

**Project Name: AAMS  
(Automatic Assignment Management  
System)**

**Group 21**

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# PROJECT OVERVIEW DOCUMENT

## 1. Users and problems that the system solve for them

University professors usually have to deal with courses with a very large number of students. Collect the homeworks and assignments from all of them by e-mail can be very time-consuming and even can lead him to make some errors (forgetting to open some e-mail, etc.). Furthermore, the manual processing of all homeworks (reading, commenting and marking them) is a task that requires a lot of extra-concentration, making the professors waste their time with organizing instead of focusing on the homework itself.

More specifically, the solutions to some common problems that our system will solve are:

- The interaction with the e-mail server, in order to collect all the assignments, will be automatized.

- The assignments will be automatically organized in a folder system to every student and course.

- Some tools will be given in order to attach comments and marks to each assignment.

- There will be the possibility of creating reports in order to make a general vision of the state of the course.

- The communication with the Res system (used to register students in courses, add marks to their homeworks, etc.) will be automatized, letting the possibility of expand the automation to other university systems opened.

This project could be used in a more general way, not just by university lecturers, but by anyone who needs to collect documents from a large group of people (project managers, etc.).

## 2. Main uses of the system

The main use of system is to let the university professors manage the collection and administration of course assignments easily. The system is able to download from an e-mail account and organize the assignment deliveries, showing a clear vision of the state of the delivery to the user. The system allows the user to add comments to the assignments, grade them, and send easily the feedback to the students. Some reports, showing clearly the general state of the course and the different deliveries, can be quickly generated. In order to make the workload lighter, the system can synchronize with the CSC Res system. These are two usage narratives that exemplify some possible applications of our System:

“Gunnar is a university professor. Yesterday was the last day for the students to submit their latest homework assignment. Gunnar starts AAMS (Automatic Assignment Management System) and the program downloads the students assignments from the e-mail server, presenting him with a list of all the students that have submitted their work. He starts to work through the list reviewing and commenting all students. His comments are automatically sent back to the

students. Finally he instructs the program to update the university database using the Res system. Gunnar likes AAMS because it provides him with the tools he need to manage the students homework assignments in a consistent way.”

“John Doe works as a project manager for a consulting company. John is the middleman between clients and consults. Neither John nor the consults has the time to have face to face meetings so often, therefore he once a week receives email reports from his consults.

John uses Automatic Assignment Manage System (AAMS) to organize and manage all reports for each project the consults has been assigned. AAMS makes sure John doesn't miss to handle any report and allows him to give individual feedback to the consults.”

### 3. Context/environment in which the system is to be used

The software system will be used in environments like university, office or other environments where someone have to handle electronic documents submitted by a large group of people, giving them feedback from these.

### 4. Scope of the system

Topic	In	Out
Importing students information from student list files	x	
Importing homework assignments from an e-mail account	x	
Editing comments and marking assignments	x	
Sending results and comments to the students by e-mail	x	
Producing reports about the state of the assignment delivery	x	
Calculating statistics and mark averages		x
Exporting marks to assignment mark files	x	
Importing and exporting information from the CSC Res system	x	
Supporting shared management for several professors		x

In principle, our system will be able to import lists of students in order to define courses. These lists could be made manually or extracted from the specific course management system that every institution usually has. In our system, we will just develop the link with the CSC Res system, letting it opened to future additions. Likewise, the system will be able to export lists of marks for homeworks: the link with the CSC Res system will be developed as well. The statistics and mark averages calculations are too particular for each course, so we have decided to let them out of the scope of our system. However, some general information will be provided about the status of each delivery, etc. Another reasonable feature that will be out of the boundaries of our system is the shared management of a course. A course managed by several professors sharing the evaluation of assignments could be emulated, for example, splitting the course into several virtual courses, one for each professor; so this functionality, although could be useful in some cases, is not completely indispensable in the context in which the system is used.

## **5. Main factors**

-If the system receives the expected assignment from a student, a receipt must be sent back to her. If something is wrong (for example, there is some required file missing), the system will automatically send a notification to the student.

-The professor will be able to use his normal e-mail account to receive the assignments in. The system will only react to the previously defined homework e-mails. However, it is suggested to work with a special e-mail account in order to prevent coordination errors.

-The system will include some flexibility in order to manage usual "exceptions" in the assignments collection task (e.g., if a student gives her homework to the professor by hand).

-Security features will be implemented so that unauthorized users can not grant access and files with student personal information will be saved encrypted.

-The user interface should be clean and easy to use, (e.g present previously emails in case of a follow up from an incomplete assignment instead of letting the user of the system search manually).

## **6. Technologies and Risks**

The software will be written in the programming language C++. C++ is a widely used programming language supported by most platforms. A possible risk is the groups lack of familiarity with cross-platform development.

WxWidgets is going to be used to develop the GUI (Graphical User Interface). WxWidgets is an API that is used to write cross-platform GUI applications. The supported platforms are Windows, Unix and Mac. A possible risk is the group's lack of knowledge in developing WxWidget software. And since the system is going to be used on different platforms another possible risk is the group's lack of knowledge in cross platform development with GUI applications.

For the integrated email-client in our system we are going to use an open source email-library or parts of an existing open source email-client. The protocols we are going to use is POP3 for retrieving emails of the server and the SMTP for sending emails to the server. Both of these protocols are going to use secure transfer using an encryption protocol. A possible risk for using a library or parts of an existing client is that we don't know how well the code is written which could affect the stability of the entire system.

We will use the XML standard to store information used in the system. XML is a widely used standard for storing of information on files. For implementing this into our system we will use an open source library. Since the know-how exists in the group there is a low risk using this technology.

Our system is going to be able to communicate with the CSC Res system. The CSC Res system is a system used at KTH for handling the grading of student's homework assignments and exams. A possible risk is the testing of the communication because the files used to communicate with the CSC Res system have restricted access.