KV Special Topics in Software Engineering:
Object-oriented Programming in Delphi

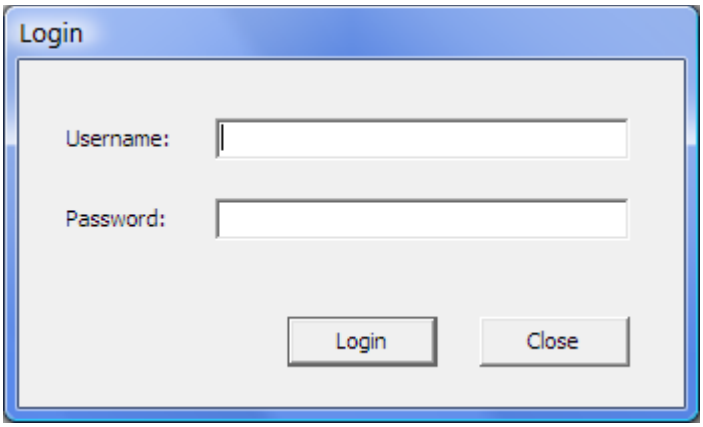
Prof. Hristo Krushkov

Project / User Interface Description

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Login-Screen

When the application starts, the Login-Screen is shown.

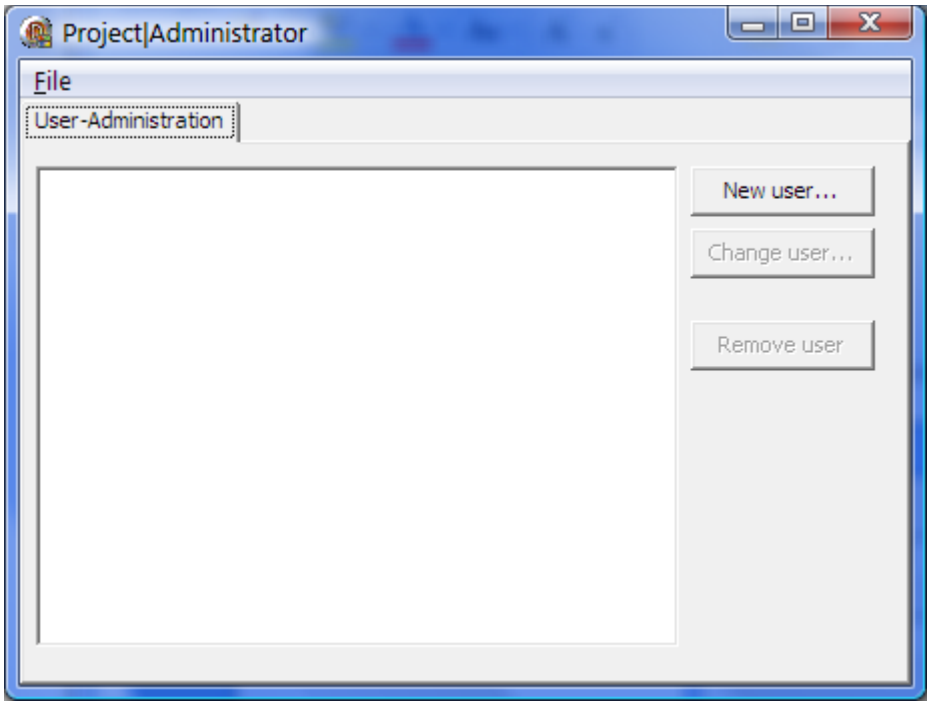


The users name in this application is unique, so the application decides depending on the username the next view of the application (Admin, Teacher or Student View). The administrator account is hard coded in the application. It is set to the username “admin” and the password “admin”.

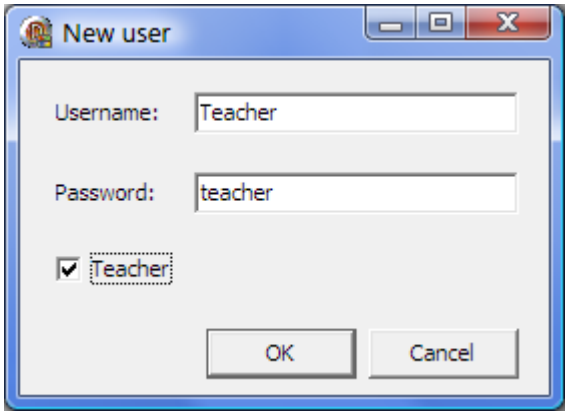
The application checks incorrect inputs (e.g. not existing user or wrong password) and gives appropriate error messages. All inputs are case sensitive.

Admin-View

When the administrator logs into the application, the Admin-View is shown.

