Win Predictor

Submitted for

Artificial Intelligence and Machine Learning CSET301

Submitted by:

(E23CSEU1453)   M. Namitha Reddy

(E23CSEU1450)   P. Ganya Srihitha

Submitted to

Dr. Yajnaseni Dash

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

INDEX

Sr.No	Content
1.	Abstract
2.	Introduction
3.	Methodology
4.	Hardware/Software Required
5.	Experimental Results
6.	Conclusions
7.	Future Scope
8.	Screen Shots
9.	Github link

1. Abstract:

The **Win Predictor Project** is a data-driven solution aimed at predicting outcomes of competitive sports matches, particularly cricket games. Users can input live match data like batting team, bowling team, city, score, and overs, and the model predicts the winning probabilities. It leverages machine learning models trained on historical match data, providing insights through an easy-to-use web interface with visual elements.

2. Introduction:

In an era where real-time data shapes decision-making, the **Win Predictor** offers a powerful platform for sports fans, analysts, and betting enthusiasts. Using machine learning, the project predicts match

outcomes based on live performance metrics. The tool highlights how historical data and predictive modeling can be used effectively to anticipate the dynamics of ongoing matches

3. Methodology:

- **Data Collection:** Historical cricket match datasets (team names, runs, overs, wickets, venue).
- **Feature Engineering:** Derived features like `runs_left`, `balls_left`, `current run rate (CRR)`, and `required run rate (RRR)`.
- **Model Training:** Trained a classification model using scikit-learn, saved using `pickle`.
- **User Interface:** Developed an interactive web app with **Streamlit**.
- **Prediction:** Displays winning probabilities in real-time based on user inputs.

4. Hardware/Software Required:

- **Hardware:**

- A PC/Laptop with basic configurations (i5/i7, 8GB RAM recommended)

- **Software:**

- Python 3.8+
- Libraries: `streamlit`, `pandas`, `pickle`, `scikit-learn`
- IDE: VS Code / PyCharm / Jupyter Notebook
- Web Browser (Chrome/Edge)
- Dataset (.csv file of historical matches)

5. Experimental Results :

The model was tested against historical match data. In multiple simulations, the Win Predictor achieved reasonable accuracy in forecasting results based on mid-match statistics. The interactive app allowed users to experiment by changing scores, wickets, and overs,

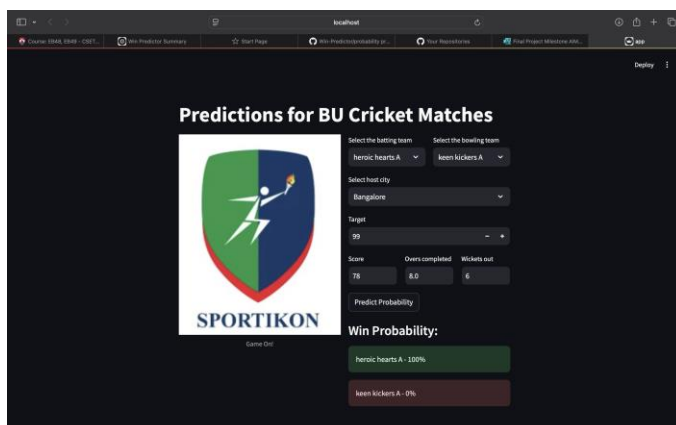seeing live prediction updates, confirming the system's dynamic behavior.

6.Conclusions:

The **Win Predictor Project** successfully demonstrates the application of machine learning in real-time sports forecasting. It simplifies complex cricket match dynamics into intuitive winning percentages, offering insights to users instantly. The project also shows the practical use of Streamlit for building fast and powerful ML web apps.

7.Future Scope:

- **Enhance accuracy** by training with ball-by-ball datasets instead of summary data.
- **Real-time API Integration** with live match feeds (e.g., Cricbuzz, ESPNcricinfo).
- **Support for multiple leagues** (IPL, BBL, PSL) and formats (ODI, Test matches).
- **Advanced models:** Try deep learning or ensemble models (XGBoost, LightGBM).
- **Visualization:** Add charts to show score projections, win probabilities over time.

8.Screen Shots :

9.GitHub Link of Your Complete Project:

https://github.com/P-Ganyasrihitha/Win-predictor