**Recreation/Sporting Arena**

**Booking System**

**CS6359.002 Project Proposal**

**06/07/2018**

**Team:**

**(Group 2)**

**Members:**

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**Summary:**

**Urec** is a website that allows anyone to register and book slots in the sporting arena. A user who is registered on the site will be able to book slots for the sporting rooms. Once a user has registered for a room, the website will send an email to the user, notifying them of their appointment. This registered user, once logged into the system can view the booking history. This site will strive to make the user experience as smooth as possible, without overcomplicating things. Urecs main purpose is to provide a smooth and convenient way for users to book the sporting arenas across the campus, and the user receives a notification email of the confirmed booking. Should a user need to cancel a booking, Urec should allow admin to see booking history of all the users. Admin should be able to cancel the bookings of user, the user would get a email notification in case of cancellation.

**Why is Urec Needed ?**

Relevance:

Urec is needed because there is a lot of rush for booking sporting arena and be able to provide everybody a fair chance to enjoy the sporting facilities on campus. Studying is already hard enough, Playing and enjoyment can relieve some of the stress by allowing its user a smooth and user-friendly experience while booking the sporting arenas. Urec also lets its users rest easy knowing their appointment is made and that they will receive notification of the booking and a reminder about it in case they were to forget. Urec also allows the admin of the system to know the list of users who have booked the sporting arenas.

Background:

UTD does not have an online booking system for availing the recreational and sporting arenas around campus. The current system only provides information about the facilities available on campus. As currently the arenas are limited in number and the demand to access these are high, we are left with a situation where there is a chaos and uncertainty when it comes to accessing these places. Often people are left frustrated and have to come back again so that they would get a chance to access these facilities. To address the limited scope of the current system we need a centralized portal wherein one is aware of the available slots they can these facilities. Urec provides a convenient method to let users book slots for the sporting arena instilling in it a user friendly online registration system.

Detailed Problem Description:

Key **users** of this system are one of the following three categories:

1. Education Professional - i.e. a teacher, professor, or education administrator
2. Student
3. Outside customer
4. Website administrator

There are several processes that the Urec automates. It enables a user to easily book sporting arenas and see the available booking slots. It notifications system makes the user aware of the outage system. It lets the Admin see all the registered user. A user that needs to register for or cancel an appointment for a sporting arena should be able to do so by accessing a registration page UI. The website administrator should be able to handle issues with the site, and also be able to make updates easily when needed. Some of these changes could be made through an admin page UI or some utilizing some other method.

**Objectives:**

The objective of the project is to build a website that lets the professors to post the exams and the users to register for the exams.

Design Specifications:

Functional Requirements

* It Should be a multipage website
* Certain pages should only be accessible to certain types of users. For example, a user should only have access to registration page and their booking schedules, while the admin may need access to the user view and additional capabilities of cancelling and access to all user bookings.
* The splash page for the website should detail what the site is and about and why it is useful
* The splash page for the website should provide a log in UI
* A registered, logged-in user should be able to browse various recreational activities/ sporting arenas to choose from and register for them in the portal.
* A registered, logged-in user should be able to cancel the registration they have signed up to attend if action is taken before a reasonable deadline.

Non-functional Requirements

* Website should be easy and intuitive to use
* Website should be as secure as necessary
* Registrations should update in a timely fashion, and notifications should be sent within an acceptable time range.
* Website should strive to support mobile devices

Constraints & Limitations:

Constraints

* Time is a key constraint. Team members involved with implementing the site have busy schedules which must be factored into any plan.
* Organization is another constraint. Effectively dividing and assigning work to team members will be a challenge.
* Tools are also constraint, since we must ensure each team member is comfortable with the tools and technologies used to build the site, or that the tools can be learned in a short amount of time.

