

Chapter 1

INTRODUCTION

Cricket is a sport that generates a large number of statistics. Statistics are recorded for each player during a match, and aggregated over a career. At the professional level, statistics for Test cricket, one-day internationals, and first-class cricket are recorded separately. However, since Test matches are a form of first-class cricket, a player's first-class statistics will include their Test match statistics – but not vice versa.

Nowadays records are also maintained for List A and Twenty20 limited over matches. These matches are normally limited over games played domestically at the national level by leading Test nations. Since one-day internationals are a form of List A limited over matches, a player's List A statistics will include their ODI match statistics – but not vice versa.

- Innings (I): The number of innings in which the batsman actually batted.
- Not outs (NO): The number of times the batsman was not out at the conclusion of an innings they batted in.
- Runs (R): The number of runs scored.
- 4's: The number of 4's the batsmen has scored.
- 6's: The number of 6's the batsmen has scored.
- Highest score (HS/Best): The highest score ever made by the batsman.
- Batting average (Ave): The total number of runs divided by the total number of innings in which the batsman was out.
- $Ave = \text{Runs} / [I - NO]$ (also Avge or Avg.)
- Centuries (100): The number of innings in which the batsman scored one hundred runs or more.
- Half-centuries (50): The number of innings in which the batsman scored fifty to ninety-nine runs (centuries do not count as half-centuries as well).
- Balls faced (BF): The total number of balls received, including no balls but not including wides.
- Strike rate (SR): The average number of runs scored per 100 balls faced. ($SR = [100 * \text{Runs}] / BF$)

Chapter 2

SYSTEM REQUIREMENTS

2.1 Hardware requirements -

- Disk space of 500Mb
- RAM (1Gb or more)

2.2 Software requirements -

- Eclipse Mars 2
- JDK
- Windows 7/8/8.1/10
- MYSQL
- MS WORD

Chapter 3

PROBLEM DESCRIPTION

CRICKET PLAYER STATISTICS DATABASE

Player Statistics depends on the number of matches the player has played, number of runs the player has scored. Matches and Tournaments will be conducted by some International Cricket boards. In this Database, the user can add or delete Players. The user can also update the Statistics of Players.

Rank and Statistics of all Players are described in the given tables.

- PLAYER
- TOURNAMENT
- FIXTURES
- RANK
- STATISTICS

The table details are as follows:

Table 3.1 PLAYER

COLUMN NAME	DATATYPE & SIZE	CONSTRAINTS	DESCRIPTION
P_ID	INT	PRIMARY KEY	Accepts integer type data
P_NAME	VARCHAR(20)		Accepts player name
GENDER	VARCHAR(20)		Player gender
AGE	INT		Accepts integer type. i.e Player age
HEIGHT	VARCHAR(20)		Accepts height of player
ROLE	VARCHAR(20)		'BATSMAN' or 'BOWLER'
COUNTRY	VARCHAR(20)		Accepts coountry name

Table 3.2 TOURNAMENT

COLUMN NAME	DATATYPE & SIZE	CONSTRAINTS	DESCRIPTION
T_ID	VARCHAR(20)	PRIMARY KEY	ID of the tournament
T_NAME	VARCHAR(20)		name of the tournament
TYPE	VARCHAR(20)		'ODI' or 'T20' or 'TEST'
YEAR	INT		Year of tournament
LOCATION	VARCHAR(20)		Tournament played in

Table 3.3 FIXTURES

COLUMN NAME	DATATYPE & SIZE	CONSTRAINTS	DESCRIPTION
F_ID	VARCHAR(20)		Fixture ID
P_ID	INT	REFERENCES P_ID FROM PLAYER	Player ID
P_NAME	VARCHAR(20)	REFERENCES P_NAME FROM PLAYER	Player name
T_ID	VARCHAR(10)	REFERENCES T_ID FROM TOURNAMENT	Tournament ID
RUNS	INT		No of runsby the player
WICKETS	INT		No of wickets by the player

Table 3.4 RANK

COLUMN NAME	DATATYPE & SIZE	CONSTRAINTS	DESCRIPTION
P_ID	INT	PRIMARY KEY	Player ID
P_NAME	VARCHAR (50)		Player Name
ODI	INT		Rank in ODI
T 20	INT		Rank in T 20
TEST	INT		Rank in TEST

