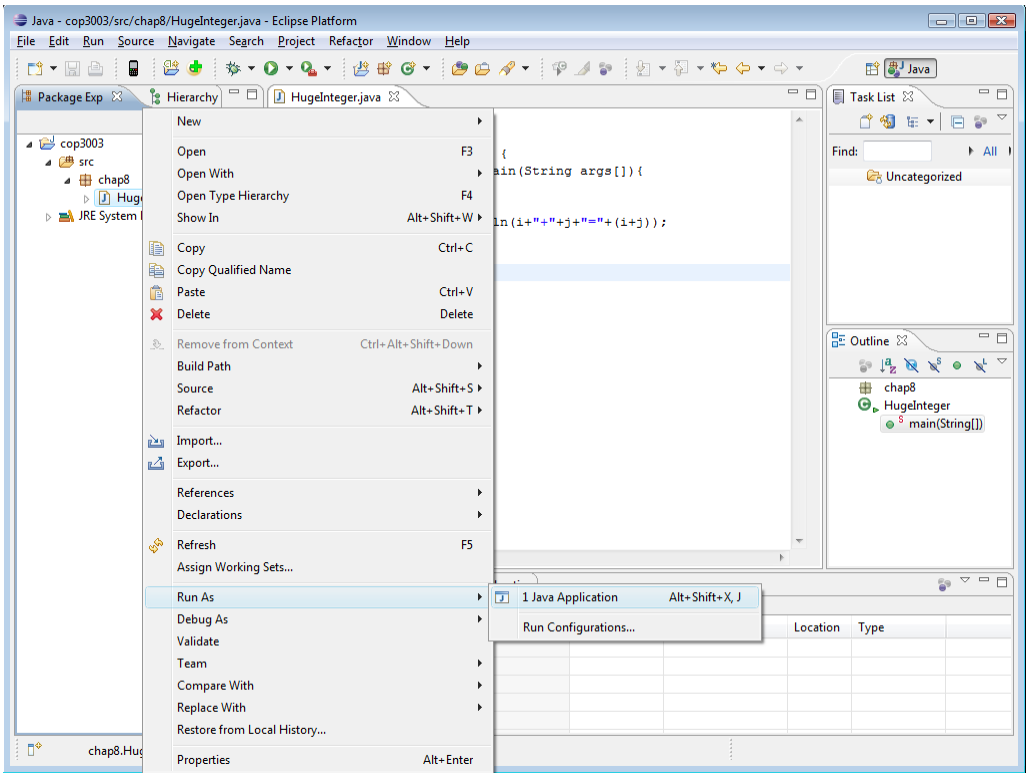
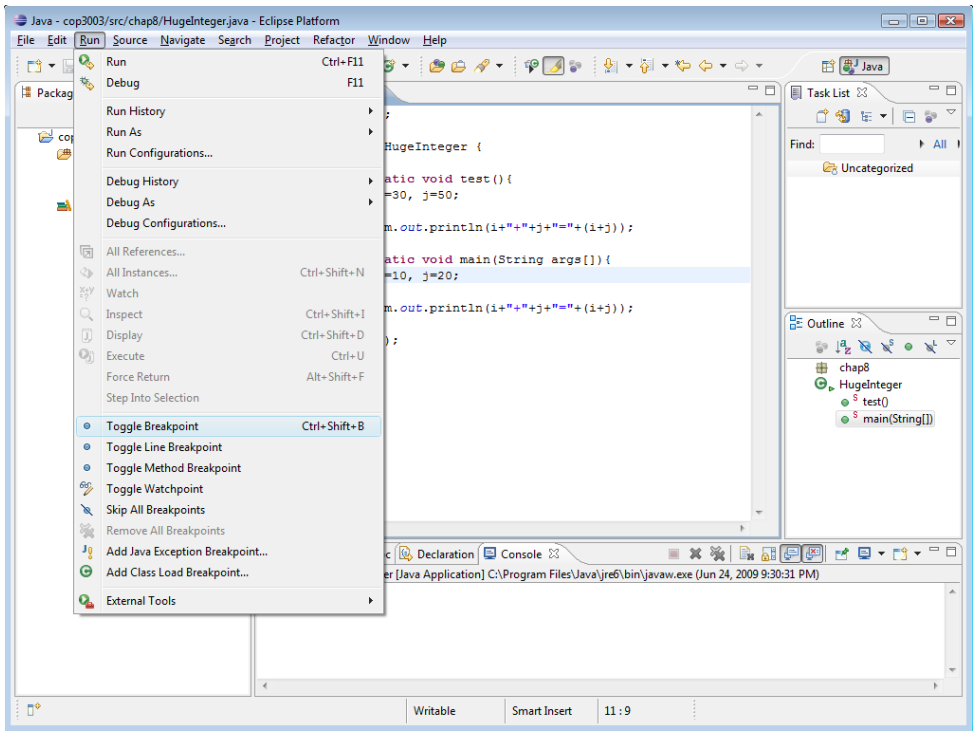
1. To run your program, right-click the program and select “Run As → Java Application”



