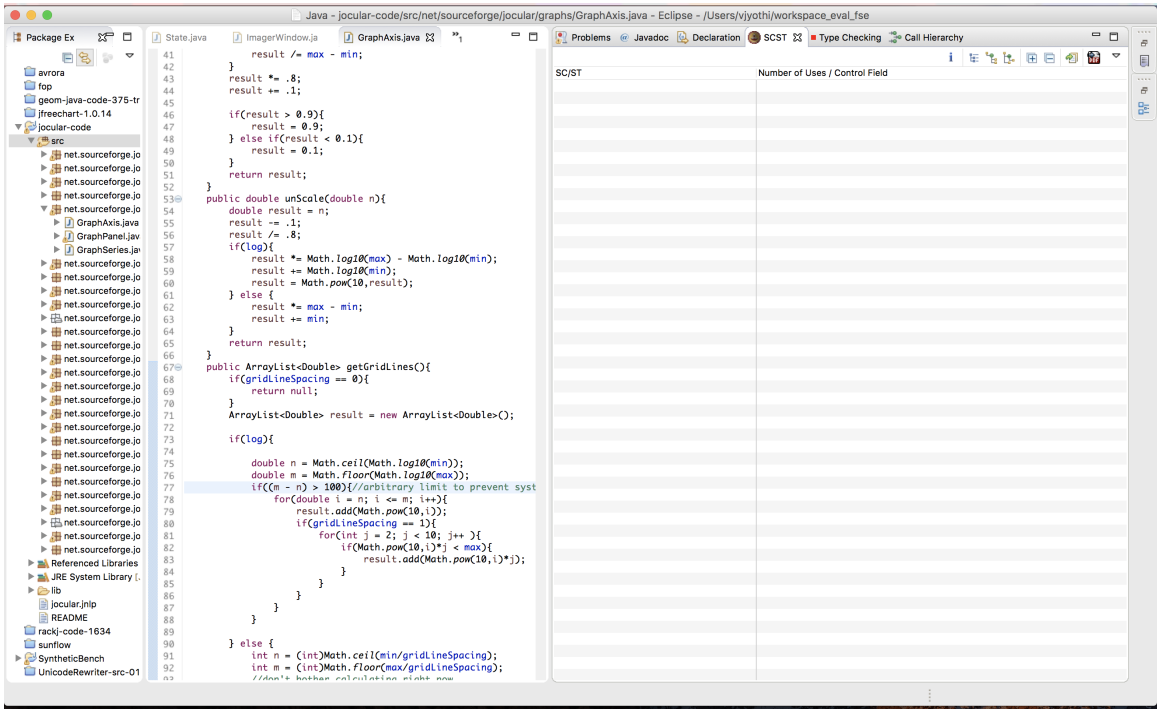
Auto-SCST

About Auto-SCST :
Auto-SCST is a user guided automatic refactoring Eclipse plug-in. It performs "Replace Type Code with State (ST)/Replace Type Code with Subclass (SC)" refactoring followed by "Replace Conditional with Polymorphism" refactoring (RCP).
It follows a 3 phase refactoring approach:

1. Identifying refactoring opportunities automatically.
2. Collecting developers choice(s) such as the selection of the refactoring opportunity to apply refactoring and subclasses' names.
3. Automatic Refactoring.

Installation Steps :

1. Download the plug-in (jar file) and move to the plugins folder of your Eclipse application.
2. Start your Eclipse from command line using command "./Eclipse -vmargs -Xmx4000m -Xms512m". You can choose the parameters according to your machine's configuration. You can also set these parameter in the configuration file of Eclipse.
3. A new entry SCST will be added to the menu bar of your Eclipse.
4. Click on SC/ST Refactoring item in the drop down list to see a new tab (view) on your editor.



