**Introduction**

**Cricket Score Prediction**

Cricket is a sport with multiple formats, different playing standards and varying duration. Twenty20 is one of the three current forms of Cricket which is recognized by the International Cricket Council (ICC). In that format, two teams have a one innings each with a maximum of 20 overs. Because of the short time duration and the excitement, it generates, Twenty20 cricket has become such a huge success. There are many annual tournaments conducted at both domestic and international level. There is huge commercial interest in player performance prediction. This has motivated many analyses of individual and team performance, as well as prediction of future games, across all formats of the game. Currently, strategists rely on a combination of player experience, team constitution and “cricketing sense" for making instantaneous strategic decisions. We choose to focus our testing and evaluation on the most popular format. Cricket Score Prediction makes the future sounds like magic whether it be detecting in advance the intent of a potential of players to improve the strengths and weakness. If we can reliably predict the future of something, then we own a massive advantage. Machine learning has only served to amplify this magic and mystery. The main objective of sports prediction is to improve team performance and enhance the chances of winning the game. The value of a win takes on different forms like trickles down to the fans filling the stadium seats, television contracts, fan store merchandise, parking, concessions, sponsorships, enrollment and retention.Scoring is also called prediction and is the process of generating values based on a trained machine learning model, given some new input data. The values or scores that are created can represent predictions of future values, but they might also represent a likely category or outcome. There are two types of machine learning namely supervised machine learning and unsupervised machine learning. In supervised machine learning we must train the machine by providing huge data sets and the outcomes.

**CHURN ANALYSIS FOR CRICKET:**

**Churn Analysis:**

Customer Churn refers to when a customer (player, subscriber, user, etc.) ceases his or her relationship with a company. Churn analysis is the process of using data to understand why the customers have stopped using the product or the service. Online businesses typically treat a customer as churned once a specific amount of time has elapsed since the customer’s last interaction with the site or service. The full cost of churn includes both lost revenue and the marketing costs involved with replacing those customers with new ones. Reducing churn is a key business goal of every online business. Churn analysis is the evaluation of a company's customer loss rate in order to reduce it. Also referred to as customer attrition rate, churn can be minimized by assessing your product and how people use it.

 A **churn model** is a mathematical representation of how **churn** impacts your business. **Churn** calculations are built on existing data (the number of customers who left your service during a given time period). A predictive **churn model** extrapolates on this data to show future potential **churn** rates.

In terms of sports, it means ‘getting out or dismissed’ while batting due to any reasons like severe back pain, accidents on the pitch, etc.

**Prediction in Churn Analysis:**

Churn analysis is used to understand why a customer (player, etc.) ceases to use the product or service. In terms of sports, it means that why a player got out/dismissed while batting.

Though churn analysis is widely used, now-a-days prediction has also increased its role in churn analysis. The ability to predict that when a player will get out/dismissed in cricket, sharply increases the chance to take decision on that matter, increasing the chance of winning. Also, it saves resources.

We can apply Machine Learning for predicting churn rates on the huge data, to get as near accurate prediction as possible.

There are many techniques for predicting churn rate through ML:

* Kaplan-Meier Estimate
* Nelson Aalen Fitter
* Cox Proportional Hazard Regression Model
* Survival Regression

How to Calculate Churn Rate: -To calculate your **churn rate**, divide churned customers over a period by the number of customers you had at the start of that period. While overly simplistic, this allows you to focus on **churn** by cohort and analyze the cause — instead of debating between overly complex methods to analyze **churn**.

**Why is churn so important in marketing?**

A high churn rate forces a business to compete with the stress and difficulty of bringing enough new customers in to plug the holes in the ship. ... What's more, high churn rates are more likely to compound over time. That's why having a grasp of churn analysis is so important.