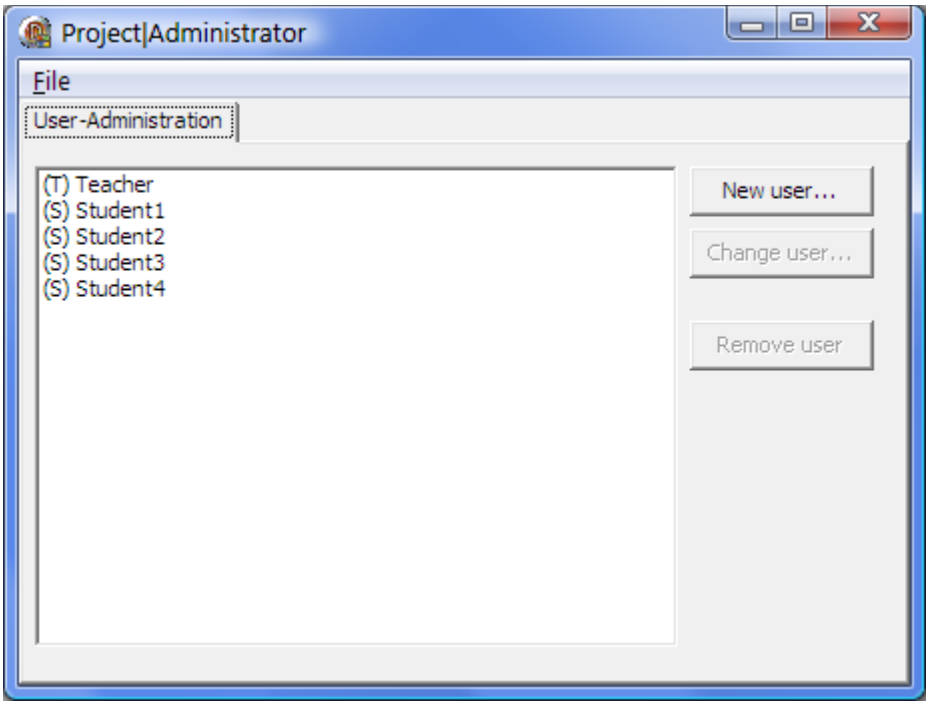


The only part in the Admin-View is the user administration, where user can be created, updated and removed. If a student user is changed (i.e. the name of the user) or deleted, the result data are also automatically updated. The whole application works like a database, which means, that no save and open is necessary, all data are saved automatically.



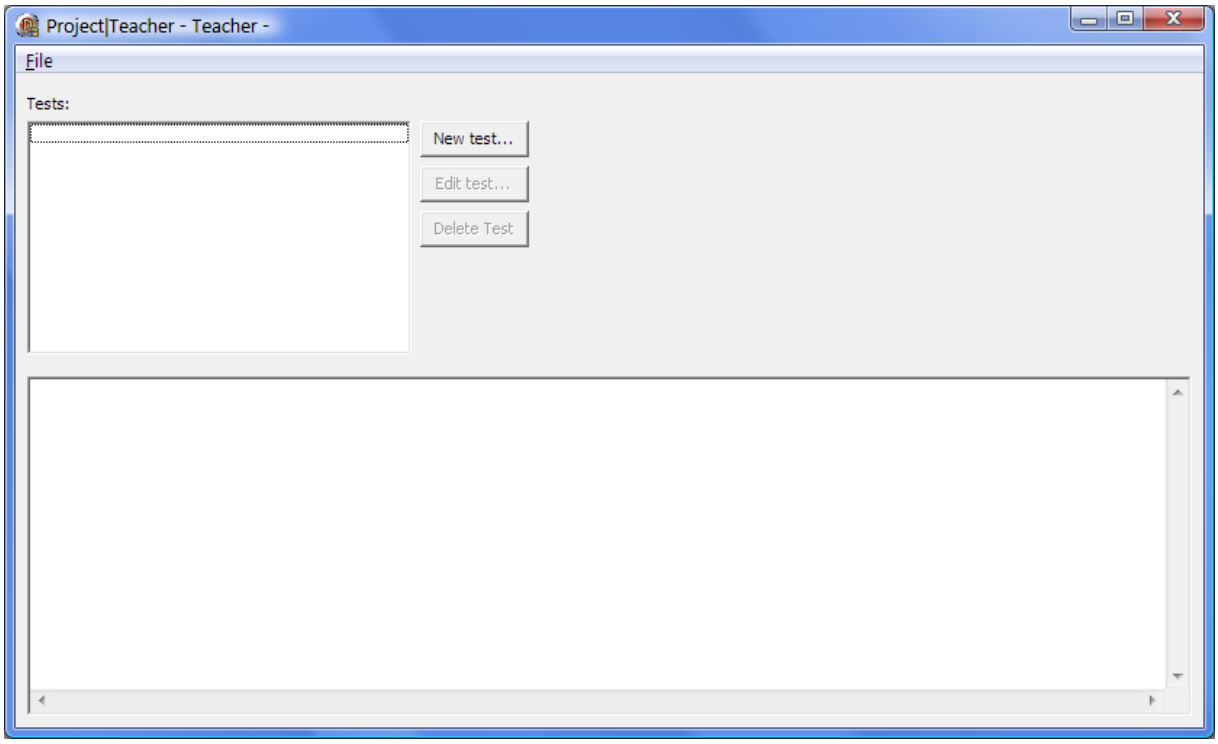
The dialog for adding a new user includes the username, the password and a flag if the user is a teacher; otherwise the user is a student (i.e. administrator account(s) could not be changed in the program itself). Again, the user data are case sensitive and the usernames are unique in the program (checked by the application).

