Applications Programming

Pre-Lab Exercise: IDE Installation

Starting from week 8, you will learn to develop GUI applications in Java and Python. This will involve the use of advanced features of Java and Python that go beyond the capabilities of ED and BlueJ.

In this pre-lab exercise, you will learn to install and use NetBeans for Java programming, a more powerful IDE (Integrated Development Environment). This is available from the Red Hat applications menu under the Programming sub-menu on all FEIT Linux lab machines. You are also encouraged to install NetBeans on your own PC or laptop. There are two files for NetBeans installation:

1. Download the Java Development Kit version 8 (JDK 8) from http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

2. Download the latest NetBeans IDE from https://netbeans.apache.org/download/index.html

Make sure to install Java 8 instead of other latest version.

This is because the components supporting GUI programming(JavaFX) are removed from the JDK package after Java 11. To support the following GUI programming labs, JavaFX is required to be downloaded and installed separately running on the platform later than Java 8. If you have installed other JDK version other than Java 8, please download and install Java 8 as the primary Java platform used in IDE and OS.

The advantage of downloading the JDK separately is that you will be able to try alternative Java development environments on top of this JDK. It is also important to understand the difference between the JDK (Java Development Kit) and the JRE (Java Runtime Environment). The JDK provides the tools required to develop Java programs such as the compiler. The JRE contains only what is necessary for the end user to run a Java program, so the compiler is not included. As a developer, you need the JDK.

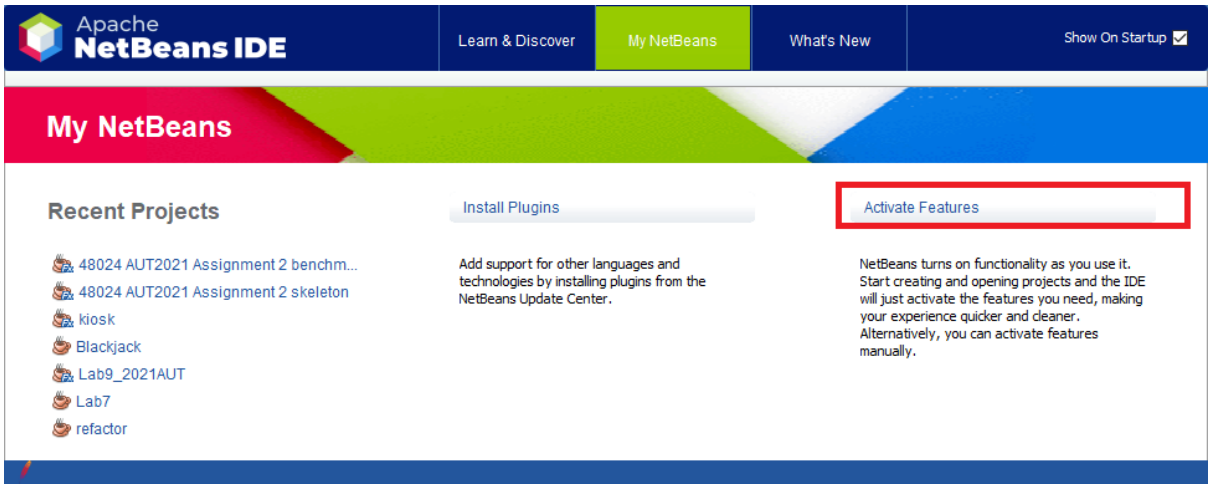
Some students may have already experimented with other non-BlueJ IDEs such as Eclipse, IntelliJ and even programmer's editors such as Vim, Sublime Text and Atom. If you did, that's great! You are free to continue to use your preferred alternative to BlueJ for the rest of semester, provided that it supports Java 8, and that it allows you to create non-Java files within your project, such as XML files, CSS files, JPG files etc.

However, for this exercise, the purpose is to become familiar with NetBeans. The lab instructions show you how to create a project in NetBeans, import files, edit and refactor code, and create a JAR file to submit to Canvas. These instructions assume you are using a Linux workstation in UTS Building 11. Steps may differ slightly if you are using Windows or MacOS.

