V TEACHING-LEARNING ACTIVITIES

Note: Add a folder and name it as module2\_tla (tla means Teaching Learning Activities) before you commit your answer/document.

1. ENGAGE: Misconception Commit your answer/document on your remote repository that was shared to your instructor github account.

Misconception Check

In the past several years the technology evolved too fast and there’s a lot of updates in java versions that was developed and existing now. Select 2 versions of java and compare them in terms of features, advantages, and disadvantages.

* --**Java SE 7 feature -** Catching Multiple Exception Types and Rethrowing Exceptions with Improved Type Checking, Underscores in Numeric Literals, Type Inference for Generic Instance Creation.

**Advantages** – It is not so strict when it comes to running programs that was created using different computer or version.

**Disadvantages** - It has less features compare to other latest java version.

* --**java SE 14 features** - Helpful NullPointerExceptions, Records (Preview), Switch Expressions (Standard).

**Advantages** - you can use all other recent features from last version.

**Disadvantages** – It could be sometimes strict when running java programs that are not made by the same computer.

1. EXPLORE: API Specifications list 1. Enumerate at least 20 following API specifications of java, depending of the java version. Example: follow the format

JAVA version: Java™ Platform, Standard Edition 7

**Packages and Description**

1. [**[java.awt.color](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html)**](https://docs.oracle.com/javase/7/docs/api/java/awt/color/package-summary.html)[- Provides classes for color spaces.](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html)

[Class :](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html) [[ColorSpace](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html)](https://docs.oracle.com/javase/8/docs/api/java/awt/color/ColorSpace.html) [-  
This abstract class is used to serve as a color space tag to identify the specific color space of a Color object or, via a ColorModel object, of an Image, a BufferedImage, or a GraphicsDevice.](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html)

[Exception :](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html) [[CMMException](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html)](https://docs.oracle.com/javase/8/docs/api/java/awt/color/CMMException.html) [- This exception is thrown if the native CMM returns an error.](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html)

1. **[java.awt](https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html)** - Contains all of the classes for creating user interfaces and for painting graphics and images.

Interfaces - [ActiveEvent](https://docs.oracle.com/javase/7/docs/api/java/awt/ActiveEvent.html) - An interface for events that know how to dispatch themselves.

Classes - [AlphaComposite](https://docs.oracle.com/javase/7/docs/api/java/awt/AlphaComposite.html) - The AlphaComposite class implements basic alpha compositing rules for combining source and destination colors to achieve blending and transparency effects with graphics and images.

1. [**java.util.zip**](https://docs.oracle.com/javase/7/docs/api/java/util/zip/package-summary.html) - Provides classes for reading and writing the standard ZIP and GZIP file formats.

CLASS: [*Adler32*](https://docs.oracle.com/javase/7/docs/api/java/util/zip/Adler32.html)- A class that can be used to compute the Adler-32 checksum of a data stream.

Exception: [*DataFormatException*](https://docs.oracle.com/javase/7/docs/api/java/util/zip/DataFormatException.html) - Signals that a data format error has occurred.

1. **javax.management.loading** - Provides the classes which implement advanced dynamic loading.

Interface: [ClassLoaderRepository](https://docs.oracle.com/javase/7/docs/api/javax/management/loading/ClassLoaderRepository.html) - Instances of this interface are used to keep the list of ClassLoaders registered in an MBean Server.

Class: [DefaultLoaderRepository](https://docs.oracle.com/javase/7/docs/api/javax/management/loading/DefaultLoaderRepository.html)- Deprecated

Use [MBeanServer.getClassLoaderRepository()](https://docs.oracle.com/javase/7/docs/api/javax/management/MBeanServer.html" \l "getClassLoaderRepository())} instead.

1. [**java.awt.event**](https://docs.oracle.com/javase/7/docs/api/java/awt/event/package-summary.html) - Provides interfaces and classes for dealing with different types of events fired by AWT components.

Packages: [java.applet](https://docs.oracle.com/javase/7/docs/api/java/applet/package-summary.html) - Provides the classes necessary to create an applet and the classes an applet uses to communicate with its applet context.

1. **javax.naming** - Provides classes and interface relating to fonts.

Interface: [Name](https://docs.oracle.com/javase/7/docs/api/javax/naming/Name.html) - The Name interface represents a generic name -- an ordered sequence of components.

Class: [BinaryRefAddr](https://docs.oracle.com/javase/7/docs/api/javax/naming/BinaryRefAddr.html) - This class represents the binary form of the address of a communications end-point.

1. **java.security** - Provides the classes and interfaces for the security frameworkClass: [AffineTransform](https://docs.oracle.com/javase/8/docs/api/java/awt/geom/AffineTransform.html).