The ListBox in the user administration shows the existing users. Each line begins with an identifier if a user is a teacher (T) or a student (S) followed by the username.

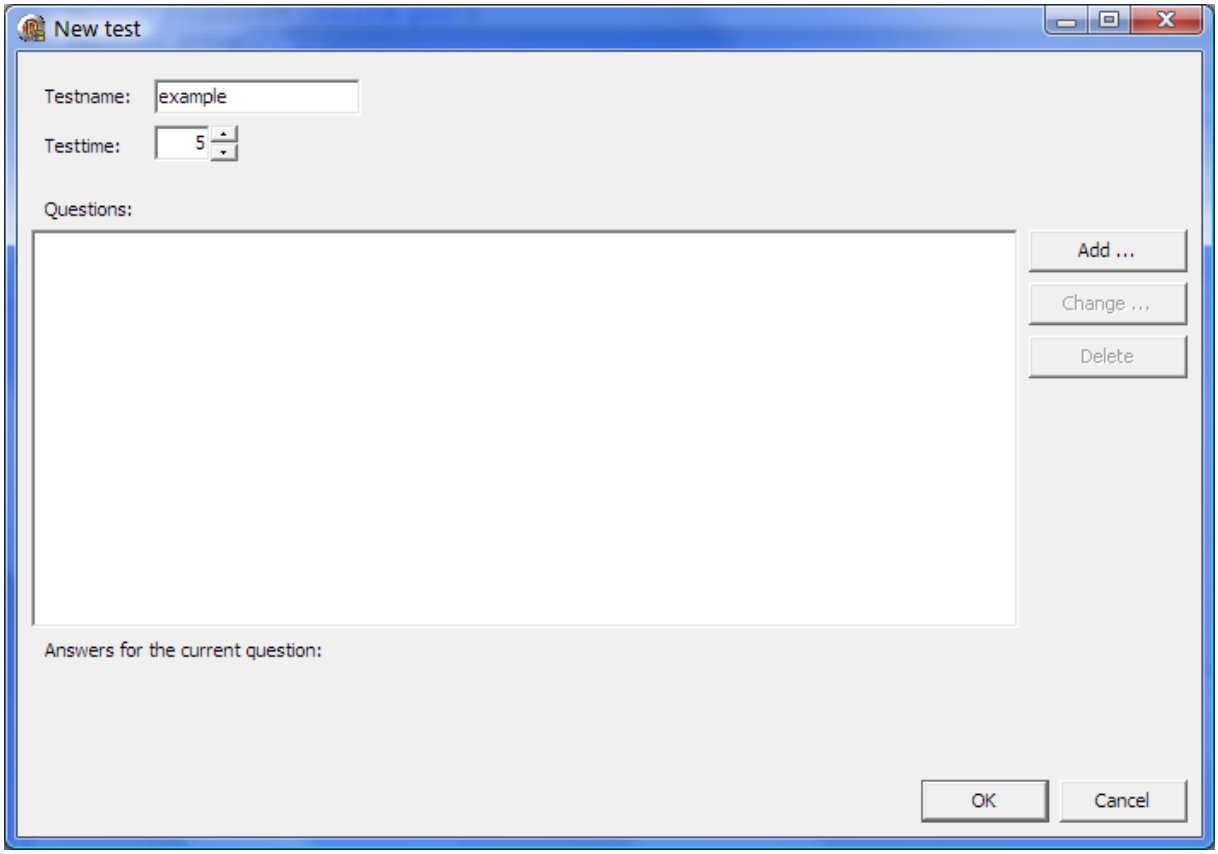


Teacher-View

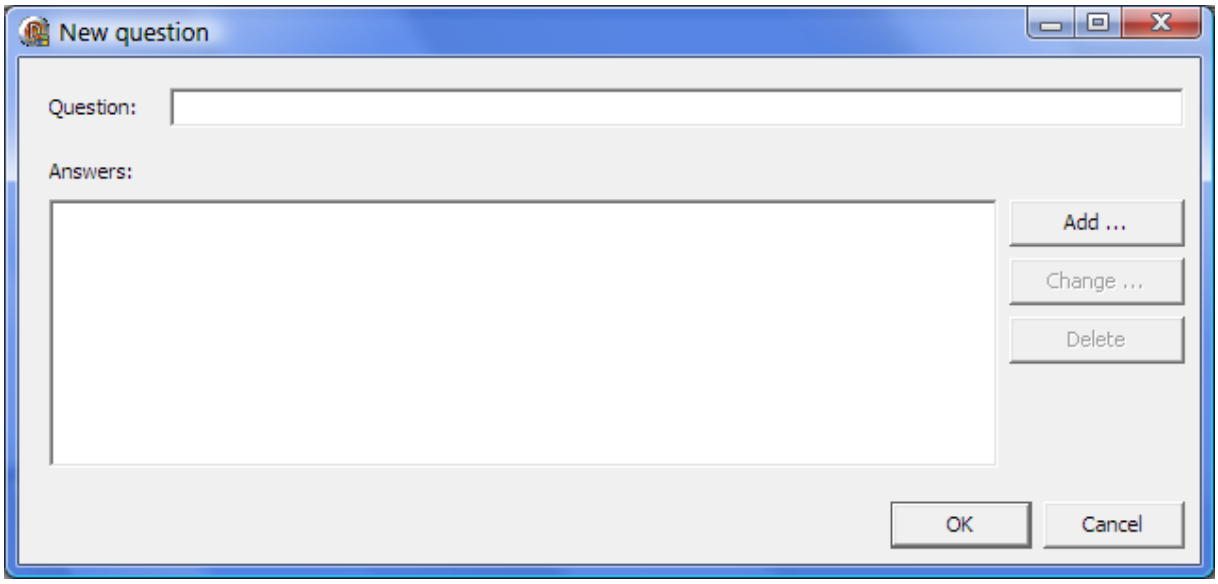
The Teacher-View opens if a teacher logs into the system. The caption of the view shows between the hyphens the name of the logged in teacher (here, user: “Teacher”).



