**Group Member:**

Ammar Nasir (181400026)

Arass Nawaz (181400119)

Arooj Adnan (181400009)

Assignment: 2

# Refactoring in Eclipse IDE:

Refactoring is a technique used to rebuild existing software. Modern IDEs have many built-in features to help us achieve these kinds of refactoring objectives and many others.

# Techniques For Refactoring:

Refactoring can be done using following methods:

# Renaming:

We can **rename variables and methods by following these simple steps:**

* + Select the element
  + Right-click the element
  + **Click the *Refactor > Rename* option**
  + Type the new name
  + Press *Enter*

We can also perform the second and third steps by **using the shortcut key, Alt+Shift+R***.*

When the above action is performed, Eclipse will find every usage of that element in that file and replace them all in place.

We can rename a package by selecting the package name and performing the same actions as in the previous example. A pop-up will appear right away where we can rename the package, with options like updating references and renaming sub-packages.

We can rename a class or interface by using the same actions or just by pressing F2 from Project Explorer. This will open up a pop-up with options to update references, along with a few advanced options.

# Extracting:

Now, let's talk about extraction. Extracting code means **taking a piece of code and moving it.** Now, suppose we want to extract out the driver details to a different class. We can do this by **right-clicking anywhere within the class and choosing the**Refactor > Extract Class**option.** We can extract an interface by **right-clicking anywhere within the class and choosing the**Refactor > Extract Interface**option,**or we can use the **Alt+Shift+T** shortcut key command to bring up the menu directly.

We may want to extract the non-employment-related properties to a Person superclass. To extract items to a superclass, we can **right-click anywhere in the class and choose the**Refactor > Extract Superclass**option, or use Alt+Shift+T** to bring up the menu directly.

To invoke the *Extract Method* wizard, we need to perform the following steps:

* Select the lines of code we want to extract
* Right-click the selected area
* Click the Refactor > Extract Method option

and we want to extract it to a local variable.

To do this, we need to:

* Select the item
* Right-click and choose Refactor > Extract Local Variable

# In-lining:

To do this, we follow these steps:

* Select the item we want to inline
* Right-click and choose the Refactor > Inline option

**The last step can also be achieved by keyboard shortcut Alt+Shift+I*:***

# Push Down and Pull Up:

For moving methods down to child classes, we need to right-click anywhere in the class and choose the **Refactor > Push Down** option.

Similarly, for moving methods from a child class to parent class, we need to **right-click anywhere in the class and choose Refactor > Pull Up.**

# Changing a Method Signature:

To change the method signature of an existing method, we can follow a few simple steps:

* Select the method or place the cursor somewhere inside
* Right-click and choose**Refactor > Change Method Signature**

The last step can also be achieved by keyboard shortcut**Alt+Shift+C*.***

# Moving

Sometimes, we simply want to **move methods to another existing class to make our code more object-oriented.**

 We can easily move this calculation logic in Eclipse:

* Select the lines you want to move
* Right-click and choose the***Refactor > Move* option.**

The last step can also be achieved by keyboard shortcut**Alt+Shift+V:**