

AAMS

(Automatic Assignment Management System)

Group 21

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Design document

Contents

6. Functional Test Cases	3
Test input data	3
Starting and defining a course	5
Filling in a course with information	9
Extracting information from a course	12

6. Functional Test Cases

For testing the functionality of the system, we will provide a sequence of tests in which the tester will create a course, fill it with some information and extract some information from it. This sequence is intended to go through all the required functionalities of the system (see [2]). For keeping the test over the critical path, it is important, of course, to follow the sequence steps in the given order.

Test input data

All the test input data necessary to perform the test sequence will be listed here. Of course, the free text values, as the teacher's comment for an assignment, can be replaced for any others if it is considered preferable.

Global data

The specified SMTP server will probably not be reachable during a test situation due to restrictions in the local network. Use a reachable SMTP server.

- SMTP user: *professor_mvk21*
- SMTP pass: *sumvk07*
- SMTP server: *smtp.mail.yahoo.com*
- SMTP port: *465*
- ExtSysname: *RES*
- ExpName: *resExport*
- ImpName: *resImport*

Course data

- Course name: *Basic computer science*
- Course code: *test21mvk08*
- POP3 user: *professor_mvk21*
- POP3 pass: *professor_mvk21*
- POP3 address: *professor_mvk21@yahoo.se*
- POP3 server: *pop.mail.yahoo.com*
- POP3 port *995*

Student data

To use this account for sending and receiving mail, use the same settings as for the professors account except the user name that should be: *gordon.freeman29* .

- Student name: *Gordon Freeman*
- External id: (not used for tests with this student)
- E-mail: *gordon.freeman29@yahoo.se*

Assignment data

- Assignment name: *assignment 1*
- External id: *hem1*
- Expected email header: *ass1 08*
- Files: *.pdf, .odt*

Starting and defining a course

General settings

- **Functionality description:** Test the functionality of the general settings
- **User requirement:** None
- **Input:**
 - Login name for SMTP server
 - Password for SMTP server
 - Address for the SMTP server
 - Port for the SMTP server (optional, standard port is default)
- **Expected output:**
 - The information for logging in into the SMTP server is in the system
- **Test procedure:**
 - Start the system
 - Click the General options button
 - Enter login name
 - Enter password
 - Enter address
 - Enter port (optional)
 - Click OK button

Set up external system

- **Functionality description:** Test the functionality of connecting the system to new external system communication systems.
- **User requirement:** None
- **Input:**
 - The name of the executable for the external system to set up
- **Expected output:**
 - The name of the executable is now in the system
- **Test procedure:**
 - Start the system
 - Click the General options button
 - Click Add external system
 - Input the name of the external executable
 - Click OK button
 - Click OK button

Import students from the RES system

- **Functionality description:** Test the functionality of importing students from the RES system
- **User requirement:** 1.2.1. Importing students list
- **Input:**
 - Login name for SSH: my.nada.kth.se
 - Password for SSH: my.nada.kth.se
 - The course code.
- **Expected output:**
 - Each student in the course specified by the course code in RES is now imported in our system with their name, external identifier and e-mail.
- **Test procedure:**
 - Start the system
 - Load a course
 - Click the menu External
 - Click the menu item RES.
 - Click the menu item Import list of students
 - Enter login name
 - Enter password

Create and define a new course

- **Functionality description:** Test the functionality of defining a new course.
- **User requirement:** 1.1.1. Creation of a course
- **Input:**
 - Name of the course
 - Code for the course
- **Expected output:**
 - A new course is created in the system
 - A new file have been created for the new course
- **Test procedure:**
 - Start the system
 - In the Course menu, click New Course
 - In the empty input fields, input course name and course code

Create and define a student

- **Functionality description:** Test the functionality of defining a new student.
- **User requirement:** None
- **Input:**
 - Name of the student
 - E-mail of the student
 - External identifier (optional)
 - Grade of the student (optional)
- **Expected output:**
 - A new student with the properties of the input has been created in the system for the current course.
- **Test procedure:**
 - Start the system
 - Open a course
 - Press the button for Adding a student.
 - Enter at least the non-optional input fields in the dialog that pop up.
 - Click OK button