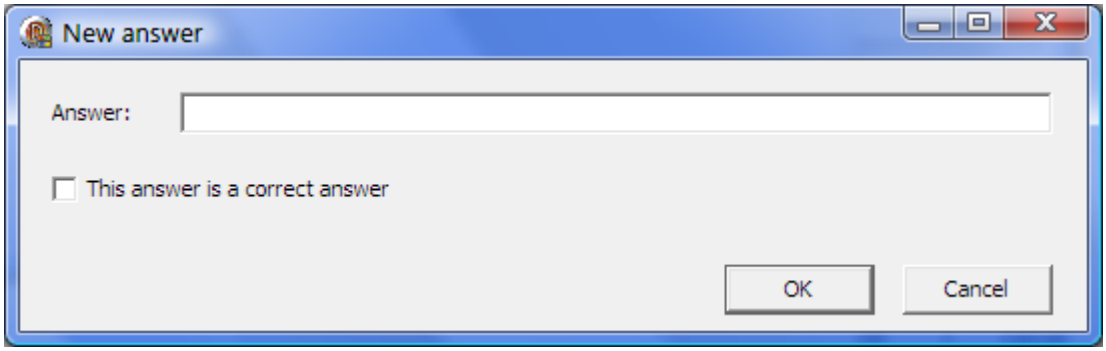
The view mainly consists on a ListBox with all available tests (of all teachers). To add a new test into the system, the button “New test...” has to be clicked. Test names are If a new test shall be created, the test dialog opens.



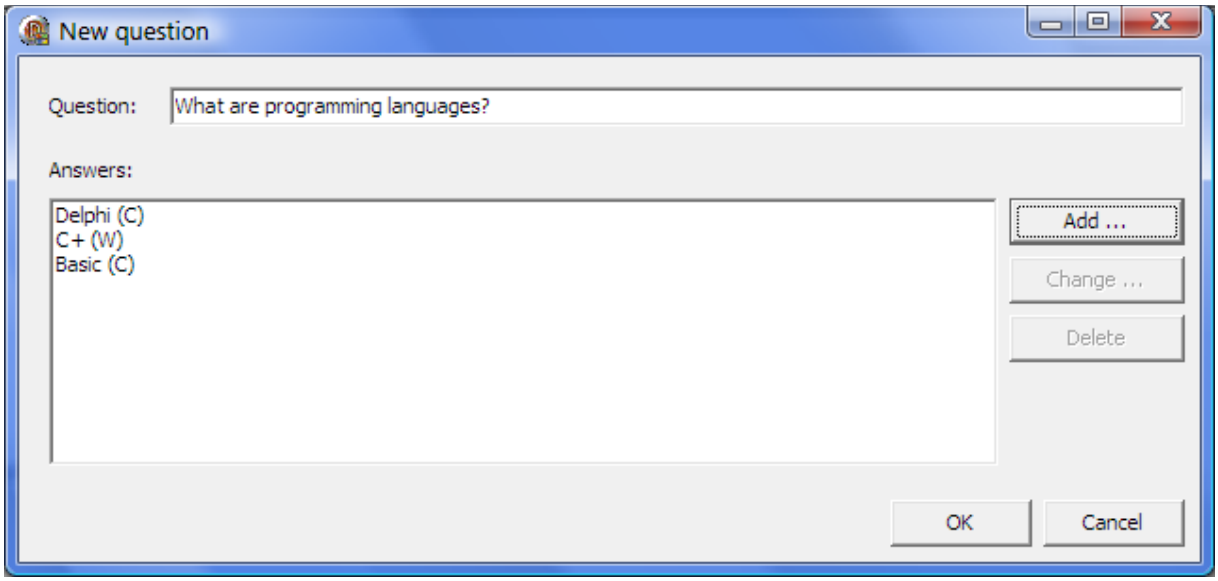
Each test must have a name, which have to be again unique in the application (i.e. the test is stored under the given test name) , a time limit to solve the test and at least one question. Questions can be added, changed or deleted by their corresponding buttons. When a question shall be created, the question dialog opens.



