

## CIIT 2010 WEB APPLICATION

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### ABSTRACT

This paper will give overview of the structure and the functionalities included in the CIIT 2010 web application. This application is an electronic tool that supports conference organisation including the following functionalities: electronic submission, review and grading of papers and abstracts, tracking the status of submitted papers and their categorisation, distinct roles like administrator, reviewer and author as well as changing between the roles (if the user of the system has more than one role) and content management.

### I. INTRODUCTION

CIIT 2010 web application is built for the purpose of the CIIT 2010 conference. It is an International Conference for Informatics and Information Technology, and this year it is organized for the seventh time by the Institute of Informatics. All of the functionalities of the application were driven by the demands of and the experience of the Organizing and the Programme committee of CIIT2010. The final goal is building a customized conference management software system that will accommodate all the demands for successful organization of the CIIT 2010 conference.

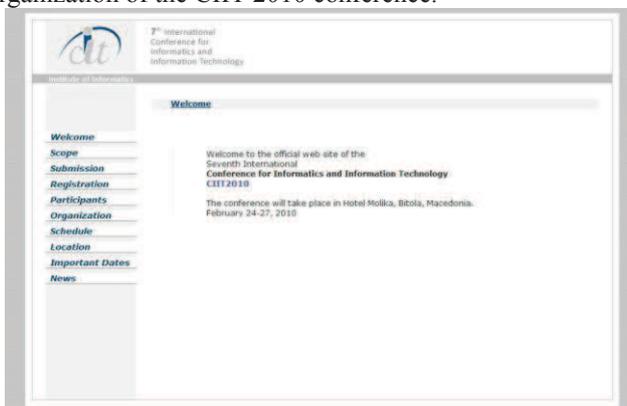


Figure 1: CIIT 2010 welcome page

Before building the CIIT2010 paper submission system, several distinguished review systems were thoroughly explored and revised [1]. These systems include: Manuscript Central, EasyChair, START V2 ConferenceManager and Microsoft Research Conference Management Tool.

#### A. Manuscript Central

Manuscript Central [2] is developed by ScholarOne, Inc. It is the online submission and peer review system used to handle manuscript submissions to journals. The system is currently used by most IEEE and Association of Computing Machinery (ACM) journals. Manuscript Central is fully developed software with 24-hour support on weekdays. It manages over 44,000 submissions per month [1]. The solution includes

proactive task assignments and reminder services to streamline and enrich the review process for reviewers and meetings organizers like: strategic overviews of status in the workflow and reports for submissions, decisions, and reviewer performance; full administrative control of broadcast emails for authors, reviewers, and program chairs; and monitoring capabilities for all supplemental file requirements throughout the process [2].

#### B. Microsoft Research Conference Management Tool (MSRCMT)

Firstly developed for ACM SIGKDD 1999, the MSRCMT [3] is an academic conference management service sponsored by Microsoft Research. Surajit Chaudhuri [13], a Research Area Manager at Microsoft Research is the architect of MSRCMT. Since the year 1999, this system has been used in over 500 conferences. Similar to Manuscript Central, the MSRCMT is also a fully-developed system. It is free and hosted by Microsoft Research, but with limited support since it is developed and managed by a small team [1].

MSRCMT is capable of handling the complex workflow of an academic conference including: multiple roles such as Program Chair, Reviewer, MetaReviewers (commonly referred to as area chairs), Author, Proceedings Editor; customizable paper submission, reviewer, metareviewer and author feedback forms; abstract and paper submission, supplementary material; invitations to and management of reviewers (program committee); management of conflicts of interest; reviewer bidding and preferences; suggestion of candidates for reviewing by area chairs; automatic and manual assignment of papers to reviewers; review submission; threaded discussions and online Program Committee meeting; author notification; camera-ready paper submission; creation of sessions for accepted papers; uploading slide decks for paper presentation; and interoperation with archival systems (Arxiv) [3].

#### C. EasyChair

Developed in the year 2002 by Andrei Voronkov, a Professor from the University of Manchester, EasyChair [4] [5] is used by over 600 conferences in year 2007 alone. EasyChair is free and it is currently hosted by University of Manchester's Computer Science Department. EasyChair is capable of supporting two models: (1) the standard model for conferences having one program committee and (2) the multi-track version for conferences having multiple tracks that have their own program committee. There are a number of ACM and IEEE conferences/workshops that have used or are using EasyChair [1].