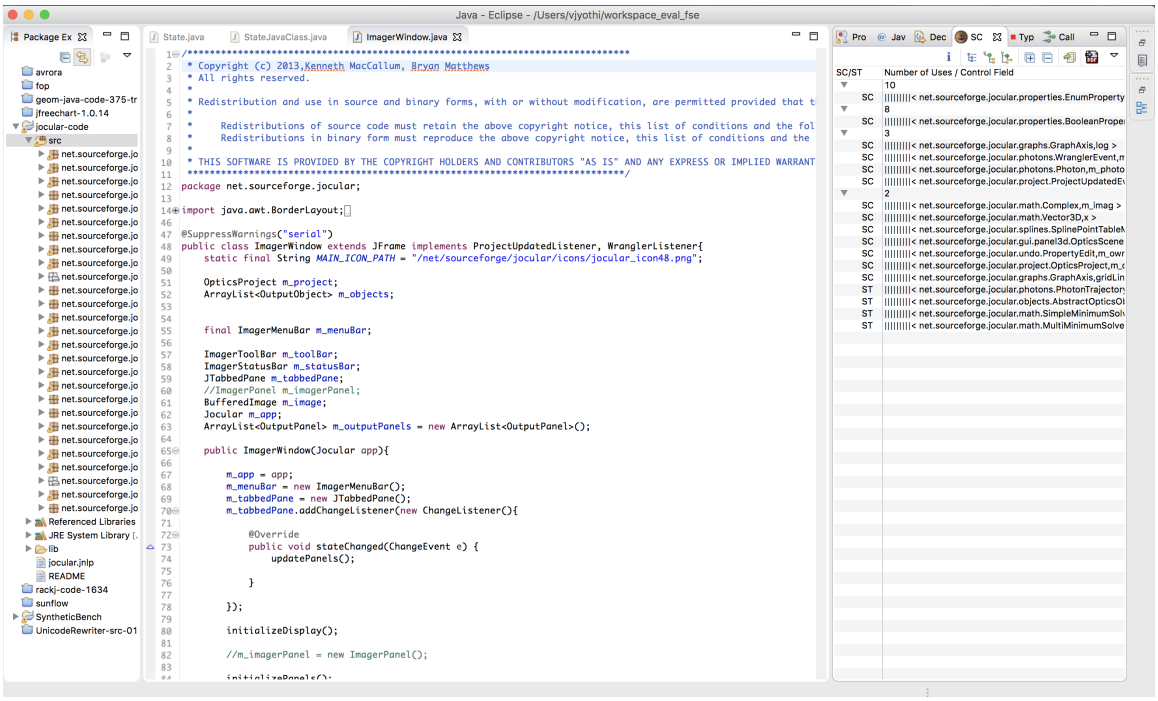
Options in Auto-SCST

1. Identification of refactoring opportunities:

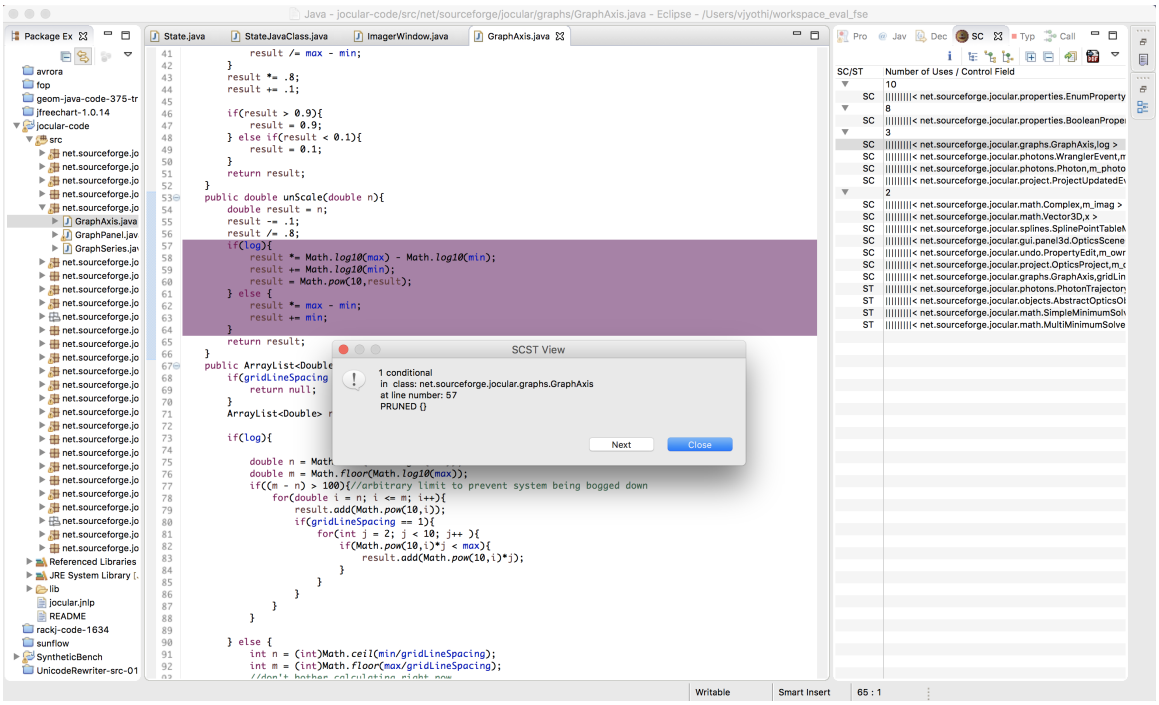
   i Select the src folder or the any source package of your Java project on which you want to apply RCP refactoring.