Table 3.5 STATISTICS

COLUMN NAME	DATATYPE & SIZE	CONSTRAINTS	DESCRIPTION
P_ID	INT	PRIMARY KEY	Player ID
P_NAME	VARCHAR(20)	REFERENCES P_NAME FROM PLAYER	Player Name
MATCHES	INT		Total Matches
RUNS	INT		Total Runs
WICKETS	INT		Total Wickets
HUNDREDS	INT		No. of Centuries
FIFTIES	INT		No. of Half Centuries
HIGH SCORE	INT		Highest score scored
STRIKE RATE	VARCHAR(20)		Strike rate of the Player
AVERAGE	VARCHAR(20)		Average of the Player

Chapter 4

SYSTEM DESIGN

3.1 ER DIAGRAM : It is a Entity-Relationship model composed of entity types and specifies relationships that can exist between instances of those entity types.

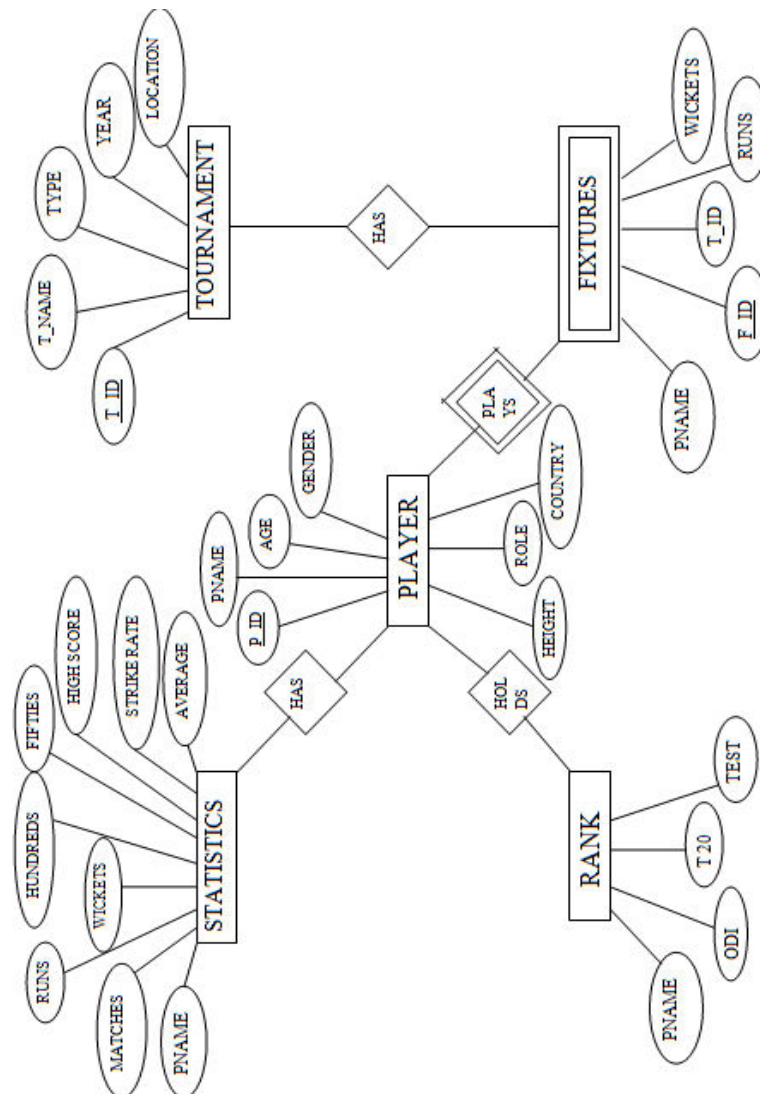


Fig 3.1: ER diagram for Cricket Player Statistics Database

3.2 SCHEMA DIAGRAM : A representation of logical configurations of all or part of a relational database.

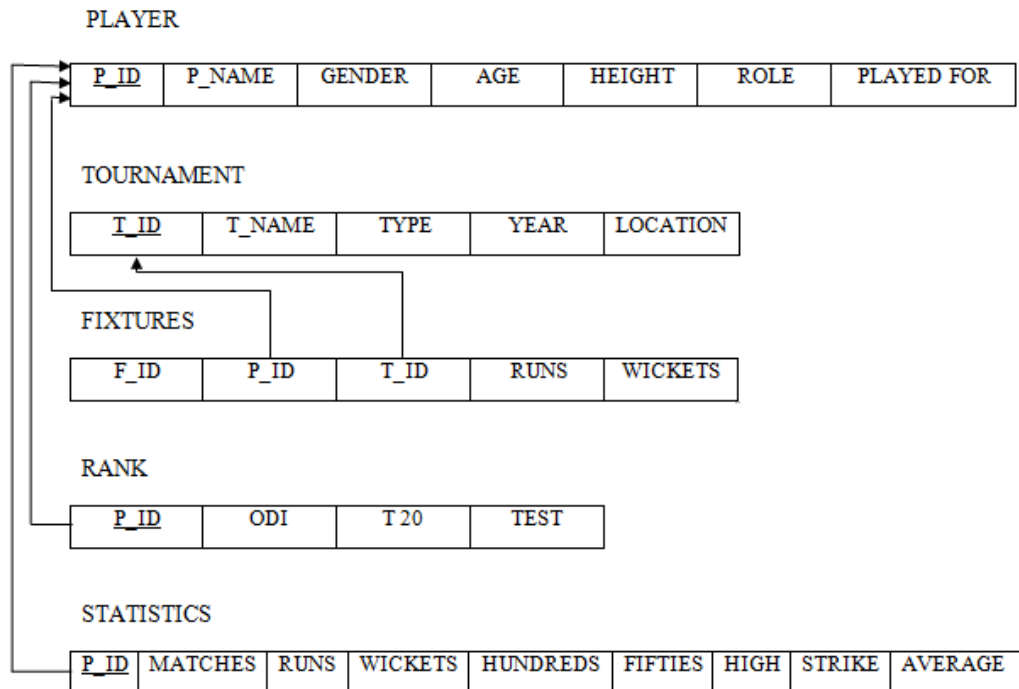


Fig 3. 1:Schema diagram for Cricket Player Statistics Database

NORMALIZATION FORMS

FIRST NORMAL FORM (1NF) : As per First Normal Form, no two Rows of data must contain repeating group of information i.e. each set of columns must have a unique value, such that multiple columns cannot be used to fetch the same row. Each table should be organized into rows, and each row should have a primary key that distinguishes it as unique.

SECOND NORMAL FORM (2NF) : As per the Second Normal Form there must not be any partial dependency of any column on primary key. It means that for a table that has concatenated primary key, each column in the table that is not part of the primary key must depend upon the entire concatenated key for its existence. If any column depends only on one part of the concatenated key, then the table fails Second normal form.

THIRD NORMAL FORM (3NF) : Third Normal form applies that every non-prime attribute of table must be dependent on primary key, or we can say that, there should not be the case that a non-prime attribute is determined by another non-prime attribute. So this *transitive functional dependency* should be removed from the table and also the table must be in Second Normal form

Above tables follows all three Normalization Forms.