Limitations

* The site will not actually reserve a physical location to test for the user
* An education professional user may need to make requests to the site admin in order for the site to be correctly updated
* Email notifications will only be sent to notify the user that have completed an exam registration, and another will be sent the day before the user is to attend an exam.
* The site will most likely not support a large amount of concurrent users

**Approach:**

Project Steps:

1. Requirements engineering stage – determine what functionality the site will and will not need.
2. Analyze the system from the perspective of the different types of users – this is the step where we develop use cases and system interaction scenarios.
3. Continue gathering new requirements and ideas that would be considered for the successive iterations.
4. Design a rough solution that effectively maps requirements into actual expected functionality – we will develop diagrams, refine them, and iterate.
5. Determine what needs to be implemented from this design – preferably divide work into front end, back end, and other such categories.
6. Apportion work to teammates based on skill levels – if someone is more skilled at backend programming, they will be assigned work in this domain.
7. Assemble a rough, working website. Let each team member test it from their perspective, while recording feedback about any possible changes or additions that may be needed.
8. Make changes or add additional functionality based on feedback from step 7.
9. Create a plan for testing the website – divide testing into roles played by the different user types.
10. Test the site.
11. Make changes or updates if any issues found in step 10.
12. Finish project.

Solution Concepts:

Solution concepts can be best seen through diagrams, use cases, and interaction with rough prototypes of the system. Since agile methodology is being used, we want to generate a minimum viable product as early as possible, so we get a true sense of the system and iterate from there.

Performance Analysis:

* Website responsiveness
* Ease with which users can accomplish desired tasks
* The speed at which notification emails are sent out to the users of the system
* How quickly the database is updated when changes and additions are made

Alternatives:

* Instead of having a website where the site administrator has a lot of responsibilities, we could move to a site that is more automated and continuously integrated.
* Instead of having users and teachers register to use the system on a website hosted on the public Internet, we could have the system be internal to the organization using it so logins and registrations are more streamlined and secure. However, it is assumed users and teachers would still need to log in to the system, even internally.
* A mobile phone-based system that is an Android or iOS application
* A simple system where users register for exams through SMS

**Project Management:**

Duration:

9 Weeks (a semester)

Milestones:

Iteration 1: (June 7,2018 - June 21,2018)

* Gathering requirements. (FULL TEAM)
* Designing Database schema and developing use-cases. (VINAY)
* Designing the front-end of the website. (AKASH)
* Designing the back-end of the website (PRATHIK)
* Designing full system interaction diagrams (ROHIT)

Iteration 2: (June 21,2018 - July 10, 2018)

* Implement functionalities that lets the admin to create and remove arenas and slots, and send push notifications to all users (ROHIT & VINAY)
* Implement the front-end of the application (PRATHIK & AKASH)
* Implement the back-end of the application (PRATHIK AND VINAY)
* Updating the database with initial data (ROHIT)
* Perform testing on the admin functionality to create, remove and modify arenas and slots. (FULL TEAM)

Iteration 3: (July 10, 2018 – July 26, 2018)

* Implement user functionality to book and cancel slots for different sports arenas (FULL TEAM)
* Perform total system testing (FULL TEAM)

**Qualifications:**

Akash Bharadwaj:

Akash received his Bachelor of Engineering from RV College of Engineering. He is currently pursuing an MSCS degree at UTD. His CS interests include Machine Learning, Web Development as well as Data Structures and Algorithms. He has previous experience building, maintaining, testing, and debugging web applications. His skills will greatly contribute to this project.

Prathik Ganiga:

I’ve done my Bachelor’s in National Institute of technology Karnataka. I am Currently pursuing a Master’s in Computer Science degree with specialization in Intelligent Systems at University of Texas at Dallas. I’ve done courses such as Web programing languages and database design that will be helpful in this project.

Sarvesh Pandit:

I’ve done my Bachelor’s in Information Technology from the University of Mumbai. Currently pursuing a Master’s in Computer Science degree with specialization in Data Science at University of Texas at Dallas. I’ve done courses such as Software Engineering and Object-Oriented Programming in my Under Graduation which will be helpful for this project.

Aditi Venugopalan:

I received my Bachelors in Information Technology from Anna University, Chennai, India. I am currently enrolled in the Masters in Computer Science program at the University of Texas at Dallas. As part of my Bachelors program, I have learnt the basic concepts of Object Oriented Analysis and Design and Software Engineering. I have also built a few web applications, which have helped me gain the skills that are needed to contribute to this project.