Interface : [AlgorithmConstraints](https://docs.oracle.com/javase/7/docs/api/java/security/AlgorithmConstraints.html) - This interface specifies constraints for cryptographic algorithms, keys (key sizes), and other algorithm parameters.

Class: [AccessControlContext](https://docs.oracle.com/javase/7/docs/api/java/security/AccessControlContext.html) - An AccessControlContext is used to make system resource access decisions based on the context it encapsulates.

Exception: [AccessControlException](https://docs.oracle.com/javase/7/docs/api/java/security/AccessControlException.html) This exception is thrown by the AccessController to indicate that a requested access (to a critical system resource such as the file system or the network) is denied.

1. **imageio.stream** - A package of the Java Image I/O API dealing with low-level I/O from files and streams.

Interface: [ImageInputStream](https://docs.oracle.com/javase/7/docs/api/javax/imageio/stream/ImageInputStream.html)– A seekable input stream interface for use by ImageReaders.

Class: [FileCacheImageInputStream](https://docs.oracle.com/javase/7/docs/api/javax/imageio/stream/FileCacheImageInputStream.html) - An implementation of ImageInputStream that gets its input from a regular InputStream.

1. **javax.activation**

Interface : [CommandObject](https://docs.oracle.com/javase/7/docs/api/javax/activation/CommandObject.html) - JavaBeans components that are Activation Framework aware implement this interface to find out which command verb they're being asked to perform, and to obtain the DataHandler representing the data they should operate on.

Class : [ActivationDataFlavor](https://docs.oracle.com/javase/7/docs/api/javax/activation/ActivationDataFlavor.html) - The ActivationDataFlavor class is a special subclass of java.awt.datatransfer.DataFlavor.

Exception : [MimeTypeParseException](https://docs.oracle.com/javase/7/docs/api/javax/activation/MimeTypeParseException.html) - A class to encapsulate MimeType parsing related exceptions.

1. [**java.awt.print**](https://docs.oracle.com/javase/7/docs/api/java/awt/print/package-summary.html) - Provides classes and interfaces for a general printing API.

Interface: [Pageable](https://docs.oracle.com/javase/8/docs/api/java/awt/print/Pageable.html) -   
The Pageable implementation represents a set of pages to be printed.

Class: [Book](https://docs.oracle.com/javase/8/docs/api/java/awt/print/Book.html) - The Book class provides a representation of a document in which pages may have different page formats and page painters.

Exception: [PrinterAbortException](https://docs.oracle.com/javase/8/docs/api/java/awt/print/PrinterAbortException.html) - The PrinterAbortException class is a subclass of [PrinterException](https://docs.oracle.com/javase/8/docs/api/java/awt/print/PrinterException.html" \o "class in java.awt.print) and is used to indicate that a user or application has terminated the print job while it was in the process of printing.

1. **java.util.concurrent.locks** - Interfaces and classes providing a framework for locking and waiting for conditions that is distinct from built-in synchronization and monitors.

Interface : [Condition](https://docs.oracle.com/javase/7/docs/api/java/util/concurrent/locks/Condition.html) - Condition factors out the Object monitor methods ([wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html#wait()), [notify](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html#notify()) and [notifyAll](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html" \l "notifyAll())) into distinct objects to give the effect of having multiple wait-sets per object, by combining them with the use of arbitrary [Lock](https://docs.oracle.com/javase/7/docs/api/java/util/concurrent/locks/Lock.html) implementations.

Class : [AbstractOwnableSynchronizer](https://docs.oracle.com/javase/7/docs/api/java/util/concurrent/locks/AbstractOwnableSynchronizer.html) - A synchronizer that may be exclusively owned by a thread.

1. **Package javax.crypto.interfaces** - Provides interfaces for Diffie-Hellman keys as defined in RSA Laboratories' PKCS #3.

Interface : [DHKey](https://docs.oracle.com/javase/7/docs/api/javax/crypto/interfaces/DHKey.html) - The interface to a Diffie-Hellman key.

1. **javax.lang.model.util** - Utilities to assist in the processing of [program elements](https://docs.oracle.com/javase/7/docs/api/javax/lang/model/element/package-summary.html) and [types](https://docs.oracle.com/javase/7/docs/api/javax/lang/model/type/package-summary.html).

Interface : [Elements](https://docs.oracle.com/javase/7/docs/api/javax/lang/model/util/Elements.html) - Utility methods for operating on program elements.

Class : [ElementFilter](https://docs.oracle.com/javase/7/docs/api/javax/lang/model/util/ElementFilter.html) - Filters for selecting just the elements of interest from a collection of elements.