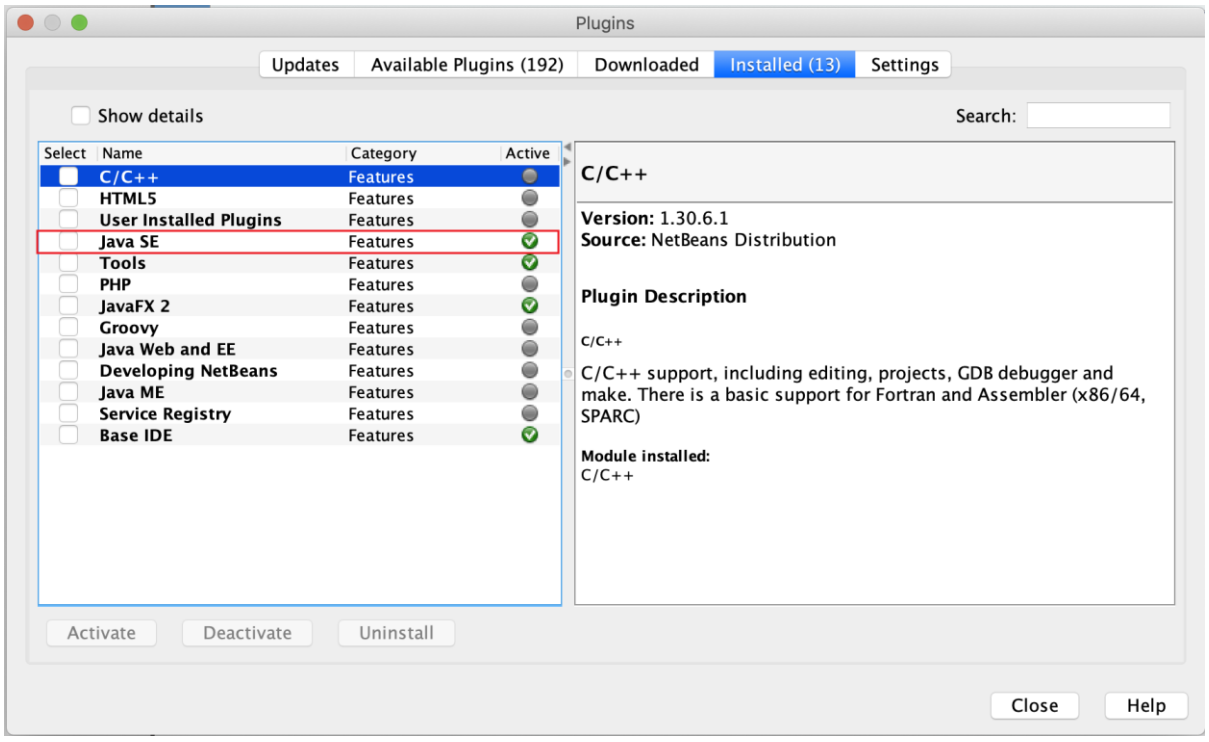
NetBeans Crash

If your NetBeans flashes out when activating features, it is probably due to the installation of the late Java version other than Java 8. To set Java 8 as the default platform for NetBeans, you need to check Java Platform Manager.

1. **Activate Java Platform Manager**

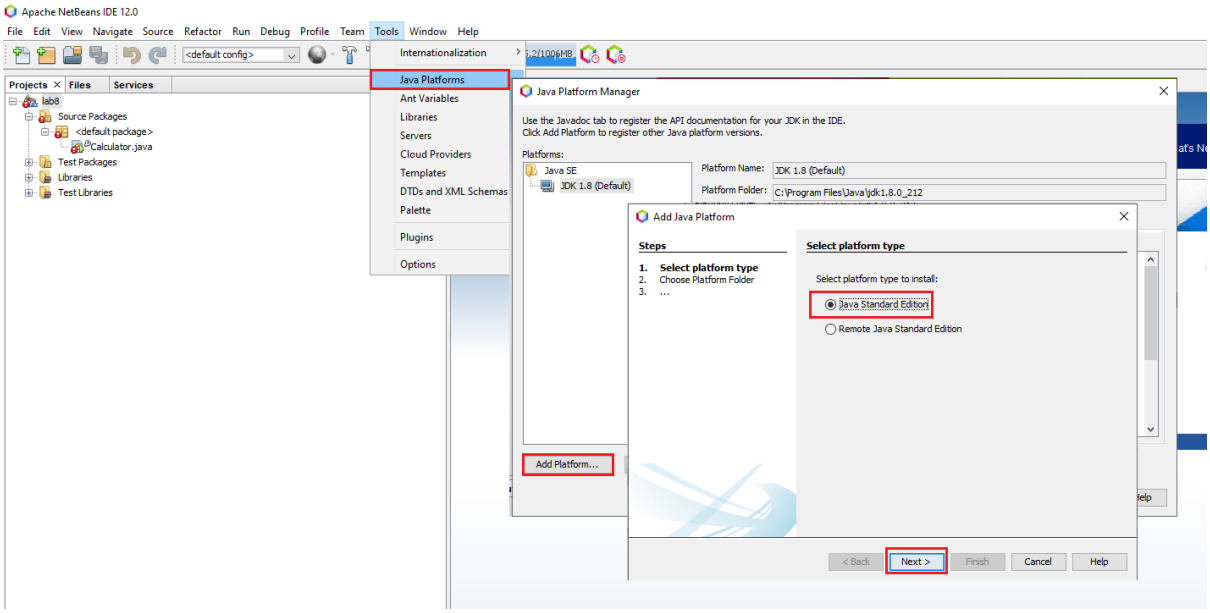


Here, click on the Installed tab, and you will see this screen.



You need to activate Java SE to show the Java Platform Manager.

2. **Add Java 8 into NetBeans**



You should be able to find the JDK 1.8 under path "C:\Program Files\Java\jdk1.8.0_66"(you may have different jdk version name, it should be fine.)

Please remember the path for later use.

Make sure you have JDK 1.8 as a platform option in Java Platform Manager.

3. **Make Java 8 as the default platform to activate JavaFX features.**

   You need to go the path: C:\Program Files\NetBeans 8.2\etc
   and you need to change the netbeans.conf

   In line 57 (in mine) you see something like this:

   ```
   netbeans_jdkhome="C:\Program Files\Java\jdk1.8.0_66"
   ```

   Change the Path to your installed JDK 1.8 file path.

   Please watch the video [NetBeans on Big Sur] for detailed demonstration.

4. Now please restart NetBeans, you should be able to activate the editing features and the JavaFX support libraries.

When Java features limited window pops up, please select "Install nb-javac" instead of upgrading JDK to later version.