**ABSTRACT**

In any of the organization or enterprise, it is quite obvious to have certain management activities involved apart from its core work management. For example: Gardening, Vehicle Parking system, Employee Health management, Welfare Management, Cultural Events Management etc. One of the main area which is very much essential for any employee in organization is sports or extra-curricular activities. Any organization could be considered as incomplete without having sports activities or sports events being conducted. In order to manage or cope up things of all such sports related activity in organized way, we need to have well specialized tool. Without having any tool, management would become cumbersome and headache to control manually by any staff. Sports complex is one of the solution which solves this problem and helps any Sports admin staff or employees to manage their daily basis sports activities in organization. It includes intelligence to deduct any cost due for any activity to be tracked in payroll process also. We demonstrate how to apply the proposed tool to securely and efficiently manage all activities in single centralized tool for any organization.

**CONTENTS**

**CHAPTER: 1**

**INTRODUCTION**

* 1. **About Project**

Let us imagine a scenario where an Organization A has many sports activities like Gymnasium, Badminton Court, Billiard Court, Tournaments being conducted on occasionally, Indoor game activities etc. Let us say, to manage all these activities for employees there would be some Sports Admin staff. And also, let us assume, there would be some cost needs to be deducted from any employee using any of these activities. So staff admin has to manage ledger or paper records who has involved in which activity and he has to make an entry in ledger for all corresponding participation. Indeed for each module, he might needs to maintain separate list of entries or record. The same records has to be intervened and processed by Payroll team on every month to deduct respective resource usages by any employee. Though it can be done in small or minor organization which contains very few employees, imagine a very big organization containing thousands of employees and maintaining record on every resource and same being processed by payroll team is not at all a feasible task.

Secondly, if employer size is big, it is very difficult to maintain the rush of employees on any resource usage. For example: In organization A, let us say badminton court is bookable only between specified timings in a day. In order to book that resource, there could be huge queue or rush by any employee. And also any employee E will not get to know that if any resource is being already booked by any other employee unless that employee E contacts Site Admin. And all these activities will be bottleneck to manage for any sports admin staff all the time.

With manual management process, it is also difficult to take a report on monthly or dates range basis in order to track total income or maintenance cost. It involves manual calculation of cost and intervention.

So the described problem can be solved by having centralized internet/intranet application which manages all activities in simple and organized manner. The main advantage of having such online tool is, it reduces manual intervention and ease by performing all automatic calculation and report generation. It also gives live feedback to users on which resource has been booked by which user. So that it may also reduce any employee contacting staff admin for booking.

We have named this online tool as **SportsComplex**, since it manages all activities being controlled or managed in any sports complex of any organization. The main idea for having this tool is to make all sports activity management to be available online and to make easy management of the same which reduces manual requirement.

The main feature it contains are: Resource Management (Badminton and Billiard), Gymnasium, and Tournament Management. Apart from these, it also report generation mechanism on monthly basis, it gives feedback immediately to payroll team via mail to deduct on any employee resource usage. It contains provision to view any NEWS or gallery photos being uploaded by Sports Admin.

Perhaps, with this tool end to end management of sports activities becomes systematic and ease to any organization. It makes management online, easily accessible to any employee and can be accessed from anywhere. Since it contains centralized database for all sports activities, any changes in system or information in database by admin will be rendered to all employees immediately via SPORTS COMPLEX tool.

* 1. **Company details**

C:\Mahesh\Others\Projects\SportsComplexProject\Git\sportscomplex\SportsComplex.Application\Images\logo_larsen_toubro.jpg

Larsen & Toubro Limited is an Indian largest engineering and construction company offering its hands in IT services, few hardware products and in many critical sectors like construction. Its headquarters is in Mumbai, Maharashtra, India. It was founded by Danish Engineers named Henning Holck Larsen and Soren Kristian Toubro. L&T has many major subsidiaries and joint ventures. Few are mentioned below.

* L& T Construction Equipment Limited
* L& T Technology Services (TS)
* L&T Finance
* L& T Metering & Protection System (MPS)
* L&T InfoTech etc.

L&T has its one of its campus in Mysore covering around 40 acres of industrial land. It has five modules which will work for different business units. The campus is ecofriendly and inherits many conservation principals like rain water harvesting, vermicomposting etc.

