# FUTURENSE INTERNSHIP

**CAPSTONE PROJECT**

**ON**

**ODI DATASET ANALYSIS**

**Name: Arjun Unnikrishnan USN: 22BTRAD004**

**Name: Manna Nibu USN: 22BTRAD023**

**Name: Sohan Saha USN: 22BTRAD029**

**Overview**

The project aims to conduct a thorough analysis of One Day International (ODI) cricket match datasets, leveraging advanced statistical techniques and data analytics methodologies. The analysis will encompass various aspects of ODI cricket, including player performance metrics, team strategies, match dynamics, and external factors influencing match outcomes. By collecting, pre-processing, and analysing comprehensive ODI match data, the project seeks to derive actionable insights to inform decision-making in cricket. The project outline involves data collection from reliable sources, pre-processing to ensure data integrity, statistical analysis to summarize and interpret the data, trend analysis to identify patterns over time, comparative analysis to benchmark performances, visualization to present findings intuitively, and insights generation to inform stakeholders. Through this project, we aim to contribute to the advancement of cricket analytics and provide valuable insights to cricket teams, coaches, analysts, and enthusiasts.

**Analysis with Onus**

1. **Basic Statistics Analysis - Arjun:**

This analysis will involve examining fundamental aspects of the ODI dataset, including runs, wickets, and extras. Averages, totals, and other statistical measures will be calculated for runs scored, wickets taken, and extras conceded. The distribution of runs, wickets, and extras will also be analysed to identify any trends or patterns within the dataset. Furthermore, comparisons will be made across teams and seasons for batting and bowling averages, strike rates, and economy rates to understand performance variations over time and among different cricketing entities.

1. **Team Performance Analysis - Manna:**

In this analysis, we will delve into the performance trends of cricket teams across different seasons, venues, and against specific opponents. The impact of toss decisions on match outcomes and team performance will be evaluated. Additionally, we will assess the correlation between winning the toss and winning matches to understand the significance of toss decisions in ODI cricket.

1. **Player Performance Analysis - Sohan:**

This analysis aims to assess individual player performances in ODI cricket matches. We will calculate batting averages, strike rates, and centuries scored for each player, as well as analyse bowling averages, strike rates. Key performers for each team will be identified, and their impact on match outcomes will be evaluated to gain insights into player contributions to team success.

1. **Umpire Analysis - Arjun:**

The focus of this analysis will be on evaluating the consistency and performance of umpires in officiating ODI cricket matches.

1. **Innings Analysis - Manna:**

This analysis will involve examining the scoring rate and run distribution for each innings in ODI cricket matches. Successful batting orders and partnerships will be identified, and the effectiveness of different bowling strategies in taking wickets and controlling run rates will be evaluated.

1. **Wicket Analysis - Sohan:**

In this analysis, we will analyse the types of wickets taken (e.g., bowled, caught, lbw) and their frequency in ODI cricket matches. The impact of key wickets on match outcomes will be assessed, and we will investigate the relationship between wicket-taking and match results.

1. **Venue Analysis - Arjun:**

The venue analysis will focus on analysing the average scores, run rates, and wicket-taking rates at different cricket venues. We will identify venues where teams have a significant advantage or disadvantage and assess the impact of pitch conditions and ground dimensions on match outcomes.

1. **Toss Analysis - Manna:**

This analysis will involve examining the distribution of toss decisions (batting or bowling first) and their impact on match results in ODI cricket matches. We will assess whether winning the toss influences the choice of fielding or batting first and identify teams with a tendency to win matches after winning the toss.

1. **Match Result Analysis - Sohan:**

In this analysis, we will analyse the factors contributing to match results, such as the margin of victory and the application of the Duckworth-Lewis (DL) method. We will investigate the relationship between match results and player of the match awards to understand the determinants of success in ODI cricket matches.

1. **Match Head-to-Head Stats - Arjun:**

This analysis will involve displaying the head-to-head records of teams based on user input and creating a prediction model to predict the percentage of winning based on head-to-head stats. We will use historical head-to-head data to assess the likelihood of one team winning against another in ODI cricket matches.

1. **Weather and DL Method Analysis - Manna:**

The focus of this analysis will be on investigating the impact of weather conditions on match results and the application of the Duckworth-Lewis (DL) method in rain-affected matches. We will analyse matches affected by rain interruptions and their outcomes to understand the influence of weather on match dynamics.

1. **Fielding Analysis - Sohan:**

In this analysis, we will analyse fielding performance by assessing catches, run-outs, and other fielding contributions in ODI cricket matches. We will identify teams and players with exceptional fielding skills and assess their impact on match outcomes.