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Cricket Score and Winning Prediction

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Abstract - *As we all know cricket is the most played game. There are so many series in cricket which are played in our country, one of them is the Indian Premier League (IPL). Now it is conducted among 8 teams. Our proposed system consists a model that has two parts the first one is prediction of score and the second one is team winning prediction. In this the score prediction is done with the help of Lasso Regression algorithm whereas in winning prediction SVM classifier, decision tree classifier and random forest classifier are used. The model uses the supervised machine learning algorithm to predict the winning. Random Forest Classifier is used for good accuracy and stable accuracy so that desired predicted output is accurate.*

Key Words: *Machine Learning, Lasso Regression, Random Forest Classifier, IPL Winning Prediction, IPL Score Prediction*

1.INTRODUCTION

Cricket is one in all the foremost loved sports, within the world, second solely to football. The sport began in European country(England) in the sixteenth century. Today, it's the most watched game in several countries. Various natural factors have an impact on the sport, enormous media coverage, and an enormous dissipated market have given sturdy incentives to model the sport from varied perspectives. However, their area unit have some complicated rules that governing the sport, the players ability and their performances on a specific match day, and various natural parameters plays a vital role which affects the ultimate results of the cricket match. This presents important challenges in predicting the accurate results of a game.

Today, there are three major formats in which cricket is being played Internationally, the One Day Internationals (ODIs), the T20 Cricket and the Test Cricket. Besides these international cricket matches, T20 League cricket is obtaining attention within the fans because of its shortest format and therefore it has became the most enjoyable format of the sport. Indian Premiere League is one of the popular T20 cricket league within the world. It is usually held between March and May of every year. The first season was slated to begin in April 2008 and until then there have been fourteen seasons of this tournament.

As fans watching the IPL , people make their own predictions while watching a particular match, based on the data they have they make a call on who will win the match by using different statistics and records. So, there is a huge demand for the algorithms that predicts the best result of score and winning team that is more important. We will perform prediction for all the matches that have taken place in the IPL. This is done by using machine learning algorithms for performing the prediction of the results of the matches

1.1 Objectives

1. To improve the general attraction to the Premier League
2. To predict the cricket score
3. Effective prediction technique
4. Essential for making strategic decisions

1.2 Scope

The Cricketing world will start to believe in Prediction which will be based on some statistical records rather than some theoretical concepts. It will be easier to predict the live score and match winner.

2. PROPOSED SYSTEM

Cricket score and Winning prediction is a system which will predict live cricket score and winning forecast. In this model there are two sections. In initial segment we will predict the live score of a live match considering various parameters and, in the second segment, model will predict who will win the match by considering different parameters and efficient algorithms.

3. METHODOLOGY

3.1 Algorithms

1)Lasso Regression

Lasso regression is a regularization technique. it's used over regression strategies for accurate prediction. This model uses shrinkage. Shrinkage is where data values are shrunken to a central point as the mean. The lasso procedure encourages simple, straightforward, thin models (i.e. models with fewer parameters). This specific

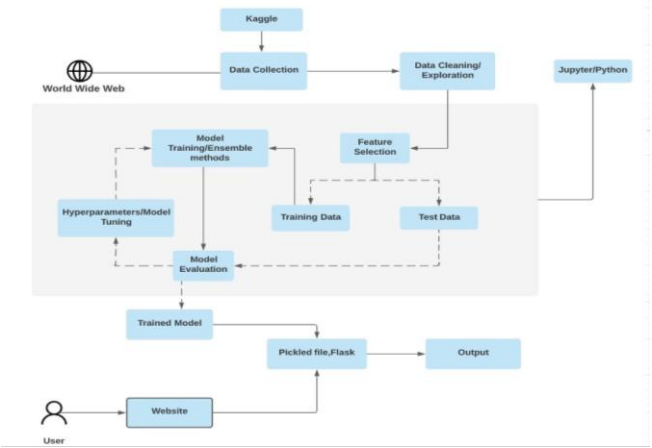
style of regression is well-suited for models showing high levels of multiple regression or when you want to automatise certain elements of model , like variable selection/parameter elimination.