Create and define an assignment

- **Functionality description:** Test the functionality of creating/defining an assignment.
- **User requirement:** 1.3.1. Defining an assignment
- **Input:**
 - A name for the assignment.
 - Email header (subject line for recognizing incoming e-mails to assignment)
 - External identifier (optional)
 - End date for assignment (optional)
- **Expected output:**
 - A new assignment with the properties of the input have been created in the system for the current course.
- **Test procedure:**
 - Start the system
 - Load a course
 - Press the button for creating a new assignment
 - Enter at least the non-optional input fields in the dialog that pop up.
 - Click OK button

Create and define a new file for an assignment

- **Functionality description:** Test the functionality for creating and defining a new file for an assignment.
- **User requirement:** None
- **Input:**
 - The expected extension of the file.
- **Expected output:**
 - The file have been created and defined for an assignment for the current course in the system.
- **Test procedure:**
 - Start the system
 - Load a course
 - Select an assignment
 - Press Add file button
 - Enter the expected extension.
 - Press OK.

Filling in a course with information

Fetch assignments from the e-mail account

- **Functionality description:** Test e-mail fetching functionality. This is more a description of a series of possible tests than a single test.
- **User requirement:** 2.1.1, 2.1.2, 2.1.3, 4.1.1 and 4.1.2
- **Input:**
 - Course and student data setup as in previous tests.
 - E-mails sent from gordon.freeman29@yahoo.se, or some random address not specified in course data. The e-mails should be composed according to the following criteria.
 - * Subject line containing both, one or none of the following strings: "ass1 08" and "test21mvk08". Subject line may contain some random text. Substrings of the subject line can be in random order.
 - * A random text message of length ≥ 0 .
 - * Some files may be attached to the e-mail. Testing should be done using: a pdf-file and an odt-file, only one of them or none of them. To every combination a test with additional files should be performed.
- **Expected output:**
 - For any e-mail sent from gordon.freeman29@yahoo.se that has a subject line containing "ass1 08" and "test21mvk08" as disjunct substrings. The message should be recognized and registered in the course database. Any other subject line should be ignored and the e-mail should be left untouched on the POP3 server.
 - For a registered e-mail any attachment should be registered in the course database.
 - For any recognized e-mail a confirmation e-mail should be sent to gordon.freeman29@yahoo.se.
 - For any recognized e-mail that does not have a pdf-file and an odt-file attached the confirmation e-mail should contain an error report pointing out what is missing.
- **Test procedure:**
 - Setup course and student data as in previous tests.
 - Compose an e-mail and send it to professor_mvk21@yahoo.se, using some random e-mail application.
 - Use yahoo mail web service to monitor the e-mail account.
 - When the message is in the account inbox. Select "Download" from the "E-mail" menu.
 - Confirm that the course database is consistent with expected output.
 - Monitor the e-mail account, that was used for sending the e-mail, for expected confirmation e-mail.
 - Confirm that a confirmation e-mail is consistent with the expected output.
 - To do another permutation of this test delete course and student data. Otherwise leave it for other tests.

Import an assignment manually

- **Functionality description:** Testing manual import of assignments. This is more a description of a series of possible tests than a single test.

- **User requirement:** 2.1.4
- **Input:**
 - Course and student data setup as in previous tests.
 - One or more files to import. Any file format.
- **Expected output:**
 - The files should be registered in the course database as belonging to the selected student and assignment.
- **Test procedure:**
 - Setup course and student data as in previous tests.
 - In main window select "Student" tab or "Assignment" tab.
 - If "student" tab was selected, select "Gordon Freeman" in "Student" tab and click "View assignments" button. If "Assignment" tab was selected, select "assignment 1" in "Assignment" tab and click "View students" button.
 - If "Student" tab was selected, select "assignment 1" in "View assignments" dialog and click "Import file" button. If "Assignment" tab was selected, select "Gordon Freeman" in "View students" dialog and click "Import file" button.
 - With file chooser dialog navigate to the directory with the files to import and select a file and click "OK" button.
 - Repeat the two previous step for all files.
 - Confirm that files have been added to the course database using "View assignments" dialog or "View students" dialog