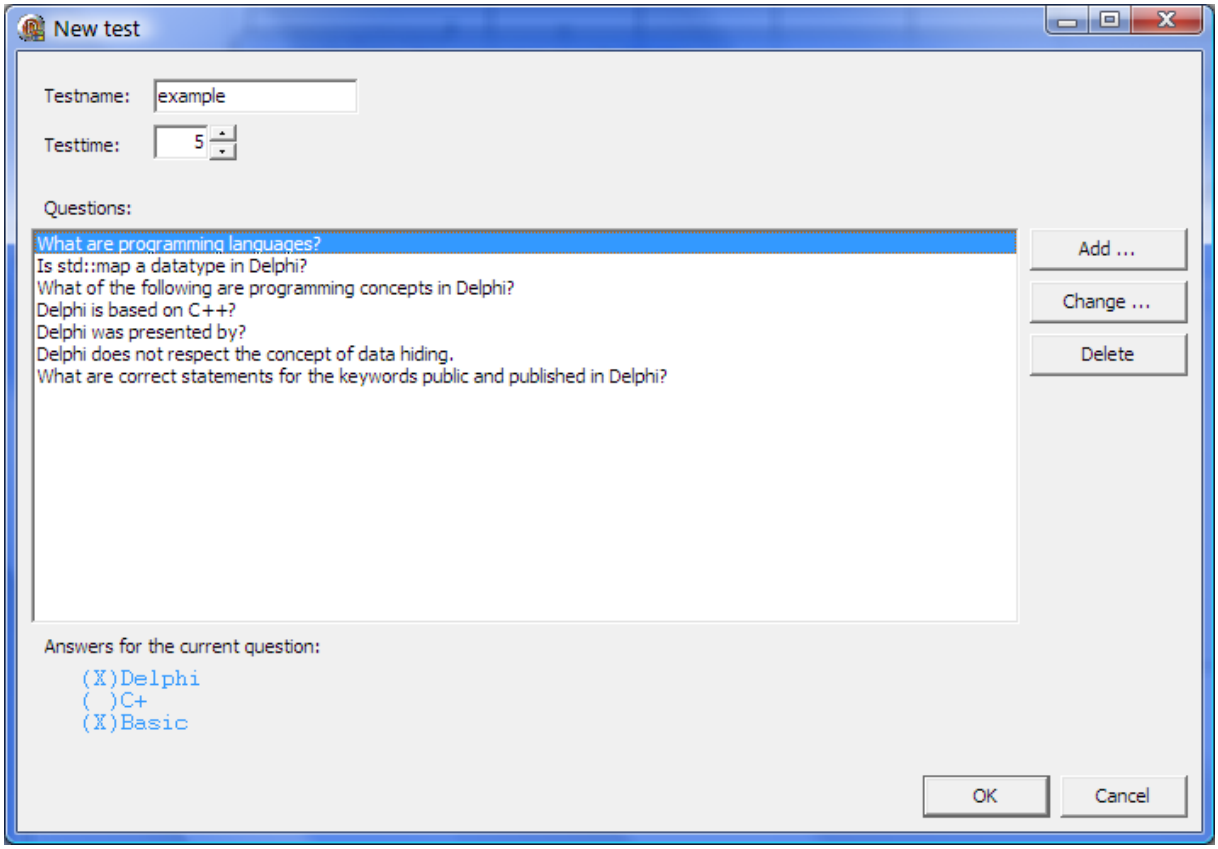
Each question must include a question title and at least one answer. Answers can be added, changed or deleted by their corresponding buttons. When an answer shall be created, the answer dialog opens.



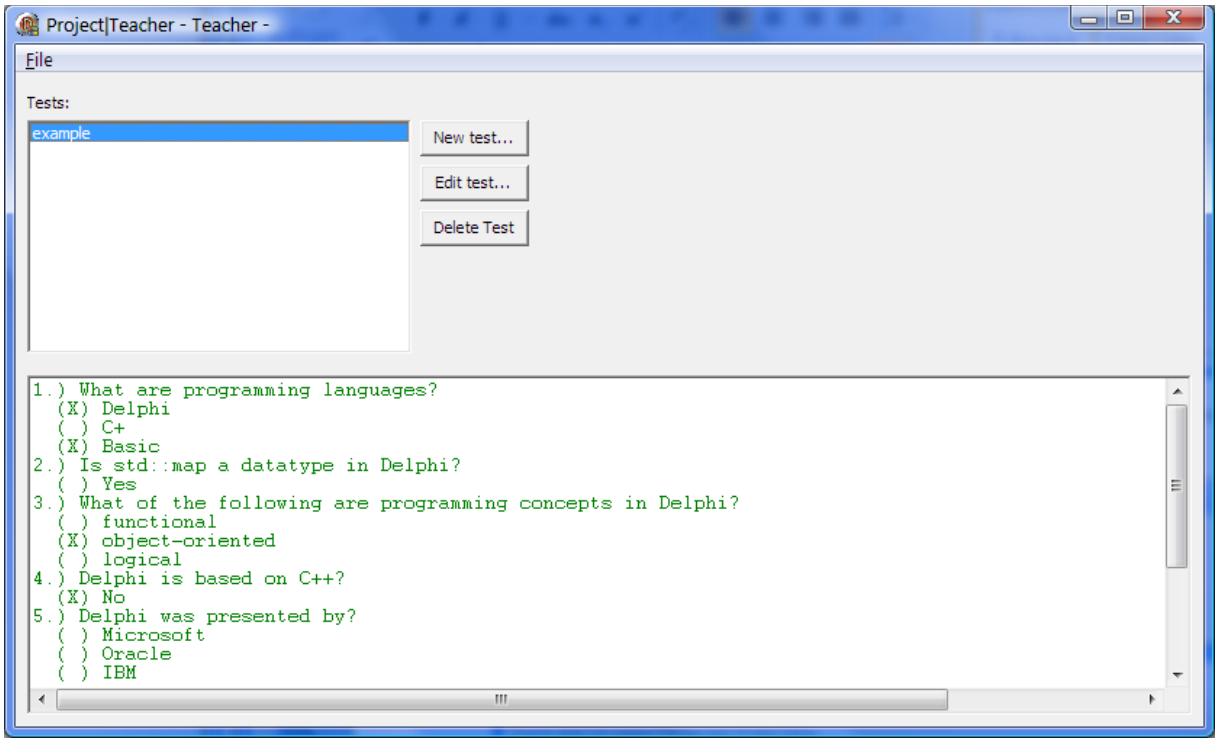
An answer must have an answer title and must be either correct or wrong. Each question can have zero till all answers to be correct (real multiple choice). A students question is only correct, if all student answers for this question match.