Chapter 5

IMPLEMENTATION

Following code is used to establish connection with the back-end Database :

```
import java.sql.*;
import javax.swing.JOptionPane;
public class jconnect
{
    Connection conn=null;
    public static Connection connectdb()
    {
        try{
            Class.forName("com.mysql.jdbc.Driver");

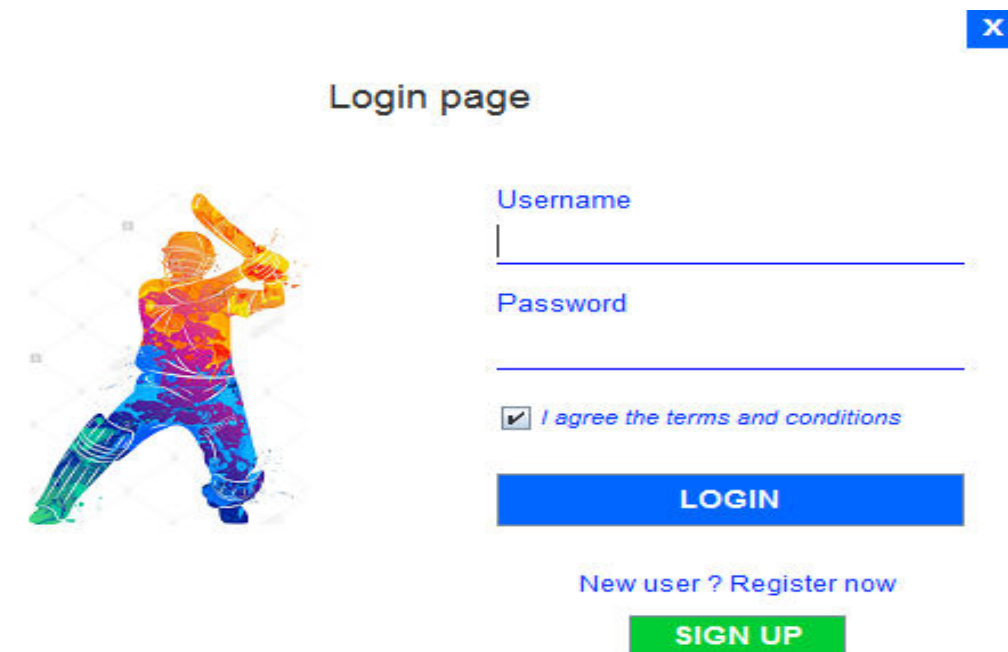
            Connectionconn=DriverManager.getConnection("jdbc:mysql://127.0.0.1/demo","root","Q
            WERTY");

            JOptionPane.showMessageDialog(null,"connected to database");
            return conn;  }
        catch(Exception e)
        {
            JOptionPane.showMessageDialog(null, e);
            return null;
        }
    }
    public static void main(String args[]) throws IOException{
    }}
```

Chapter 6

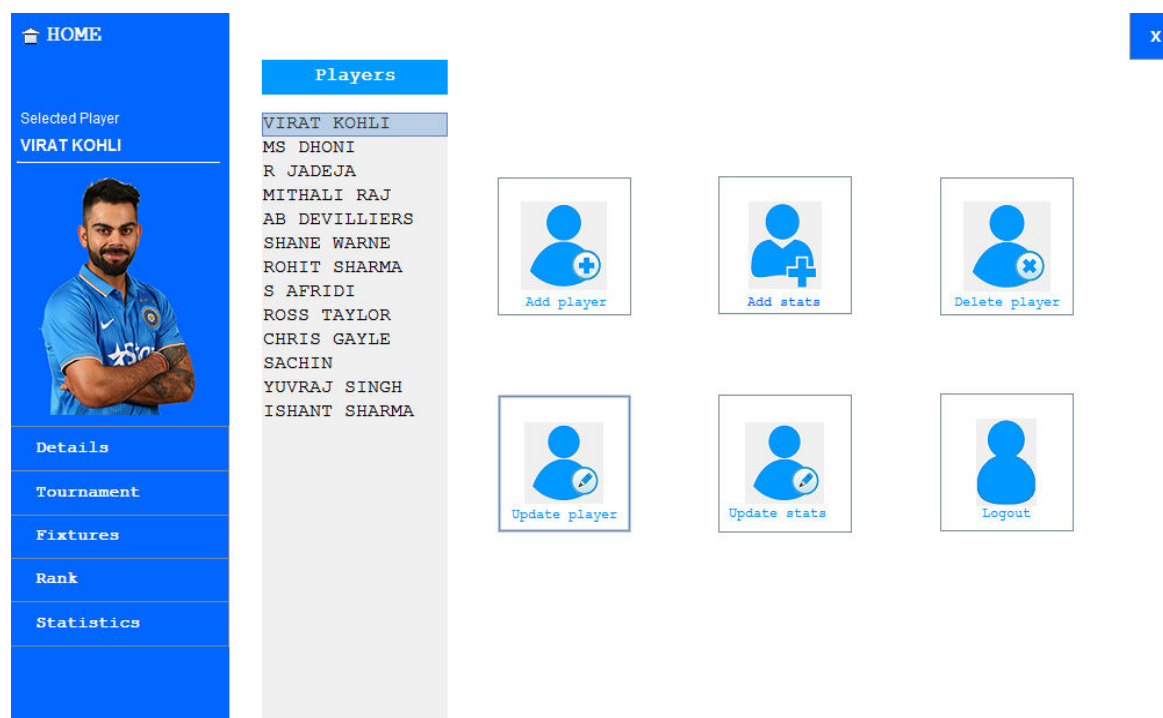
SCREENSHOTS

Fig 6.1 LOGIN



The screenshot shows a login page with a blue header bar containing a close button (X). The page title is "Login page". On the left, there is a stylized illustration of a cricketer in a batting stance. On the right, there are two input fields labeled "Username" and "Password". Below the password field is a checkbox labeled "I agree the terms and conditions". A blue "LOGIN" button is positioned below the checkbox. At the bottom, there is a link "New user ? Register now" and a green "SIGN UP" button.