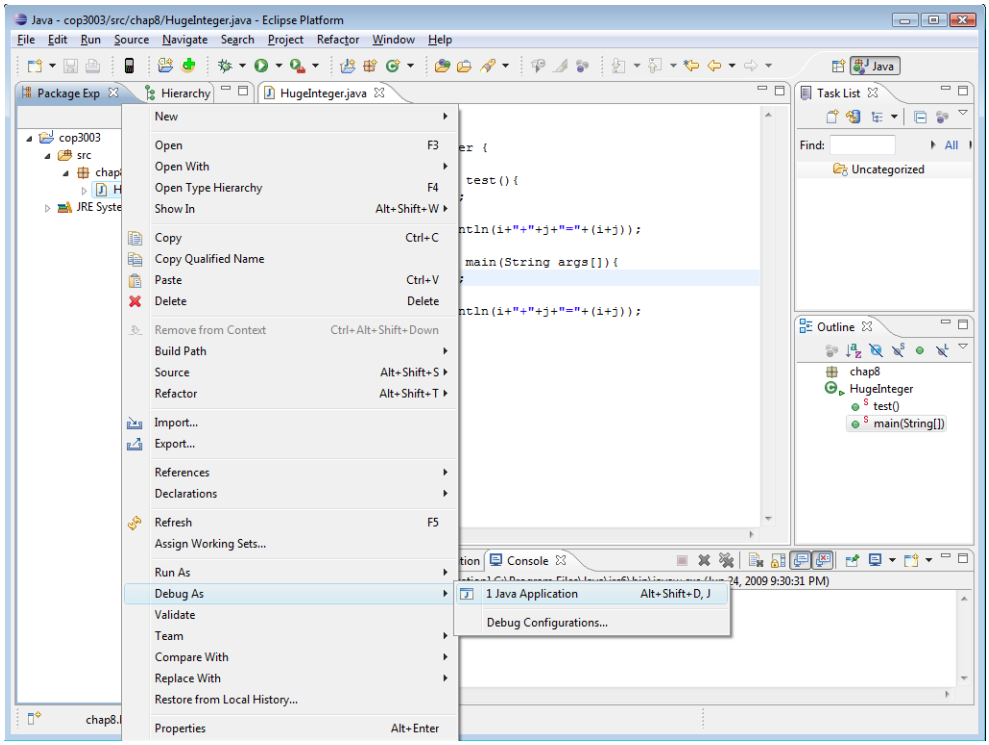
2. Then you should be able to see the output is in the lower part of the eclipse window.

3. Before showing how to debug programs, you need to know some common debugging functions
    a) Step over: when debugging a program, there is a pointer that indicates which line is being executed. “Step over” is to advance the pointer by only one line.
    b) Step into: if the pointer is at a method call, “Step over” will treat it as one line. However, “Step into” can let you debug the method body.
    c) Step return: when debugging a method, sometimes you want to return without reaching the end of the method in a line-by-line way because you are sure that nothing is wrong in the rest of the method. In this case you can choose “step return” to advance the pointer to the end of the method and therefore leave the method.
    d) Toggle a break point: It is often that you want to advance the pointer to a certain line. If this is the case, you can set a break point at that line and later choose “resume” to run the program and stop at your break point. You can set as many break points as needed.