If a question is selected in the test dialog, all answers are shown for this question each answer with a mark, if the answer is correct.

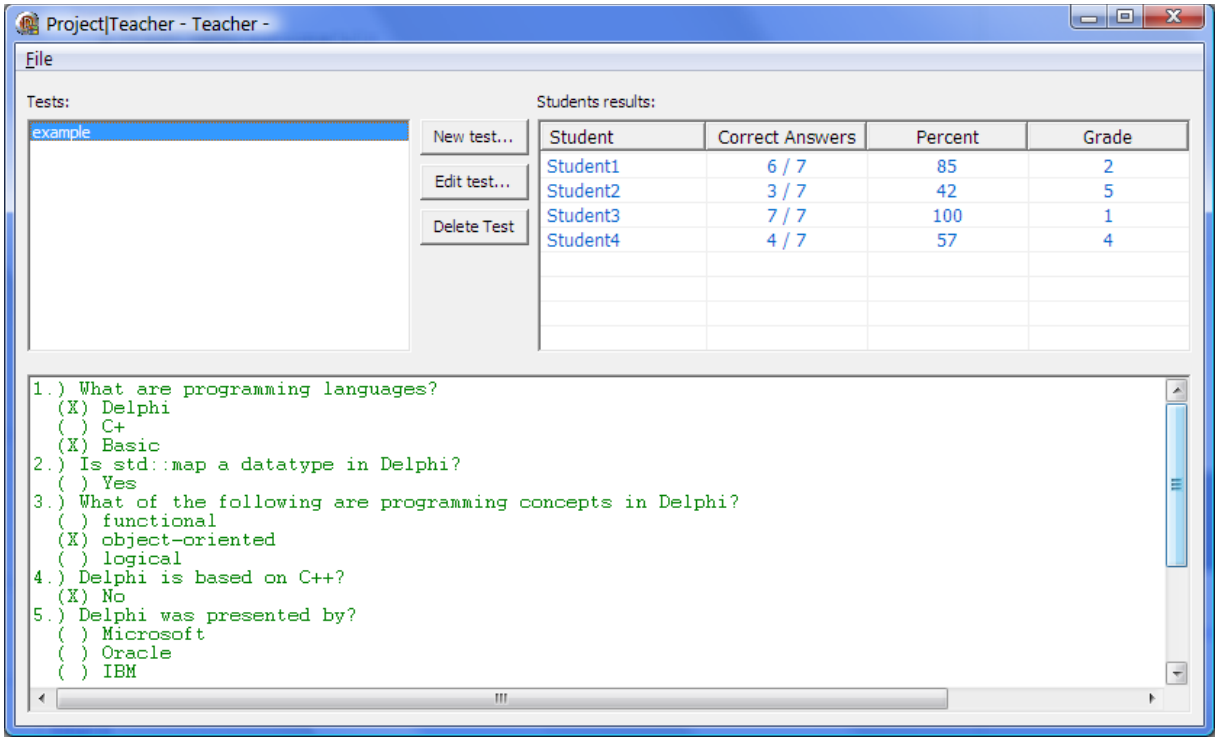


In the Teacher View it is the same. If a test is selected in the listbox, the complete test is shown in the field below.



