ASys

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Starting Guide

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¿What is ASys?

ASys is a software tool for the semi-automatic evaluation and assessment of Java exercises and exams.

It allows for loading an exercise and its solution. Then, a sophisticated analysis process produces a report describing all errors detected, which can be compilation errors, runtime (test-based) errors, and design errors (unfulfillment of the exercise requirements).

¿How can I get a copy of ASys?

ASys is free. It can be downloaded by clicking on the following link of the Universitat Politècnica de València:

http://www.dsic.upv.es/~jsilva/ASys/

¿What do I need to install ASys?

ASys itself was implemented in Java. Therefore, it can be used in any platform that supports Java.

ASys is distributed as a ZIP file that contains a JAR file that can be directly executed using the Java virtual machine (JVM). Hence, JVM is the only requirement to execute ASys.

¿How do I install and execute ASys?

Unzip the ZIP file and the following structure will be created:

/ASys/ASys/…
/ASys/ASys.jar

Double-clicking on ASys.jar will start the program.

¿How do I load a new exercise?

To load a new exercise you need:

- <u>The exercise</u>, which is often created by teachers. You can also find examples of exercises at the ASys website.
- <u>A solution or set of solutions for the exercise (often implemented by the students).</u>

An ASys exam is often distributed as a ZIP file. When it is unzipped it generates the following structure:

/Name of the exercise/Exercise/…
/Name of the exercise/Projects/Marked/
/Name of the exercise/Projects/Unmarked/

Folders Marked and Unmarked are initially empty.
You must place the solution(s) to the exercise in the Unmarked folder, each of which should be in a different folder.
When ASys finishes assessing an exercise it moves this exercise from the Unmarked to the Marked folder.

Once you have unzipped the exam and introduced your solution in the Unmarked folder, to load the exam just click on:

Mark exercises ➜ Load exercise…

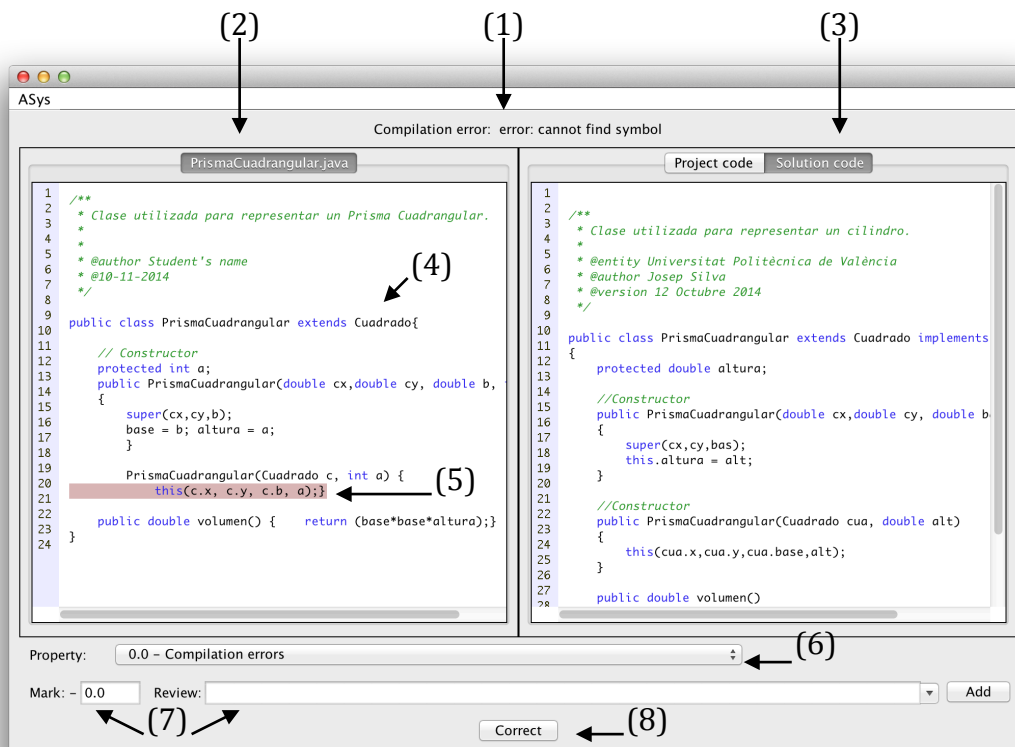and select the folder with the exam (Name of the exam).

¿How do I assess an exercise?

Once you have loaded an exercise, you can start the assessment by clicking on the button:

then, you will see the following window:

(1) Error message: Errors detected by ASys in the code of the student are shown here. There are three kinds of errors:

Compilation errors: The message produced by the compiler is shown. If you leave the mouse over the text, more information is given.

Property errors: The exercise does not satisfy some property (specified in the exam). For instance: *Class A should implement interface B, but it implements interface C*.

Testing errors: The exercise does not pass some test case (at runtime).

(2) Working copy window: The code with the solution given by the student is shown here. The corrections introduced by the user to solve the errors identified by ASys are also made here.

(3) Original code window: The code with the actual (correct) solution to the exercise is shown here (*Solution code*). The code with the initial (possibly wrong) solution of the student is shown here (*Project code*).

(4) Classes: At any moment, you can control+click (command+click in Mac) on the name of a class to show it.

(5) Error colouring: The source of the error detected by the compiler is automatically coloured to highlight it.

(6) Property: An exam contains a set of properties that must be satisfied. Each detected error is associated to one property. The teacher (when creating the

exam) specifies some properties. Other properties such as "*compilation error*" are introduced by the system.

(7) Mark and reason: In these textboxes you can insert a (negative) mark associated with the error detected and with the property selected. Each mark is associated with a reason (review) for this mark. By pressing on the "*Add*" button you can include more than one mark for the same property. Obviously, it is not possible to reduce the mark beyond the amount of points assigned to that property.

(8) Correct: You should press on the "*Correct*" button each time you have solved the current error detected by ASys (you can do this, e.g., looking at the solution on the right pannel) and you have (optionally) assigned a mark to this error.

¿Where can I find the report about the assessment done?

Once the assessment has been finished, the system saves information about all of the assessed exercises.

The folder:

/Name of the Exercise/Projects/Marked/

contains the original exercises.

The folder:

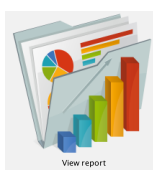/Name of the Exercise/Exercise/Solution/

contains the solution of the exercise.

The folder:

/Name of the Exercise/Projects/Marks/

contains a report with all the marks, and also, for each assessed exercise, a text file with the marks and the annotations taken while assessing, together with the solution produced when assessing.

In addition, in the main menu, option View Report

View report

you can find a table with the marks generated for each solution in each question of the exercise. By double-clicking on one of the rows of the table, you can open a window with the annotations associated with this solution (it can be also opened by pressing space after having selecting the solution).

This window allows for searching and filtering. At any moment, the table shown can be saved in a file by pressing the Save marks report button.