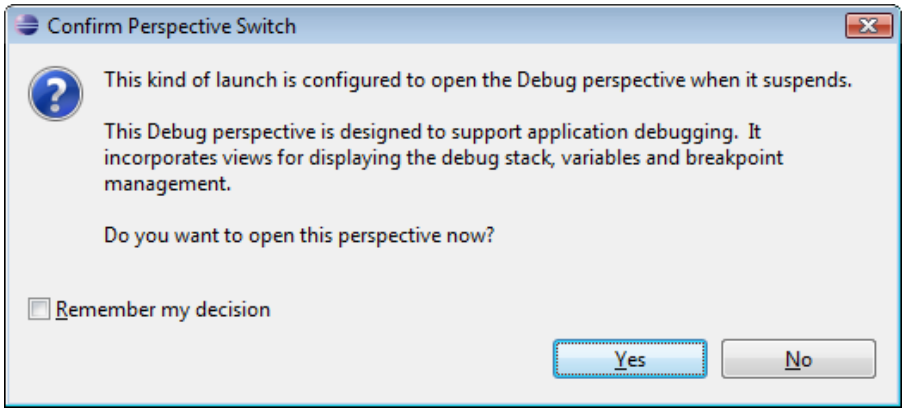
4. Now, please move the cursor to where you want to set the first break point and go to "Run->Toggle Line Breakpoint".



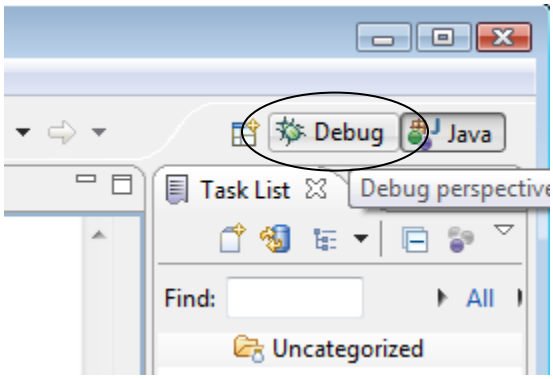
5. Now we are ready start the debugging. Right-click the file and Select "Debug As → Java Application".



6. Sometimes, eclipse will ask if you want to switch to the debug perspective. Click "Yes". It is to give you another view where you can monitor the values of variables.



7. If eclipse neither asks you nor gives the debug perspective automatically, you can select the debug perspective in the right-top corner.

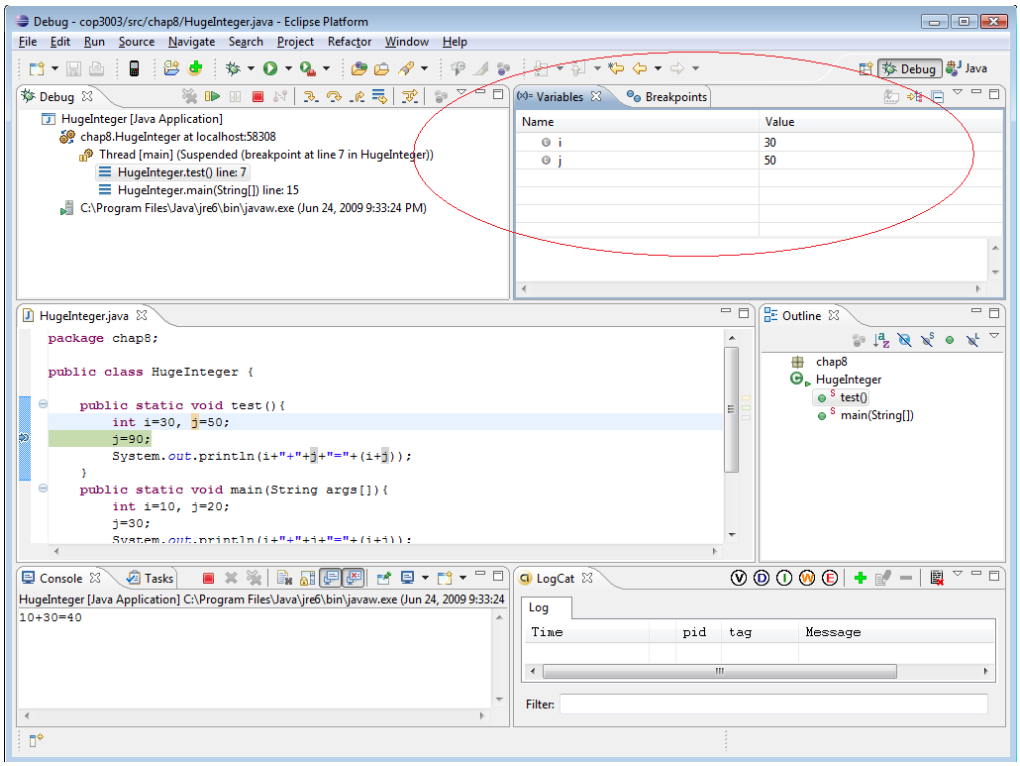


Java perspective is for editing your program.