D. START V2 ConferenceManager

START V2 [6], written by Rich Gerber, is a product from SoftConf.com. Apart from EasyChair, several IEEE and ACM conferences have, or are employing START V2 as the submission and peer review system since the year 2002 [1]. START V2 is an integrated, web-based system for managing peer-reviewed conferences. Each step of the process is controlled by a single-panel interface. The system can be hosted anywhere and managed remotely. There can be multiple administrators, whose accounts are set up by the root administrator (usually the committee chairperson). START provides configurable "views" for all who interact with the system - e.g., authors, reviewers, committee members, track coordinators, and program chairs. There are many policy options available - settings which control "who sees what" and "who does what". Partial summary of the features in START include: Administration View - START's administration console, which is the "central command center" for a conference; Committee Member View - The actual view that the PC members see when working with START; Track manager View - Each track can be managed semi-autonomously by a Track Manager's console - a scaled down version of the START manager's console; Track Reviewer View - to select which options are seen by a track reviewer and Author View [6].

II. CIIT2010 APPLICATION OVERVIEW

CIIT 2010 web application is built using the .NET technology, more exactly the 2.0 framework and it is coded in the C# language [7][8][9][10][11]. The technology was chosen due to the years of successful usage that our team has in building large scale, multiuser and multi-privilege web systems. Some of the advantages that this technology offers are ease of use of: the framework; the object orientated architecture; XML configuration; code separation; data access and language preference. We are using MS SQL 2000 database. The following section will provide a short overview of the roles that are included in the CIIT2010 application and its structure.

A. Roles

CIIT 2010 web application supports three different roles: author, reviewer and administrator.

1) Author

The author can be easily registered using the registration form and this role offers submission of papers, report and removal of submitted paper and user detail change. Fig. 2 shows an example of the author submission form and Fig. 3 shows the UML sequence diagram of the process of submission. The diagram shows five objects that are included in these functionalities: Registration, UserControl, Author, PostControl and Post and the functions and messages that are exchanged among them like: registration, listing of the user posts, deleting post, viewing post and updating a post.



Figure 2: Author submission form

2) Reviewer

The reviewer role can make review of the assigned papers and grade them. The reviewer registers using the same form as the authors, but is given an authorisation code obtained by the administrator which enables her to act in reviewer mode. Additionally, every reviewer can employ the author role as well. Switch between the author and review view is easily done using a button. The reviewer cannot see all the user details of the assigned papers. The available user details are only username, e-mail and date of registration. Fig. 4 shows an example of list of assigned papers to a reviewer. The marked button offers switch between reviewer view and author view. Fig. 5 gives overview of the reviewing process. The sequence diagram on the figure shows the reviewer functionalities. The diagram shows six objects that are included in these functionalities: Registration, UserControl, Author, Reviewer, PostControl and Post and the functions and messages that are exchanged among them like: registration, listing of the submitted posts, deleting post, viewing post and updating a post, as well as listing of the assigned posts that should be reviewed and updating them with a grade.