L&T Mysore houses L&T Technology Services (TS), Metering & Protection System (MPS) and L&T InfoTech. It also has very good and well maintained sports complex which contains Hi-Fi Gymnasiums, Football ground, Volleyball court, basketball court, badminton court, and many indoor game resources.

Hence, it is very much needed and appropriate to have our proposed system of online SPORTS COMPLEX tool to be leveraged in L&T Mysore campus.

**CHAPTER: 2**

**LITERATURE SURVEY**

1. **Existing System and Proposed System:**
2. **Existing System:**

Manual process of management and intervention is one of the mechanism where sports admin staff all activities and records in bundle of paper records. Any employee who needs participation on any sports activity needs to contact Sports admin staff and register every time.

L&T has its intranet website which contains management activities in one site. Employee who wants to participate in any of the activity has to login to that intranet site and navigates to respective module and register.

1. **Disadvantages of existing system:**

There are many disadvantages in existing system. Few points are mentioned below,

* In manual management process, people or resource management would become overhead for sports admin.
* Manual calculations are more prone to error.
* Paper record maintenance is not an efficient management.
* Time consuming process and could cause queue on limited resource booking activities.
* Payroll team has to go through all paper records every month to deduct amount for employee resource usage.
* Existing Intranet site may give unwanted information to end user which he doesn’t want to know or navigate through.
* Intranet Site is integrated with too many management modules and there is no isolated tool for sports activities management which can be managed by sports admin.
* No centralized database for sports management alone and maintenance depends on intranet site.
* Live feedback is not available by end user to administrators and payroll team.
* Report generation could be an issue in manual process of management.

1. **Proposed System:**

SportsComplex being an online intranet tool which manages all activities being controlled or managed in any sports complex of any organization. It provides efficient online solution to the end user who wants to utilize sports resource in any organization. It makes administrators and payroll staff jobs easier and precise reducing error introductions. In this tool, we can have isolated centralized database which can be maintained separately by sports administrator alone. End user need not have to visit any other info or navigate away. Website maintenance can be done by administrator regardless of other portal maintenance. It makes end user to book resources and report generation easily available at his hand tips. Moreover, we can have more user friendly website which will give an end user a very good user experience which will in turn induces him to utilize the resource more often.

The main feature it contains are: Resource Management (Badminton and Billiard), Gymnasium, and Tournament Management. Apart from these, it also report generation mechanism on monthly basis, it gives feedback immediately to payroll team via mail to deduct on any employee resource usage. It contains provision to view any NEWS or gallery photos being uploaded by Sports Admin.

1. **Advantages of proposed system:**

Leveraging proposed system will have many advantages over traditional management system. Few points are mentioned below.

* Since all resource management is online, there will not be any overhead for sports admin.
* Calculations will be more precise and correct since it is done by tool and with no manual calculation.
* Removal of paper usages.
* No rush for booking limited resource activities.
* Automatic feedback goes to payroll team by which there work is reduced for every month’s employee payroll update.
* It provides more precise, only necessary and specific information to end user.
* Isolated intranet website which is meant only for sports activities.
* Provides centralized database which can be maintained by Sports administrator alone.
* Live feedback is available to end user, administrators and as well as payroll team.
* Report generation is automatic and provides feasibility to generate report monthly basis or date ranges.

1. **Feasibility Study:**

On any project cycle, it is very much necessary to do feasibility study which gives more information on Risks, Cost Estimation and Time Estimation of a project. By doing so, we can actually derive at set of actions which can be taken on early stages of project implementation. This will reduce any risk or impact that can happen at later stages of the project cycle. Mainly, we will perform these studies in three perspectives. They are mentioned and briefed as below:

* ECONOMICAL FEASIBILITY
* TECHNICAL FEASIBILITY
* SOCIAL FEASIBILITY
  + 1. **Economical Feasibility:**

Here, we analyze where is the need of financial account and how efficient will it become on leveraging the product. Since it’s a website development, it doesn’t involve any hardware costs but it requires some development software’s or IDE for implementation. Once its deployment is done, it will actually improves financial level of organization in some way in small manner if not in large quantity. Because, it reduces manual efforts in managing and maintaining sports resource which in turn increase organizations savings or turn over we can say,

* + 1. **Technical Feasibility:**

Looking into technical aspects involved in the project, it makes implementation in cleaner way. Since there are wide and more technologies available to do website development, it makes more feasible to develop a website. In fact, many tools are readily available which can be made use in project cycle to ease our implementation phase of project cycle. One good example for that, is using Resharper along with Visual Studio integration which will help in code refactoring and reducing bugs.