Fig 6.2 HOME



The screenshot shows the home page of the application. It features a blue sidebar on the left with a "HOME" header and a list of menu items: "Details", "Tournament", "Fixtures", "Rank", and "Statistics". The main content area has a "Players" header and a list of player names: "VIRAT KOHLI", "MS DHONI", "R JADEJA", "MITHALI RAJ", "AB DEVILLIERS", "SHANE WARNE", "ROHIT SHARMA", "S AFRIDI", "ROSS TAYLOR", "CHRIS GAYLE", "SACHIN", "YUVRAJ SINGH", and "ISHANT SHARMA". Below the list, there are six icons representing different actions: "Add player", "Add stats", "Delete player", "Update player", "Update stats", and "Logout".

Fig 6.3 ADD NEW PLAYER

The screenshot displays a web application interface for a Cricket Player Statistics Database. The interface is divided into three main sections: a left sidebar, a central player list, and a right-hand form for adding a new player.

Left Sidebar: A blue sidebar with a 'HOME' button at the top. Below it, the 'Selected Player' is 'MS DHONI', accompanied by his profile picture. A list of navigation options is provided: 'Details', 'Tournament', 'Fixtures', 'Rank', and 'Statistics'.

Central Player List: A table titled 'Players' lists the following names: VIRAT KOHLI, MS DHONI, R JADEJA, MITHALI RAJ, AB DEVILLIERS, SHANE WARNE, ROHIT SHARMA, S AFRIDI, ROSS TAYLOR, CHRIS GAYLE, SACHIN, YUVRAJ SINGH, and ISHANT SHARMA.

Right-hand Form: A modal window titled 'Add Player' with a close button (X) in the top right corner. The form contains the following fields and options:

- Player name:** A text input field.
- Player ID:** A text input field.
- Gender:** Radio buttons for 'MALE' (selected) and 'FEMALE'.
- Date of birth:** Three dropdown menus for day (1), month (JAN), and year (1970). An 'Age' field is also present.
- Height:** A dropdown menu showing '5'.
- Role:** A dropdown menu showing 'BATSMAN'.
- Country:** A dropdown menu showing 'INDIA'.
- SAVE:** A blue button with a floppy disk icon to save the new player.

Additional UI Elements: On the far right, there are two buttons: 'Delete player' (with a person icon and a red X) and 'Logout' (with a person icon).

CONCLUSION

A player's ability to get off strike in one-day cricket is crucial to a flowing team innings, yet scoring-shot percentage is never spoken about. The importance of bowling balls that ask a question of the batsman's length footwork is drilled in at team meetings, but never given a full statistical evaluation

Besides observing the Laws, cricketers must respect the "Spirit of the Game" and the Preamble to the Laws, first published in the 2000 code, opens with this statement: "Cricket is a game that owes much of its unique appeal to the fact that it should be played not only within its Laws but also within the Spirit of the Game".

The onus for ensuring that a team complies is placed firmly on the captain who may be required by the umpires to "take action" against any player on his team whose behaviour is unacceptable and may bring the sport into disrepute. The umpires are the sole judges of fair and unfair play. They are required to intervene if players are inter alia wasting time, damaging the pitch, tampering with the ball or showing disrespect to other players or to the umpires themselves.

Nowadays records are also maintained for List A and Twenty20 limited over matches. These matches are normally limited over games played domestically at the national level by leading Test nations. Since one-day internationals are a form of List A limited over matches, a player's List A statistics will include their ODI match statistics – but not vice versa.

BIBLIOGRAPHY

[1] Database systems Models, Languages, Design and Application Programming, RamezElmasri and Shamkant B. Navathe, 7th Edition, 2017, Pearson.

[2] Database management systems, Ramakrishnan, and Gehrke, 3rd Edition, 2014, McGraw Hill.

[1] <https://netbeans.org/downloads/>

[2] <https://www.apachefriends.org/index.html>

[3] https://www.tutorialspoint.com/netbeans_online_training/