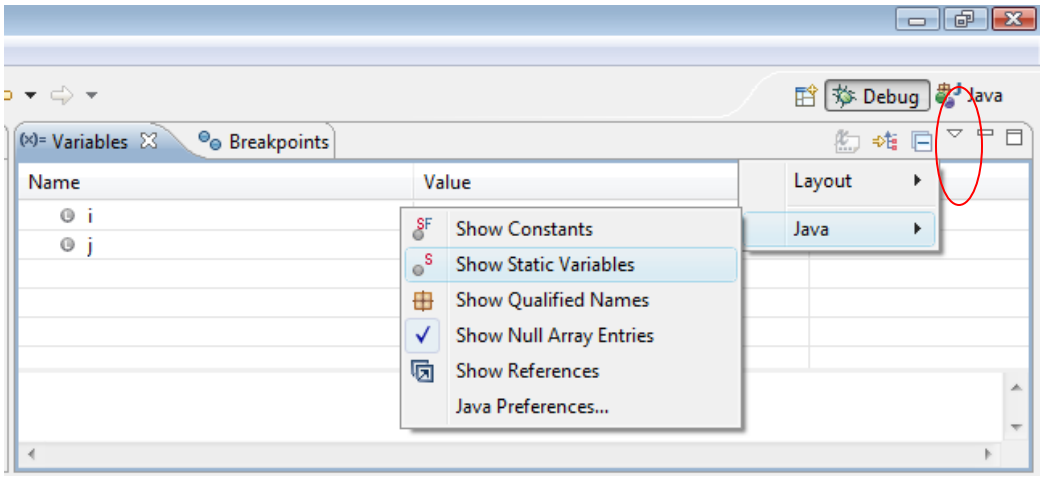
8. Ok, now you are ready to use the introduced debugging functions to debug your program. These debugging functions can be found in the menu item of Run. Or you can use the following hot keys
    a) F5: step into
    b) F6: step over
    c) F7: step return
    d) F8: resume
    e) Control-Shift-B: Toggle a break point

9. In the debugging mode, you can monitor the values of the in-scope variables. Normally, the watch window is in the right-top part of the debug perspective. This is another important part of any debugger. In a short program, it may not be

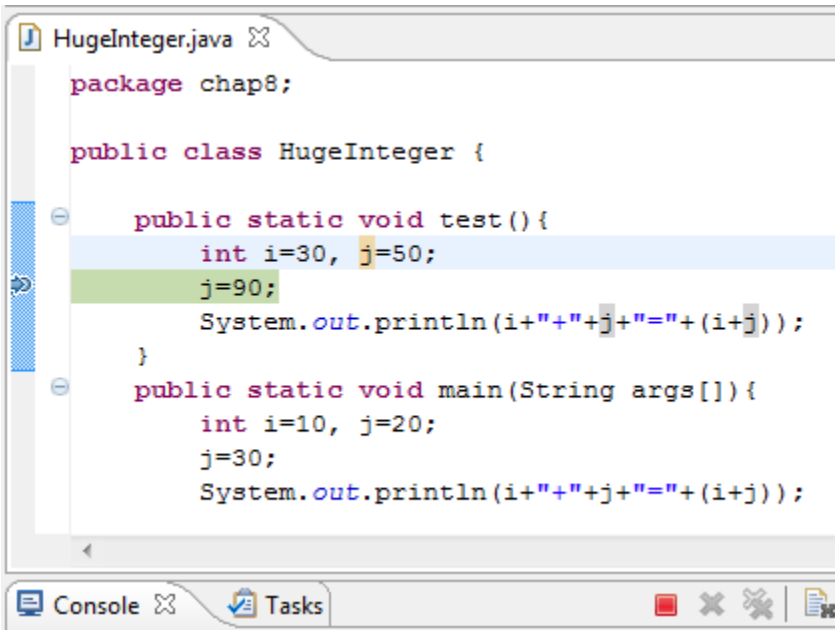
necessary to use the watch window. But when the program gets complex, monitoring variables at debugging can be very helpful.



10. Sometimes, the watch window does not show certain types of variables, such as static variables. This can be changed by click the upside-down triangle symbol and make the change in the pop-up window.



11. In the debugging mode, there is a small arrow that indicates which line is going to be executed in the next.



12. In order to stop the debugger, go to Run->Terminate.