1. **javax.management.timer** - Provides the definition of the Timer MBean.

Interface : [TimerMBean](https://docs.oracle.com/javase/7/docs/api/javax/management/timer/TimerMBean.html) - Exposes the management interface of the timer MBean.

Class : [Timer](https://docs.oracle.com/javase/7/docs/api/javax/management/timer/Timer.html) - Provides the implementation of the timer MBean.

1. **javax.net** - Provides classes for networking applications.

Class : [ServerSocketFactory](https://docs.oracle.com/javase/7/docs/api/javax/net/ServerSocketFactory.html) - This class creates server sockets.

1. **javax.print.attribute.standard** - Package javax.print.attribute.standard contains classes for specific printing attributes.

Class : [Chromaticity](https://docs.oracle.com/javase/7/docs/api/javax/print/attribute/standard/Chromaticity.html) - Class Chromaticity is a printing attribute class, an enumeration, that specifies monochrome or color printing.

1. **javax.script** - The scripting API consists of interfaces and classes that define Java TM Scripting Engines and provides a framework for their use in Java applications.

Interface : [Bindings](https://docs.oracle.com/javase/7/docs/api/javax/script/Bindings.html) - A mapping of key/value pairs, all of whose keys are Strings.

Class : [AbstractScriptEngine](https://docs.oracle.com/javase/7/docs/api/javax/script/AbstractScriptEngine.html) - Provides a standard implementation for several of the variants of the eval method.

Exception : [ScriptException](https://docs.oracle.com/javase/7/docs/api/javax/script/ScriptException.html) - The generic Exception class for the Scripting APIs.

1. **javax.sound.midi** - Provides interfaces and classes for I/O, sequencing, and synthesis of MIDI (Musical Instrument Digital Interface) data.

Interface : [ControllerEventListener](https://docs.oracle.com/javase/7/docs/api/javax/sound/midi/ControllerEventListener.html) - The ControllerEventListener interface should be implemented by classes whose instances need to be notified when a Sequencer has processed a requested type of MIDI control-change event.

Class : [Instrument](https://docs.oracle.com/javase/7/docs/api/javax/sound/midi/Instrument.html) - An instrument is a sound-synthesis algorithm with certain parameter settings, usually designed to emulate a specific real-world musical instrument or to achieve a specific sort of sound effect.

Exception : [InvalidMidiDataException](https://docs.oracle.com/javase/7/docs/api/javax/sound/midi/InvalidMidiDataException.html) - An InvalidMidiDataException indicates that inappropriate MIDI data was encountered.

1. **javax.sql.rowset** - Standard interfaces and base classes for JDBC RowSet implementations.

Interface : [CachedRowSet](https://docs.oracle.com/javase/7/docs/api/javax/sql/rowset/CachedRowSet.html) - The interface that all standard implementations of CachedRowSet must implement.

Class : [BaseRowSet](https://docs.oracle.com/javase/7/docs/api/javax/sql/rowset/BaseRowSet.html) - An abstract class providing a RowSet object with its basic functionality.

Exception : [RowSetWarning](https://docs.oracle.com/javase/7/docs/api/javax/sql/rowset/RowSetWarning.html) - An extension of SQLException that provides information about database warnings set on RowSet objects.

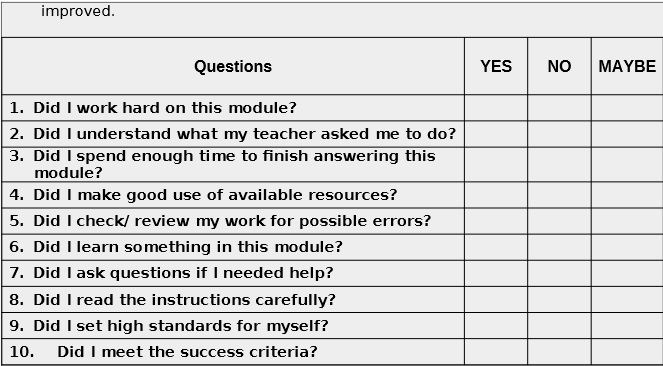
1. **javax.tools** - Provides interfaces for tools which can be invoked from a program, for example, compilers.

Interface : [FileObject](https://docs.oracle.com/javase/7/docs/api/javax/tools/FileObject.html) - File abstraction for tools.

Class : [SimpleJavaFileObject](https://docs.oracle.com/javase/7/docs/api/javax/tools/SimpleJavaFileObject.html) - Provides simple implementations for most methods in JavaFileObject.

E.EVALUATE

Self-Assessment. Kindly check (✔) the box of your answer for each question. In this way, we will be able to assess how much we have learned and what are the things that needs to be



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