Set comments and grades for an assignment

- **Functionality description:** Testing commenting and grading assignments. This is more a description of a series of possible tests than a single test.
- **User requirement:** 3.2.1 and 3.3.1
- **Input:**
 - Course and student data setup as in previous tests.
 - Some random text to be used as a comment for an assignment.
 - Some random text to be used as a grade for an assignment.
- **Expected output:**
 - A comment and a grade registered in the course database as belonging to the selected student and assignment.
- **Test procedure:**
 - Setup course and student data as in previous tests.
 - In main window select "Student" tab or "Assignment" tab.
 - If "student" tab was selected, select "Gordon Freeman" in "Student" tab and click "View assignments" button. If "Assignment" tab was selected, select "assignment 1" in "Assignment" tab and click "View students" button.

- If "Student" tab was selected, select "assignment 1" in "View assignments" dialog and click "Edit comment and grade" button. If "Assignment" tab was selected, select "Gordon Freeman" in "View students" dialog and click "Edit comment and grade" button.
- In the "Comment and grade" dialog. Enter some random text in the "Comment" input box and "Grade" input field. Click "OK" button.
- Confirm that the comment and grade have been saved to the course database by following the previous steps to display the "Comment and grade" dialog for the same student and assignment.

Send feedback to a student

- **Functionality description:** Testing sending of feedback. This is more a description of a series of possible tests than a single test.
- **User requirement:** 4.2.1 and 4.2.2
- **Input:**
 - Course and student data setup as in previous tests.
 - Some random text to be used as a comment for an assignment.
 - Some random text to be used as a grade for an assignment.
- **Expected output:**
 - An e-mail sent to a registered students e-mail address.
- **Test procedure:**
 - Setup course and student data as in previous tests.
 - In main window select "Student" tab or "Assignment" tab.
 - If "student" tab was selected, select "Gordon Freeman" in "Student" tab and click "View assignments" button. If "Assignment" tab was selected, select "assignment 1" in "Assignment" tab and click "View students" button.
 - If "Student" tab was selected, select "assignment 1" in "View assignments" dialog and click "Edit comment and grade" button. If "Assignment" tab was selected, select "Gordon Freeman" in "View students" dialog and click "Edit comment and grade" button.
 - In the "Comment and grade" dialog. Enter some random text in the "Comment" input box and "Grade" input field. Click the "Send feedback" button or the "OK" button.
 - If the "OK" button was clicked, select "Send" from the "E-mail" menu.
 - Monitor the e-mail account for the selected student and confirm that an e-mail is sent to this address.
 - Confirm that the e-mail contains the comment and grade that was entered in the "Comment and grade" dialog.

Extracting information from a course

Test PDF Report generation

- **Functionality description:** (Generate specified report in PDF file format)
- **User requirement:** 5.1.1 , 5.2.1 , 5.3.1
- **Input:**
 - Assignment
 - Student
 - Course
- **Expected output:**
 - <course>.pdf
 - <assignment course>.pdf
 - <student course>.pdf
- **Test procedure:**
 - Choose to generate a report in AAMS
 - Choose which type (Assignment, Student or Course)
 - Analyze the output generated by AAMS

Export grades to the RES system

- **Functionality description:** (Exporting grades to the RES system)
- **User requirement:** 6.2.1
- **Input:**
 - XML file with students and grades for current course
- **Expected output:**
 - A dialog box confirming the exportation
- **Test procedure:**
 - Choose to export to RES
 - Wait for output

References

- [1] Sommerville, I., *Software Engineering*, Addison-Wesley. Eighth edition (2007)
- [2] Group 21, *Requirements Document*, 2007