**Recreation/Sporting Arena**

**Booking System**

**CS6359.0U1 Project Proposal**

**06/07/2018**

**Team:**

**(Group 2)**

**Members:**

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**Prathik Ganiga**

**Rohit**

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**Summary:**

**UrecPlay** 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. Once a user has made the booking, the website will send an email to the user, notifying them of their reservation. This registered users, once logged into the system can view their booking history. UrecPlay’s main purpose is to provide a smooth and convenient way for users to book the sporting arenas across the campus. Should a user need to cancel a booking they should be able to do so. UrecPlay should allow admin to see booking history and be able to cancel the bookings of users. Once the booking is cancelled users would get an email notification.

**Why is UrecPlay Needed?**

Relevance:

UrecPlay is required to provide everybody a fair chance to enjoy the sporting facilities on campus as there is a lot of rush for booking sporting arena. Studying is already hard enough, playing should not be. UrePlay can relieve some of the stress by giving its user a smooth and user-friendly experience while booking the sporting arenas.

Background:

UTD does not have an online booking system for availing the recreational and sporting arenas on campus. The current system only provides information about the facilities available on campus. When it comes to availing these facilities often people are left frustrated and are forced to reschedule their plan and hope that they could get an open slot. UrecPlay provides a convenient and fair system to address this issue.

Detailed Problem Description:

Key **users** of this system are one of the following 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 UrecPlay automates. It enables users to easily book sporting arenas and see the available booking slots. The notification system makes the user aware of any maintenance that might come up. It lets the Admin see all the registered users. A user that needs to register or cancel an appointment should be able to do so. The website admin should be able to handle issues with the site and should be able to make updates easily when needed.

**Objectives:**

The objective of the project is to build a website that lets its users book the sporting arenas in a fair and hassle-free manner.

Design Specifications:

Functional Requirements

1. It Should be a multipage website.
2. 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.
3. 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.
4. 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.
5. The splash page for the website should detail what the site is and about and why it is useful.
6. The splash page for the website should provide a log in UI.

Non-functional Requirements

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

Constraints & Limitations:

Constraints

1. Time is a key constraint. Team members involved with implementing the site have busy schedules which must be factored into any plan.
2. Organization is another constraint. Effectively dividing and assigning work to team members will be a challenge.
3. 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

1. The site will most likely not support many of concurrent users.
2. The site would only allow you to make a booking when you are logged in to the system.

**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.
* A mobile phone-based system that is an Android or iOS application

**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 Bangalore. 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:

Rohit:

Rohit received his Bachelor of Engineering from NMIT, Bangalore in Electronics engineering. He is currently pursuing his MS in computer Science with keen interest in machine learning and Statistics. He completed courses like database design that will come in handy in this current project.

Vinay Potla:

I’ve done my Bachelor’s in National Institute of technology Calicut. I am 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 Web programing languages and database design that will be helpful in this project.