* + 1. **Social Feasibility:**

Though it’s an intranet website, we need to have a look at social vulnerable and loop poles which can incur if we don’t secure employee or resource information to the outside world. We need to think of risky cyber-attacks or hacks that can happen via social media websites like Facebook, Twitter etc., which will lead in loss of organization data at last. We need to put proper authentication and authorization in place to avoid those kind of attacks from outside world. But having said that, we should not make things more complex for the end user as well. At the end of the day, any end user using our SPORTS COMPLEX website should feel our site as easier as any of other social media websites.

1. **Tools and Technologies used:**
   * 1. **Tool Used:**

Below are the tools used for software implementation,

* Visual Studio IDE 2013
* Resharper 10.0.1
* SQL Management Studio 2008
  + 1. **Technologies Used:**

Listed are the technologies used for website development,

* .Net Framework 4.5
* ASP.NET MVC Architecture
* C# Language
* SQL Server Query

1. **Hardware and Software Requirements:**
   * 1. **Hardware Requirements:**

System : Pentium IV 2.4 GHz or above

Hard disk : Minimum 40GB or above

RAM : 2GB or above

* + 1. **Software Requirements:**

Operating System : Windows XP or above

Coding Language : C#. Net

Coding IDE : Visual Studio 2013 (with Resharper integration)

Database Server : MS SQL Server 2008

Database Tool : MS SQL Management Studio

Browser : Google Chrome (Recommended)

**CHAPTER: 3**

**SOFTWARE REQUIREMENTS SPECIFICATION**

* 1. **Users:**
  2. **Functional requirements:**
  3. **Non-functional requirements:**

**CHAPTER: 4**

**SOFTWARE REQUIREMENTS SPECIFICATION**

* 1. **System perspective:**
  2. **Context diagram:**

**CHAPTER: 5**

**DETAILED DESIGN**

* 1. **Use Case Diagrams:**
  2. **Sequence Diagrams:**
  3. **Collaboration Diagrams:**
  4. **Activity Diagrams:**
  5. **Database Design:**
  6. **Class Diagrams:**

**CHAPTER: 6**

**IMPLEMENTATION**

* 1. **Screenshots:**

**CHAPTER: 7**

**SOFTWARE TESTING**

**CHAPTER: 8**

**CONCLUSION**

Sports Complex is a software piece made to ease life of any sports management or similar kind of activity management in any of the organization. It gives an end user or employee a very good user experience on utilizing the sports resource and thus by inducing its production or turn over. It adds a huge value to those organizations which contains many employees and having so many sports resources and tournaments being conducted. Nor only to the employee, it also helps payroll staff by providing then a required data for their payroll process. They can easily extract any months report and process it.

Main key advantage of having such system or software is, it reduces almost all manual intervention where ever needed in managing sports activities. It also keeps database centralized which can be maintained by administrator at any point of time. It gives isolation from other management tools or intranet websites.

To summarize in one statement, SPORTS COMPLEX is an intelligent online solution which replaces an overhead manual job with systematic management of sports resource or utilities in any of the organization.

**CHAPTER: 9**

**FUTURE ENHANCEMENTS**

Though our implemented SPORTS COMPLEX feature is well enough to manage any sports management activity, it is always good to have future enhancements set in place to improvise its scope and usage. Few of them are listed below.

* Admin Rights Module can be added for Admin users where he can give admin rights easily to other employees whom he wants.
* Admin approval for employee registration: We can provide admin module where he can see all new registration for SPORTS COMPLEX and approves it. Employee should be able to login once admin approves its registration request. By doing this, it becomes more secure.
* Improve application security level by encrypting data over a network.
* We can get rid of employee registration process if we integrate our database to existing employee database of company.
* Connect to payroll database: Instead of sending live feedback to payroll team via mail, we can connect to payroll database which will directly deducts amount from employee payroll package on resource usage.
* Module for admin to choose resource settings. We can provide more option to admin to control resource settings like number of badminton courts, slots etc.
* We can also transit to cloud storage instead of maintaining local SQL database. This will help in less maintenance from administrator on database.

**Appendix A**

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**Appendix B**

**USER MANUAL**