

Software Requirements Specification for RealOffice

Harshith Reddy, Abdul Hafeez, P Sai Mohith, Y Deekshit Reddy, Sachin Sridhar

I. ABSTRACT

RealOffice is intended to be a software management system that integrates the various activities of the Computer Science and Engineering department in a single platform and allows for activity creation, deletion, updates and queries. RealOffice allows the department staff and students to schedule seminars, meetings and other activities, book rooms with specific requirements and is also a bookkeeping agent for these same transactions. A simple and intuitive web interface at the front end allows for anybody to be able to use the software. At the same time, we provide a robust and secure system that allows transactions to be sandboxed in terms of the authentication levels required. While the software is customized to the CSE department, it may also be extended as a general purpose scheduler and resource manager. This document gives the software specifications of RealOffice, and looks at possible extensions that can be made in the future.

Keywords: RealOffice, Specifications, Booking, CSE Department

II. INTRODUCTION

The Computer Science and Engineering department at IITM conducts a plethora of activities within its confines, academic or otherwise. RealOffice is a system intended to be used by the department in order to systematize their activities and keep electronic records of the same. This includes (re)scheduling venues, keeping track of amenities and resources used, and status reports. The system allows for (authenticated) members to create events (these could be meetings, seminars, project reviews, etc) with various parameters such as event date/time/venue/expected audience. These are stored in a database that can then be queried in the future. Further event information such as stationery requirements, audio/projector needs, whether or not food is required, are also stored. Any files that need to be accessed during the course of the activity may also be given as additional information.

Via a front end web interface, the software displays the schedule for any upcoming events. This information is accessible to anyone with a web browser and doubles up as an itinerary for the department. This could potentially be useful to the department staff as well as students in providing a unified platform for these things. A back end server processes incoming requests and responds to them. This server also acts as an intermediary in case any human intervention is required (for instance, acquiring a signature)

and can send alerts regarding the same.

RealOffice is designed to be an Off The Shelf (OTS) software package and requires no special training to use. It is designed to be easy to use and extend if necessary.

III. GENERAL DESCRIPTION

The software can be broken down into two main components; the front end web interface and the back end server, as mentioned earlier. While these components are designed to be used in conjunction with each other, they have distinct functionality.

The web interface will provide authenticated access to a booking portal. A calendar like display shows the upcoming events for the next week/month. The user may also filter out upcoming events as per criteria like venue, resources used, expected audience, etc. To create a new event request the user chooses a date and venue, enters in the information about the event and may upload any associated files. The software performs a few preliminary sanity checks on these inputs and sends them to the back end. The back end is an Always On Server which performs a majority of the computation involved. It is capable of alerting the user when there is a conflict of venues or any scheduling issues. It makes an entry in a database for every event that can later be queried and filtered. It also integrates with email, sending out scheduled reminders before each event, or a email to the CSE department mailing list (if desired) regarding the event. An email of confirmation will be generated and sent to the CSE office after every successful booking or cancellation.

Apart from this, the system can suggest free venues for events given certain user input parameters like seating considerations. Periodic events such as weekly meetings may be auto-scheduled for smooth operation. Users who created events may cancel them and the corresponding resources will be deallocated.

Additional modules may be added in the future; for instance the integration with a food supply. Refreshment requirements can be sent electronically to the supplier well in advance, as well as reminders. This eliminates the need for a human for all but to pick up the food. Similar functionality can be added for stationery. A simple bookkeeping module serves as an inventory for the department, and alerts could be sent when materials are required. These additions aim at lessening the dependence on human memory and standardizing these procedures for all the department's events.

IV. REQUIREMENTS SPECIFICATION

The requirements for RealOffice are detailed as below.

Functional requirements: The functional requirements of RealOffice are the following.

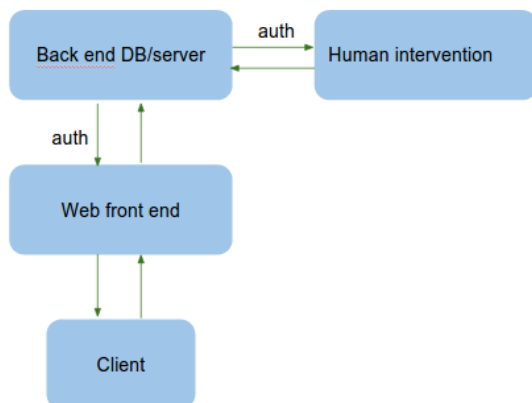
- 1) RealOffice shall provide a means for storing information regarding:
 - a) For each event:
 - i) Venue, date, time
 - ii) Venue specific requirements (like A/C)
 - iii) Material/food requirements
 - iv) Associated files
 - b) Static venue information such as amenities available, seating capacity
 - c) Real time venue information such as venue usage, resources being used
 - d) An archive of all past events and future scheduled events and associated information
- 2) RealOffice shall provide support for authenticated event creation, modification, cancellation and file access to the CSE staff and students
- 3) RealOffice shall provide the capability to view events by date, by venue, and other such filters.
- 4) RealOffice shall send scheduled reminders regarding events, as well as email notifications upon successful event creation or cancellation.
- 5) RealOffice shall notify users during event creation of any potential venue/time conflicts.

Non-functional requirements: The non functional requirements for RealOffice are the following.

- 1) RealOffice shall be platform independent. It shall be possible to have the client and server running on different platforms.
- 2) The back end server shall use SQL for managing database transactions.
- 3) The web interface shall be written using the django framework

V. USE CASE MODELLING

At a high level, the system can be modelled like this:



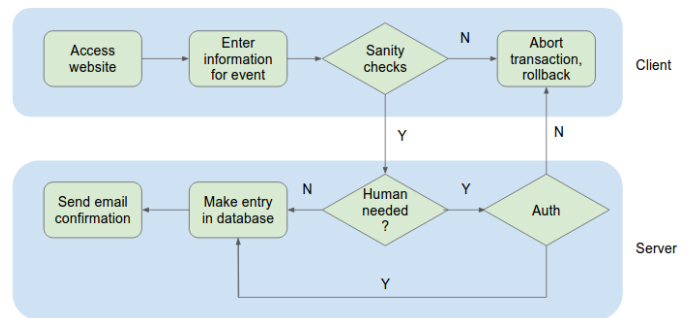
The end user interacts with the server indirectly through the web interface front end.

We consider the particular use case of booking a venue for a conference in the CSE department. The information entered may be as follows:

Event name	Guest lecture
Venue	CS 25
Time start	9:00 am
Time end	11:00 am
Venue requirements	Projector, PA system, A/C
Stationery requirements	(None)
File requirements	(files are uploaded here)
Expected audience	100
Food requirements	Tea/coffee for 100

The software will check here whether CS25 indeed has a projector, PA system, A/C, and seating capacity of at least 100. It also checks at this stage whether the venue will be available at the specified time.

The control flow for booking the venue would look like this.



REFERENCES

- [1] Deanna M. Needell, Jeff A. Stuart, Tamara C. Thiel, Sergiu M. Dascalu, Frederick C. Harris, Jr., "Software Requirements Specification of A University Class Scheduler"
- [2] Ian Sommerville, Software Engineering (9th edition)