Software Engineering course project: CSÁRDÁS
Overview and description of first assignment

Basics

The project for this course is called CSÁRDÁS: Computer Science Academic & Research Daily Advertising Service.

The purpose of the project is to introduce you to the problems and techniques of software construction in industry, with constraints mimicking those of actual projects. It is not just a programming project but includes the four key aspects of software engineering as taught in this course: Description, Implementation, Assessment, and Management.

The CSÁRDÁS application, to be developed by each group, is devoted to a Web application for advertising academic positions for Informatics Europe, on the model of the Computer Science Events List advertising page:

http://events.informatics-europe.org

written by Marco Piccioni, and whose source code is made available for guidance.

This is not an artificial exercise. CSÁRDÁS corresponds to a real need and we expect that the best student project will actually be deployed at the end of the semester.

A more precise description of the goals of CSÁRDÁS appears below (initial system idea).

Technologies

The technologies are imposed by the customer:

- Web application.
- Web server: Apache
- Operating system: Linux
- Programming language: Eiffel
- Web framework: EiffelWeb
- DBMS: mySQL

The first assignment

In the first assignment you have to write a requirements document and produce an object-oriented requirements specification (OORS) for the system. Note that in the second assignment these products will be handed over to another group; so you must ensure that they are usable in the absence of any contact with their original developers.

Deliverables include:

- A graphical O-O requirements description in Eiffel or UML.
- Anything else that you find useful, e.g. screenshots, use cases.
Make sure you include both functional and non-functional requirements.

Requirements capture

As in any software project, you need to identify the stakeholders of the project and get input from them. On the first aspect we’ve done the basic job by enlisting the help of a number of members of Informatics-Europe who are interested in the eventual outcome of CSÁRDÁS and will provide input.

Discussion with these stakeholders will proceed on a mailing list and Wiki page. These media are common to all groups. Do not write directly to the stakeholders; use only the facilities provided. In discussions, treat them as a source of information, as in any project, and remember to be polite and considerate. (These are busy people, typically professors or department heads, who have kindly accepted to spend some of their time using this project for your benefit and that of Informatics Europe.)

Grading

This assignment counts for 25% of the project grade (itself half of the course grade).

It will be assessed as follows:

- 20%: Readability.
- 30%: Testability
- 20%: Precision and level of detail of the description
- 30%: Extent and usefulness of functionality (but remember that you’ll have to implement your requirements).

Deadline

The assignments are due on the 5th exercise sessions:

- April 19 for groups that are registered for exercise sessions on Thursday.
- April 20 for groups that are registered for exercise sessions on Friday.
- April 23 for groups that are registered for exercise sessions on Monday.

Initial system idea

*The following description will serve as starting point for Assignment 1 (requirements). It describes the overall goal of the CSÁRDÁS system; you will have to explore the various ramifications and obtain shareholders’ input to refine it into a requirements document.*

Informatics Europe ([http://www.informatic-europe.org](http://www.informatic-europe.org)) is the organization of computer science departments in Europe, created in 2005. Its members are universities and research organizations, typically represented by their department heads.

Informatics Europe wants to provide the CS community with some useful services. A first one, launched in 2007 and freely accessible, is the Computer Science Event List. CSARDAS is the next one planned.
The purpose is to have a central Web site to advertise academic positions in the field, initially in Europe. Such positions include professor appointments, but also (and more often because of sheer numbers) possibilities for PhD students, assistants, postdocs etc. These categories are important: clearly it makes sense for a fresh Master’s graduate to apply to a PhD position but not to a professor position. Among professor positions, there are also various levels (assistant professor/associate professor/full professor), and a distinction between tenured, untenured and tenure-track position. The exact properties of these various ranks are not necessarily essential to the CSÁRDÁS system, but every announcement of a position must specify what the properties of each position are.

Currently positions are advertised on mailing lists such as the ECOOP mailing list (http://www.ecoop.org/) and others, which provide a good basis to understand what announcements look like. They are also advertised on general job sites (such as monster.com), but these miss the specifics of academic positions and careers. Hence the need for a special service.

Like the Computer Science Event List, CSÁRDÁS should offer at least three interfaces:

- A reader interface, to find out about available positions.
- A submitter interface, for those advertising positions.
- An administrator interface, available only to a few people with administrator status, to review submissions, since it is expected that all postings will be subject to review and approval (although this initial assumption is subject to discussion and revision).

Example operations are:

- For readers: see all positions, see positions for a given country, a given academic rank etc.; browse by search criteria.
- For submitters: propose a new position.
- For administrators: approve, reject, remove, and modify postings.

Although it is not known how many people will use the service and how many positions will be advertised, the aim is to make the service attractive and successful, so the solution should scale up.

The service will be hosted at ETH. Details of the setup will be provided later.

In collaboration with the stakeholders you are expected to derive precise requirements for a system addressing the above goals. You have considerable flexibility as to the extent of functionality that you include; higher functionality will lead to a better grade for Assignment 1 (see the grade distribution above), but will of course increase the work on design and implementation in Assignment 3.