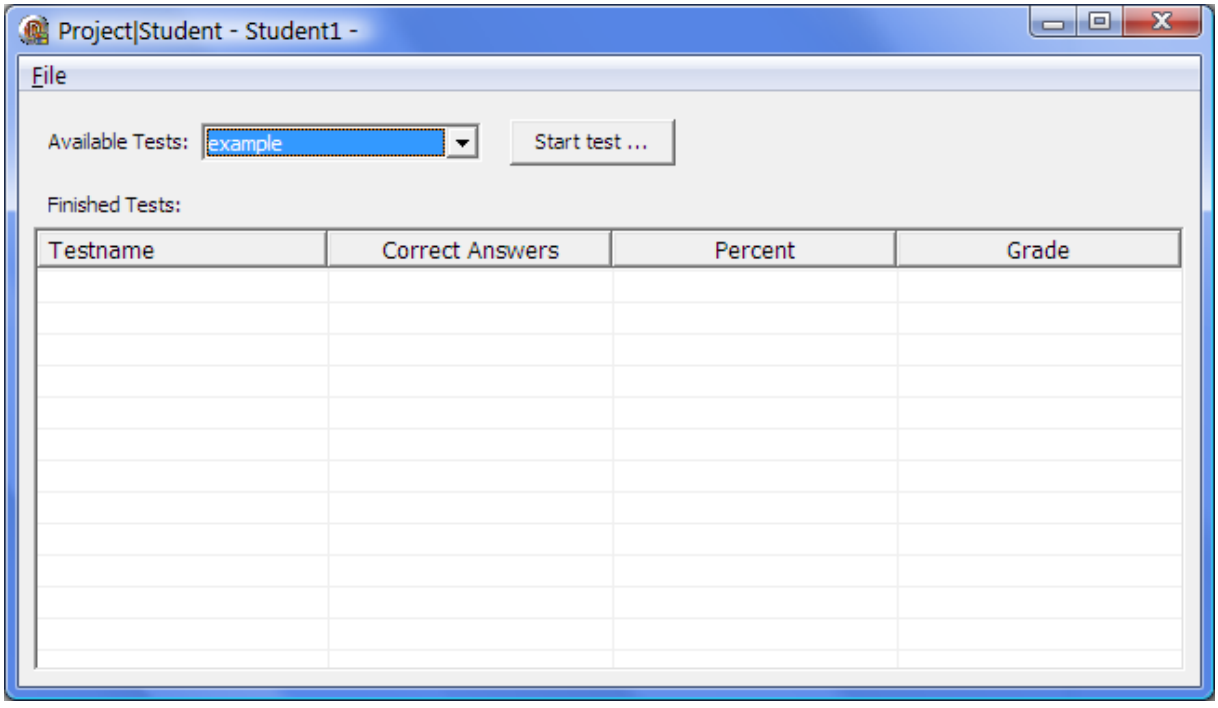
Furthermore, if a test is selected, the test can be edited (only as long no student did the test) and deleted. If a test is deleted, all students test results are removed for this test.

If a selected test is already solved by students, the results are shown in the ListView appearing on the right side.

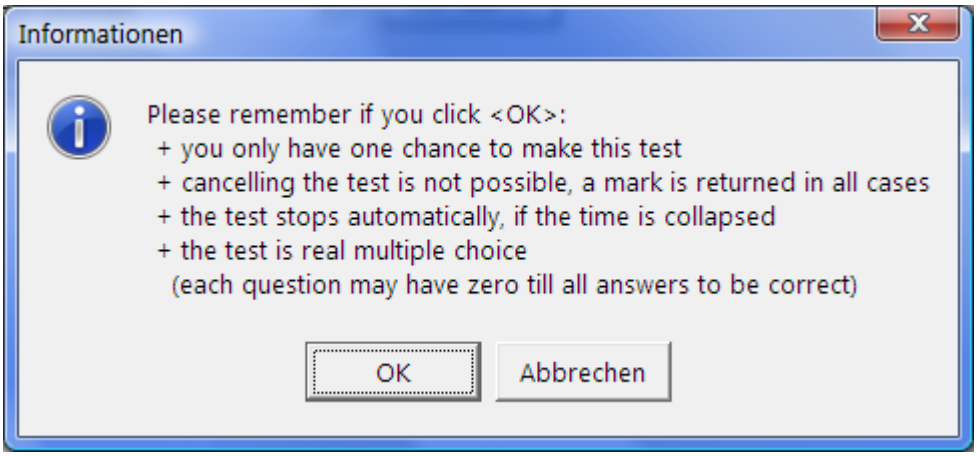


Students-View

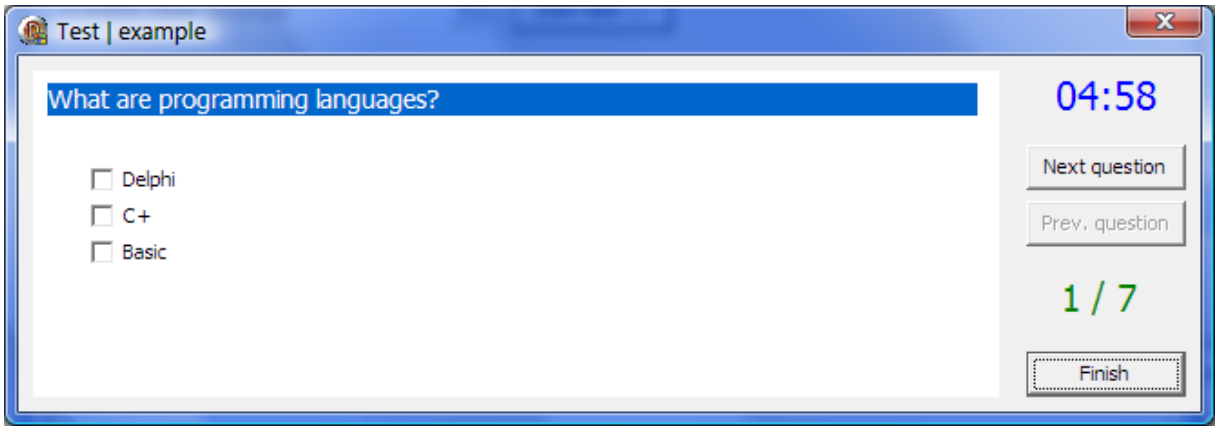
The Student-View opens, if a student logs into the system. The name of the student is shown between the hyphens (here: “Student1”). The view consists on the top of a Combobox with all tests the student did not run at the moment. Here the student can start a test by selecting one out of the Combobox and clicking the Button “Start test...”.