   ii Click on the "i" button in the tab to start the identification step.

   iii Results are displayed in the tab after the identification is done.



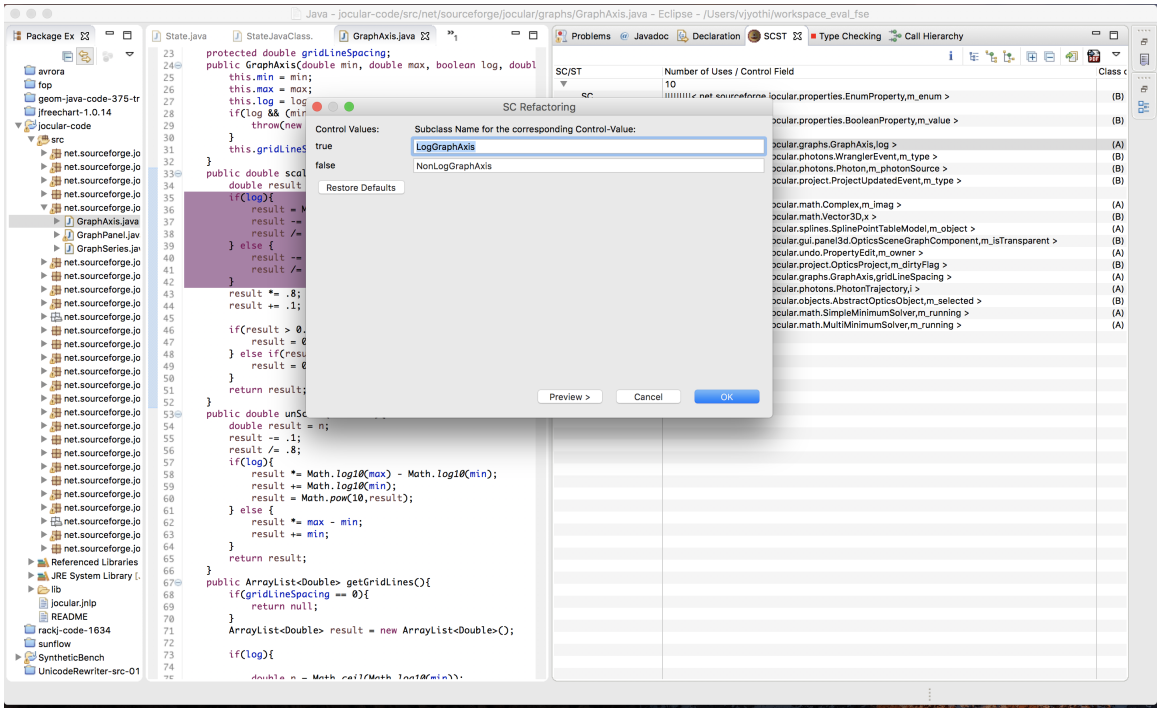
   iv Double-click on any entry in the displayed list to see all the conditional (IF/SWITCH) statements associated with the refactoring opportunity.