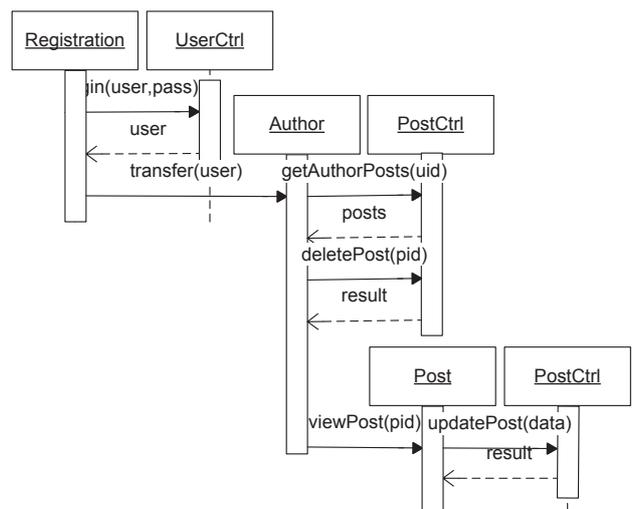


Figure 3: Author submission UML sequence diagram

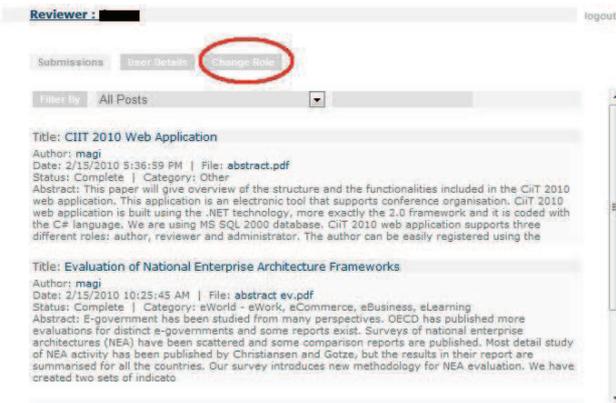


Figure 4: List of assigned papers to reviewer

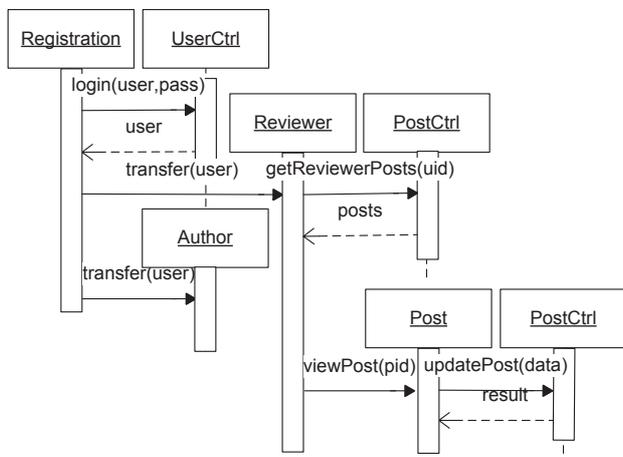


Figure 5: UML Sequence diagram of the reviewing process

### 3) Administrator

The administrator role offers the following functionalities: list all of the registered users and removal of a user, list all the submitted papers, removal of a submitted paper and assigning submitted paper to a reviewer. Fig. 6 shows an example of list of registered users as seen in the administrator view. The usernames are hyperlinks to the user detail page. The administrator can see all of the user details.

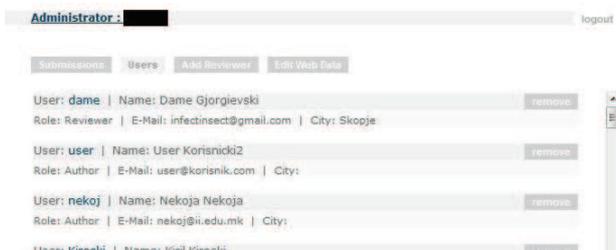


Figure 6: List of registered users

The administrator has additional option to change the content of the predefined menus given on the left side of the application. This is done with the use of an editor component

of the CIIT2010 web application. Fig. 7 shows an example of changing content of the welcome page. The editor component is a TinyMCE - Javascript WYSIWYG editor component, platform independent web based editor control released as Open Source under LGPL by Moxiecode Systems AB [12]. This component was chosen because it's easy to integrate, offers theme and template support, customizable HTML output, international language support and multiple browser support. It comes with extensive toolbar options that can be customized. This toolbar is user-friendly.

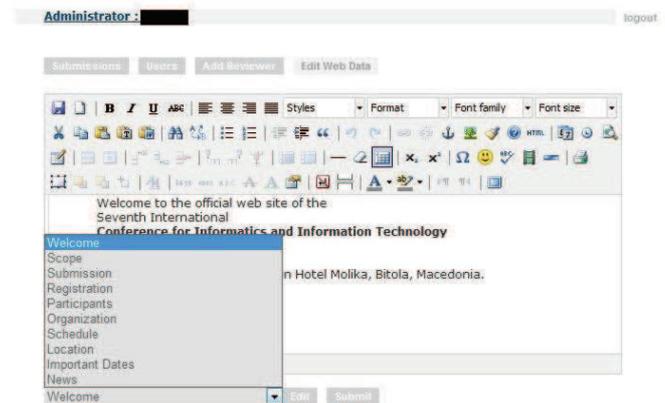


Figure 7: Editor component

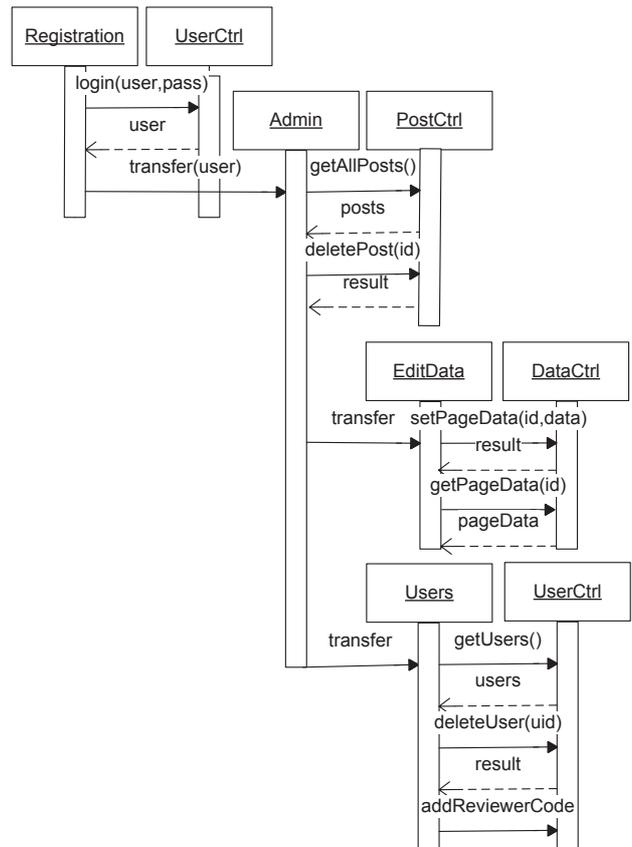


Figure 8: Administration UML Sequence diagram

Fig. 8 shows the process of administration. The sequence diagram on the figure shows the author functionalities. The diagram shows seven objects that are included in these functionalities: Registration, UserControl, Admin, PostControl, EditData, DataControl and Users. The functions and messages that are exchanged among them are registration, listing of the posts of all the users, deleting user post, viewing, setting and updating the content of a page, deleting users and adding a reviewer code.

