INFORMATICS PRACTICES PROJECT

**CRICKET LEAGUE MANAGEMENT SYSTEM**

SUBMITTED BY

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CLASS XII-A

ACKNOWLEDGEMENT

I undertook this Project work, as the part of my XII-Informatics Practices course. I had tried to apply my best of knowledge and experience, gained during the study and class work experience. However, developing software system is generally a quite complex and time-consuming process. It requires a systematic study, insight vision and professional approach during the design and development. Moreover, the developer always feels the need, the help and good wishes of the people near you, who have considerable experience and idea.

I am very much thankful to our Principal **Mr. N S Srinivas**. I would like to extend my sincere thanks and gratitude to my teacher  
**Ms. Geeta Yadav** for giving valuable advice and moral support to develop this software.

I would like to take the opportunity to extend my sincere thanks and gratitude to my parents for being a source of inspiration and providing time and freedom to develop this software project.

I also feel indebted to my friends for the valuable suggestions during the project work.

INTRODUCTION

This software project is developed to automate the functionalities of a Cricket Tournament data management. The purpose of the software project is to develop a program which provides a friendly interface for the user to create, edit and get league data according to their choice. This program mainly brings forth the usage of GUI programming in the daily usage over the network.

This software mainly consists of a computerized database, a collection of inter-related tables for a particular subject or purpose, capable to produce different reports relevant to the user. An application program is tied with the database for easy access and interface to the database. Using Application program or front-end, we can store, retrieve and manage all information in proper way.

This software, being simple in design and working, does not require much of training to users, and can be used as a powerful tool for the automating league data.

During coding and design of the software Project, Java NetBeans IDE, a powerful front-end tool is used for getting Graphical User Interface (GUI) based integrated platform and coding simplicity. As a back-end a powerful, open source RDBMS, My SQL is used as per requirement of the CBSE curriculum of Informatics Practices Course.

Objective

The objective of this project is to develop a cricket management software that will help users to manage their own cricket tournament/cricket leagues even with minimum knowledge about cricket.

This project “CricketPro” will serve the purpose of many cricket lovers willing to come together to organize the cricket matches and involve in motivating many of the enthusiastic cricket players eager to show their talent. This cricket tournament application system allows users to create, edit, manage their cricket tournament details like score, match fixtures, player’s information, videos, etc.

Users of all kinds including members of a cricket team of their current organization, among the group of friends in the street who play cricket and members of the cricket team of your college/school will be manage your tournament or matches in more easy way through this application.

### FEATURES:

* Easy creation of new leagues
* Secure league management
* Easy updating of team squad
* Update players records
* Automatic stats generator for teams
* Automatic standings generator for divisions/leagues

Theoretical Background

## JAVA

### What is JAVA?

Java is a general purpose object oriented programming language. It is the first programming language that is not tied to any particular hardware or operating system .The language is based on the concept of an object. Java is highly derived from C++. Most striking feature of the language is that it is platform neutral language.

There were five primary goals in the creation of the Java language:

* It should use the object-oriented programming methodology.
* It should allow the same program to be executed on multiple operating systems.
* It should contain built-in support for using computer networks.
* It should be designed to execute code from remote sources securely.
* It should be easy to use and borrow the good parts of older object-oriented languages like C++.

### FEATURES OF JAVA

* Compiler and Interpreted
* Platform independent
* Simple
* Secure
* Familiar
* Portable
* Object-Oriented
* Robust
* Multithreaded
* High performance
* Distributed
* Dynamic

### SWING

SWING is a set of classes that provides powerful and flexible functionality. In addition with several components provided by AWT, swing supplies several exciting additions, including tabbed panes, scroll panes, trees and tables. It also changes the images as the state of any component changes. Swing is built upon the foundation of the AWT. Swing components are written entirely in Java and therefore are Platform-independent .Swing is also termed also light-weight and provide pluggable look and feel.

There are 2 Swing classes that are quite important:

* **JFrame** extends the AWT class Frame. It contains additional features that enable it to support Swing components.
* **JComponent** extends the AWT component and Container classes. It is the top level class for all Swing components and provides Swing pluggable look and feel.

## DBMS

### Introduction and Concepts:

A database is a collection of information related to a particular subject or purpose, such as tracking customer orders or maintaining a product collection. Using any RDBMS application software like MS SQL Server, MySQL, Oracle, Sybase etc., you can manage all your information from a single database file. Within the file, divide your data into separate storage containers called tables. You may and retrieve the data using queries.