2. Developer's intervention:

   i You can select any entry in the list and click on refactoring button in the tab to apply the RCP refactoring.

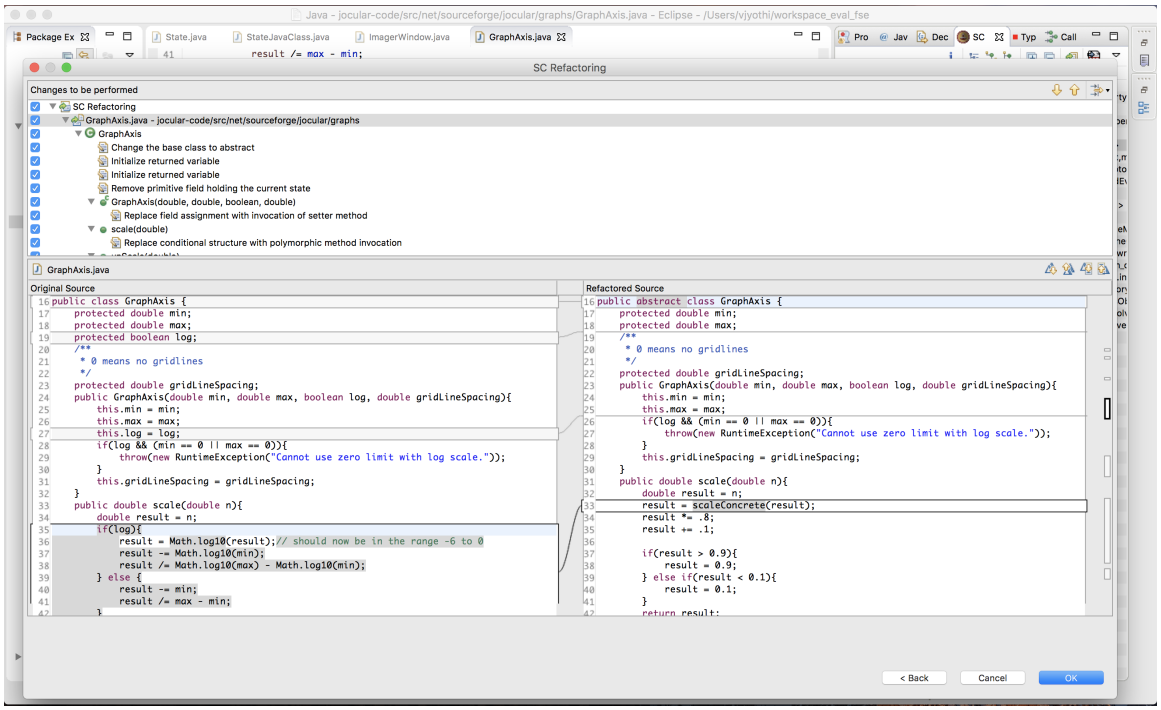
   ii Choose your own subclass names or the default names provided by Auto-SCST.



3. Refactoring:

   i Click on “Preview” button to see the set of changes that will be made on the code if refactoring is applied.

   ii Click on “OK” button to apply the RCP refactoring.



Note: (1) The tool may throw some errors when tested on new projects (other than tested benchmarks) if the projects use many external libraries. (2) You may need to restart your eclipse after each run of the tool. The tool is still a prototype implementation and can easily be extended to handle all cases.