**B. Application structure**

The application core consists of 3 base classes: DataController, PostController and UserController that are the central components of the application. These are used by the Web UI for accessing and management of data.

**1) DataController**

Instances of the DataController class are used for access and management of the public web data. The methods getMenuData(), getPageData() and setPageData() are used for loading the menus and the content of the pages, as well as for updating the content of the pages.

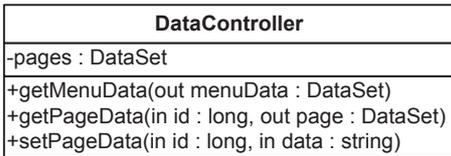


Figure 9: DataController class

**2) UserController**

Instances of the UserController class are used for access and management of user data, authentication and authorization of users. The methods addUser(), deleteUser(), updateUser() and addReviewCode() are used for managing the users' accounts and data in the system. The methods changePassword() and resetPassword() are used for managing the users' passwords. The methods getUsers(), getReviewer(), getUser() and getUserByMail() are used by the administrators of the systems.

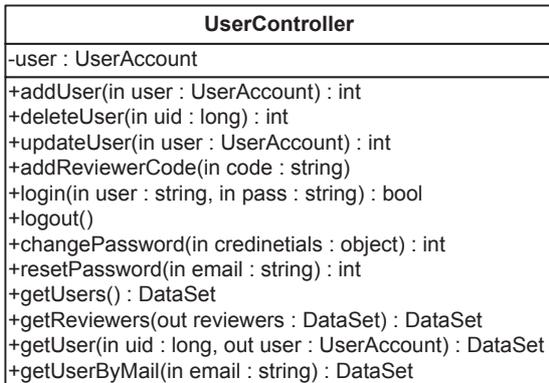


Figure 10: UserController class

**3) PostController**

Instances of the PostController class are used for access and management of user submission data. This class contains methods for loading (getAllPosts(), getAuthorPosts() and getPost() methods), adding (addPost() method), editing (there are two editPost() methods) and deleting paper submissions (deletePost() method) of the authors, reviewers and administrators.

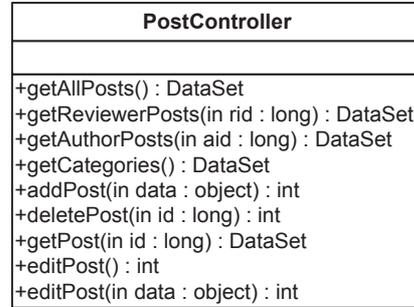


Figure 11: PostController class

**4) Web UI**

Finally the Web UI uses instances of the base classes to display and process data on user actions (Fig. 12). The Web UI includes dataControl, userControl and postControl objects. This objects are handled using .aspx and .cs pages, containing forms and grids for data management. The WebUI also includes .css files and images.

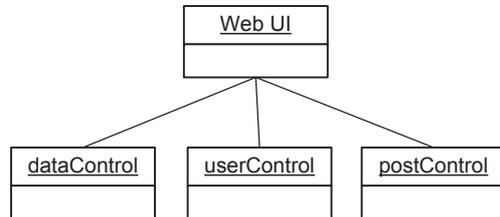


Figure 12: Web UI overview

**III. FUTURE WORK**

Future work that can be done for this project is: reporting a personal conflict by a reviewer, dynamic topics creation and selection, adding review comment and make it available to author and automatically sending mail to authors regarding to changes in status and additional information.

Additional ideas are: creating new roles such as Program Chair and Program Committee member, supplementary material and paper presentation slides submission and automatic assignment of papers to reviewers.

Even more that can be done is dynamic content of the whole page, including conference logo, title and menu, so this application would be reusable for any conference. Also parts of the application can be transformed into services [14].

#### IV. CONCLUSION

The CIIT 2010 web application was successfully used for organization of the CIIT2010 conference. Its' usage gave valuable experience and feedback by the users of the system. It enables us to further evolve and improve the system. Part of the described future work is already in progress and most of the users' comments and recommendations are accepted. We hope that this will enable further use of this application for organization of other conferences.

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