

Online TA

Master Project

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Chapter 1

Introduction

In any teaching of the application of computers it is essential to have the students do practical programming problems and to grade their results. Such grading should consider both the formal correctness and the performance of the programs and tends to become difficult and time consuming as soon as the teaching is beyond the most elementary level. The possibility of using the computer to help in this task therefore soon suggests itself.

— PETER NAUR, *BIT* 4 (1964)

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Chapter 2

Feature Specification

2.1 User Roles

For an online TA there are two principal user roles: *system administrators* and *stakeholders* (students, teachers, and the general public). (TODO: is the general public really a stakeholder?) (TODO: how limited is the general public?)

System administrators have complete control of the servers running the service, including the mechanisms that enforce the security policies of the service. (They can, in principle, change anything.) System administrators are also responsible for monitoring the service for abnormal or abusive behaviour.

Stakeholders access the system through a secure online interface. They set up, enroll participants, and participate in courses — where a course is a collection of programming assignments for the students to solve.

There are four principle course-specific stakeholder roles: *instructors*, *assistants*, *students*, and *non-participants*. That is, for each course, every stakeholder has exactly one of these four roles.

Instructors are the principle course administrators. They can enroll other participants as either instructors, assistants, or students. Their primary role is to define the elements of a course.

Assistants are second-level course administrators. They can enroll other participants as either assistants or students. Their primary role is to assist the instructors in defining the elements of a course, and to provide feedback to students.

Students are the basic users of a course. They cannot enroll other participants, or tamper with the elements of a course. Their primary role is to submit solutions to the programming assignments of a course. Student submissions are individual or group-based, and so not visible to other students in general. Student submissions are visible to instructors and assistants for the sake of evaluation.

Non-participants can see the elements of a course, but they cannot participate in the course in any way. The reasoning here is that there is no implicit trust relationship among the participants of a course, that does not exist among all the stakeholders of an institution. Providing access to non-participants allows them to get a feel for the course, which is useful for both encouraging

participation and course evaluation.

NOTES:

- Only instructors and assistants can define the elements of a course.
- Only students can make submissions to programming assignments.
- Course contents is open for everyone in the system to see.

2.2 User Data

2.2.1 Stakeholders

- Name
- E-mail
- KU username

2.3 Source Code and Documentation

2.3.1 Open Source