When a test is started, a message dialog appears with the following information:

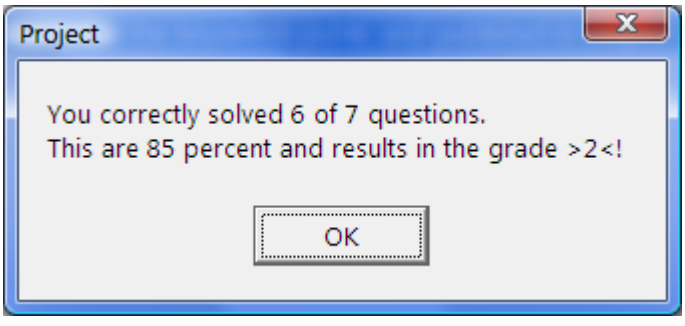


If the student presses <OK>, the student test dialog starts and the time counts.



The dialog shows each question on an own “page”. The student can access the next or previous question by the corresponding a button. All answers are stored, so the student can overrule his answers as long the test is not finished.

A test is finished either if the student clicks on the Button “Finish” or if he closes the test or if the time is over. If one of these actions appears, the result is calculated and shown to the student.

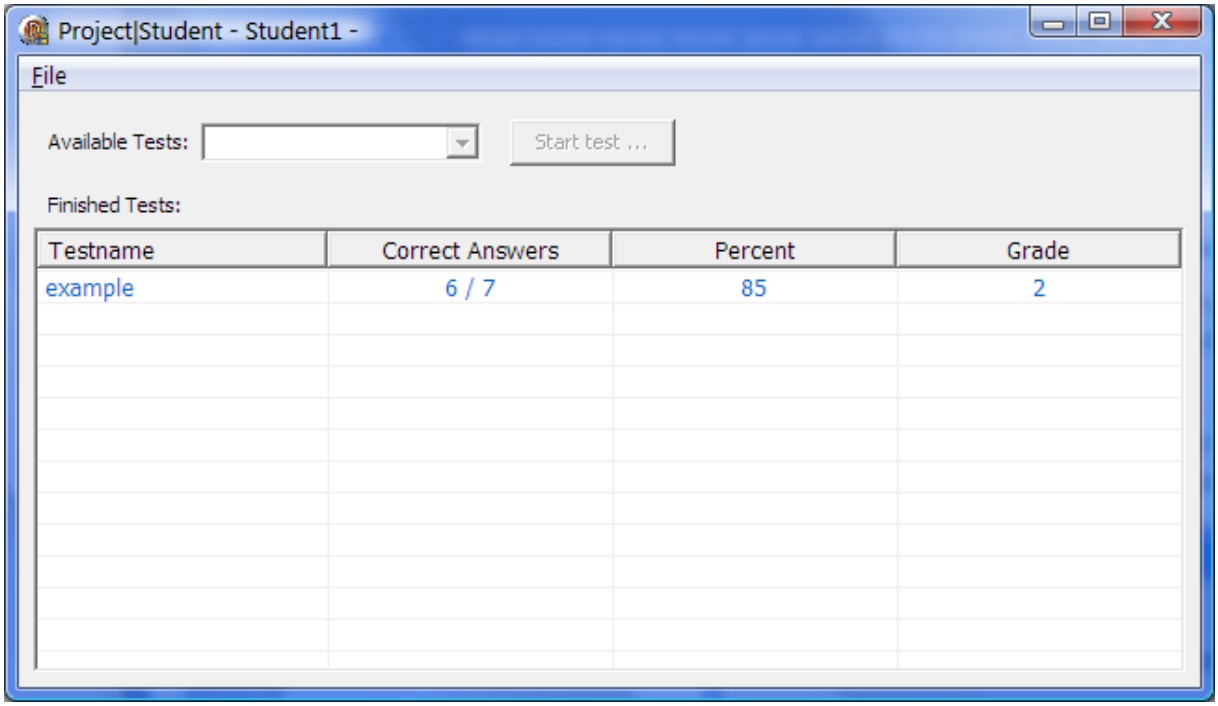


Therefore the percent of correctly solved questions is calculated and the grade results from the following table:

Percent (To->From)	Grade
[0%-50%[	5
[50%-62.5%[	4

[62.5%-75%[	3
[75%-87.5%[	2
[87.5%-100%]	1

The test result is automatically stored and the student sees in the Students-View the test result of all solved tests in the ListView.



Because of the test is solved, it is removed from available tests for this student.