A table is a collection of data about a specific topic, such as products or suppliers. Using a separate table for each topic means you can store that data only once, which makes your database more efficient and reduces data-entry errors. Table organises data into columns (called fields) and rows (called records).

A Primary key is one or more fields whose value or values uniquely identify each record in a table. In a relationship, a primary key is used to refer to specific record in one table from another table. A primary key is called foreign key when it is referred to from another table.

To find and retrieve just the data that meets conditions you specify, including data from multiple tables, create a query. A query can also update or delete multiple records at the same time, and perform built-in or custom calculations on your data.

### STRUCTURED QUERY LANGUAGE (SQL)

SQL is not a procedural language. It is not used to define complex processes; we can use SQL to use commands that define and manipulate data.

SQL statements fall into two groups:-

● Data Definition Language (DDL) – DDL statements are used to describe the tables and the data they contain. The subset of SQL statements used for modeling the structure (rather than the contents) of a database or cube. The DDL gives you the ability to create, modify, and remove databases and database objects.

● Data Manipulation Language (DML) – DML statements that are used to operate on data in the database. These are statements that allow you to create or alter objects (such as tables, indexes, views, and so on) in the database. The subset of SQL statements used to retrieve and manipulate data.

Here are some of the quires defined:-

**SELECT** - SQL statement used to request a selection, projection, join, query, and so on, from a SQL Server database.

**PRIMARY KEY** – Primary key constraints identify the column or set of columns whose values uniquely identify a row in a table. No two rows in a table can have the same primary key value. You cannot enter a NULL value for any column in a primary key.

**INSERT** - The Insert logical operator inserts each row from its input into the object specified in the Argument column. To insert the data into a relation we either specify a tuple to be inserted or write a query.

**DELETE** - The Delete logical operator deletes from an object rows that satisfy the optional predicate in the Argument column. We can delete only whole tuples; we cannot delete values on only particular attributes.

**UPDATE** - The Update logical operator updates each row from its input in the object specified in the Argument column. It provides a way of modifying existing data in a table

## DATABASE CONNECTIVITY

The Java Database Connectivity (JDBC) API is the industry standard for database-independent connectivity between the Java programming language and a wide range of databases – SQL databases and other tabular data sources, such as spreadsheets or flat files. The JDBC API provides a call-level API for SQL-based database access.

JDBC technology allows you to use the Java programming language to exploit "Write Once, Run Anywhere" capabilities for applications that require access to enterprise data. With a JDBC technology-enabled driver, you can connect all corporate data even in a heterogeneous environment.

System Implementation

While developing the software, the following configuration was used:

**Operating System:** Windows 10 Pro 64-bit (10.0, Build 14393)

**Language:** English (Regional Setting: English)

**System Manufacturer:** Gigabyte Technology Co., Ltd.

**Processor:** Intel® Core™ i5-6200U CPU @ 3.10GHz (4 CPUs), ~3.1GHz

**Memory:** 8192MB RAM

**Available OS Memory:** 8090MB RAM

**Windows Dir**: C:\WINDOWS

**DirectX Version:** DirectX 12

**Display Memory:** 4173 MB

**Front-end Development environment**: Java NetBeans IDE 8.1

**Back-end Server:** MySQL 5.7

**Documentation:** Microsoft Office Professional Plus 2013: Word

INSTALLATION

### HARDWARE REQUIREMENTS:

* Intel Pentium/Celeron or similar processor based PC at Client/Server end.
* 128 MB RAM and 4GB HDD space (for Database) is desirable.
* Standard I/O devices like Keyboard and Mouse etc.
* Printer is needed for hard-copy reports.
* Local Area Network(LAN) is required for Client-Server Installation

### SOFTWARE REQUIREMENTS:

* Windows XP or Windows 7 (32-bit and 64-bit) or Windows 8 (32-bit and 64-bit) or Windows 10 (32-bit and 64-bit)
* NetBeans Version 7.2 or higher with JDK and JVM.
* MySQL Community Server Version 5.1 or higher
* MySQL Java Connector Library 5.0 or higher

Bibliography

In order to work on this project titled ***CricketPro,*** the following sources were used as references during the various phases of the development of this project.

* The Complete Reference Java 2.0 - by Shildit
* MySQL, Black Book - by Steven Holzner
* http://www.mysql.org/
* http://www.netbeans.org/
* Informatics Practices for class XII - by Sumita Arora
* Together with Informatics Practices – by Rachna Sagar
* Online communities dedicated to Java and SQL

Other than these sources, the suggestions and supervision of my teacher and my class experience also helped me to develop this software project.