2)Random Forest Classifier

Random Forest is a classifier that contains variety of decision trees on varied subsets of the given dataset and takes the average to improve the predictive accuracy of that dataset. Instead of hoping on one decision tree, the random forest takes the prediction from each and every tree and based on the majority votes of predictions, and it predicts the final output. The more the number of trees within the forest results in higher accuracy and prevents the matter of overfitting.

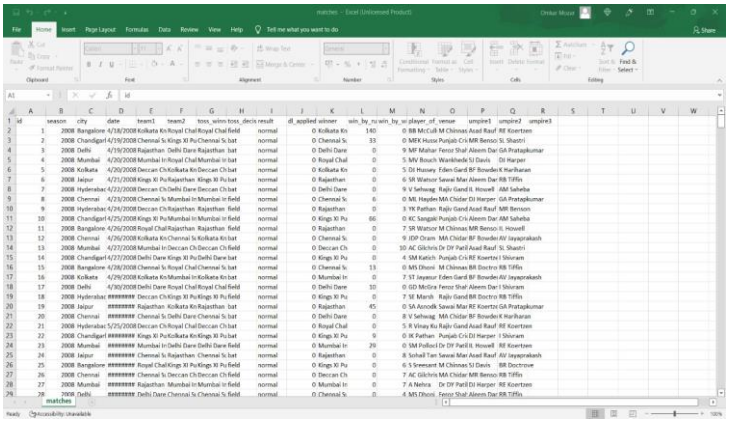
3.2 System Description

In this proposed system, we have collected the dataset from Kaggle. In this dataset there is ball to ball data is stored. On this data, data pre-processing and feature selection is done. And the data is divided into 1)Training Data and 2)Testing Data, in which different algorithms are applied on training data. This model contains two phases, Live score Prediction and Match Winner Prediction. For live score prediction considered parameters are overs bowled, runs scored, number of wickets fallen, runs score in previous 5 overs and wickets taken in previous 5 overs. On these parameters lasso regression is applied and for winner prediction considered parameters are toss winner, toss decision and venue. On these parameters Random forest classifier is applied. And lastly we have developed a Graphical User Interface(GUI) for the machine learning models using the Flask Framework.



4. DATASET

The dataset is collected from kaggle, For score prediction dataset consists of 76015 number of rows and 15 columns over which different techniques are applied and selected 8 features. And for Winner prediction dataset consists of 700 number of rows and 15 columns.



5. RESULT

The Graphical User Interface(GUI) has been developed for the machine learning models using the Flask Framework. For the backend of the site we have used Python. This site will predict the live IPL match score and the winner of the match

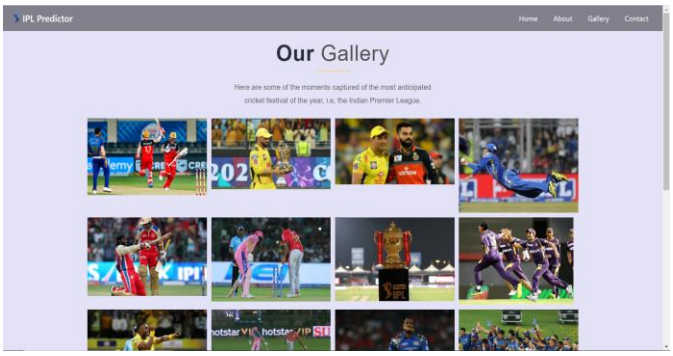
First, on our home page, we get information about our system and also a buttons to predict the live score and winner of match.

The next is the winner prediction section, this button takes you to the page where the user have to give the inputs like team names, venue, toss winner, toss decision and city to predict the winner of match.

After that, the next is the score prediction section, this button takes you to the page where user have to give the inputs like team names, venue, overs bowled, runs scored, total wickets fallen, runs and wickets in previous 5 overs etc. to predict the score during the live match.

We will get the inning score which will be predicted in the form of range.

Here is the gallery, there are some of the captured moments of the most anticipated cricket festival of the year, i.e, the Indian Premier League.



6. CONCLUSION

The objective of this project is to predict the score and winner of the match using historical data. To conduct the analysis and predicting the score of match, various branches of Data Science will be converge including Pre-Processing of data, Visualizations of data, preparation of data, feature selection and to implement different machine learning models for the predictions. On selected features several machine learning models will be applied to predict the score of innings and to get right result.

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