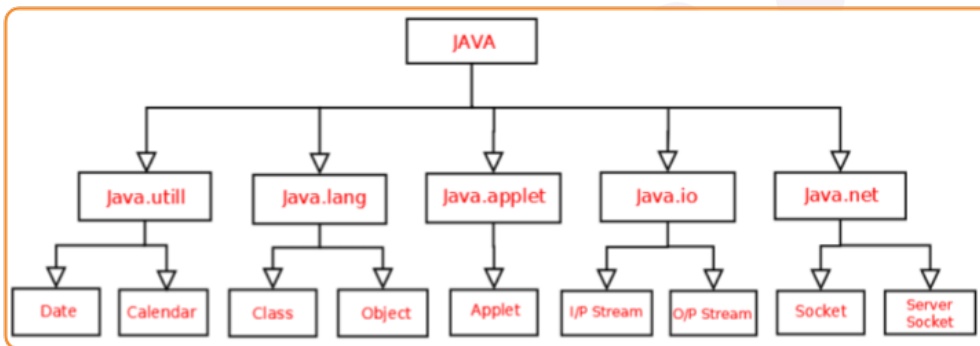


## packages and its modifiers

Packages can be built-in and user-defined, Java provides a rich set of built-in packages in the form of API that stores related classes and sub-packages.

**Built-in Package:** math, util, lang, i/o etc are the examples of built-in packages.

**User-defined-package:** Java packages created by users to categorise their project's classes and interface are known as user-defined packages.



## Access Modifiers in Java:

Access modifiers are keywords that can be used to control the visibility of fields, methods, and constructors in a class. The four access modifiers in Java are public, protected, default, and private.

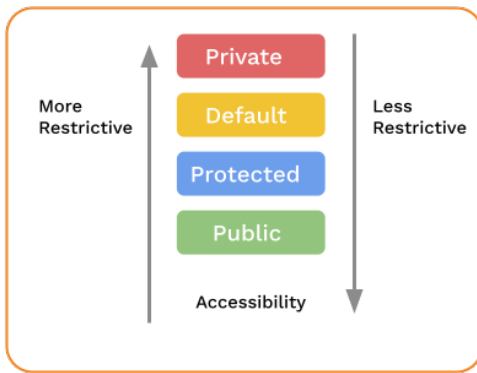
### Four Types of Access Modifiers

**Private:** We can access the private modifier only within the same class and not from outside the class.

**Default:** We can access the default modifier only within the same package and not from outside the package. And also, if we do not specify any access modifier it will automatically consider it as default.

**Protected:** We can access the protected modifier within the same package and also from outside the package with the help of the child class. If we do not make the child class, we cannot access it from outside the package. So inheritance is a must for accessing it from outside the package.

**Public:** We can access the public modifier from anywhere. We can access public modifiers from within the class as well as from outside the class and also within the package and outside the package.



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