SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCSD 6215
Sem: 1 Session: 2024/25-01

SECTION A: Project Information.

Program Name:	**Masters of Science (Data Science)**
Subject Name:	**Project 1 (MCSD 6215)**
Student Name:	Laiba Nadeem
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Project Title:	CRICKET DATA ANALYSIS USING PYTHON AND POWER BI FOR DATA-DRIVEN DECISIONS
Supervisor 1:	
Supervisor 2 / Industry Advisor(if any):	

SECTION B: Project Proposal

Introduction:

Cricket is a sport enriched in data. With every match played, we get loads of data that can be used to make beneficial insights to increase performance or strengthen the team. This project aims to do Cricket Data Analysis to form a team 11 in the given match scenarios: chasing a specific score or defending the score against a strong batting lineup.

By using web scrapping, python libraries, and Power BI, the project will provide comprehensive insights and solutions for our required score against or forming our strong and desired team. The goal of the project is to see how data science can turn traditional cricket strategies into robust data-driven decisions.

Problem Background:

Cricket is one of the most popular sports that can derive enormous amount of data. The traditional method of forming a cricket team relies on the intrusiveness of the experts or past experiences. However, this traditional approach of forming a team mostly overlooks the vast amount of data available that can help form better data-driven decisions.

The team faces challenges in making up a team either for chasing a large total, needing bowlers to defend a low total or just making a balanced e team against certain odds. Without proper analytical tools, teams rely on traditional methods, while this project aims to overcome this and provide data-driven decisions, as there is an abundance of data available in cricket.

Problem Statement:

In cricket, team selection is the main and important part, however, the traditional methods of forming a team can lead to subjective decisions resulting in bad outcomes or the poor performance of the

team. Despite of vast amount of data available, there is a lack of analysis of that data that can recommend better team selection through the techniques of data analysis.
The lack and absence of data-driven decisions limit the ability of the management or coaches to form a team according to given scenarios like weather conditions, the strengths and weaknesses of the opponents, and the format of the game.

Aim of the Project:
The project aims to perform data analysis techniques on the cricket data that will recommend data-driven solutions for team selection. By utilizing web scrapping to collect the data, advanced data analysis techniques, machine learning models, and Power BI visualization tools, the project will aim to provide robust data-driven solutions for team management to for a team to improve match outcomes in different scenarios.

Objectives of the Project:

1. To collect and preprocess the cricket data from various sources that include insights and players statistics. To analyze different metrics of the players like their strike rates, batting average, wicket-taking ability, and bowling economy to check their suitability for different matches.
2. To provide insights based on the match like batting order or bowling line or the placement of players in the field.
3. To provide visualization of the important insights gathered from the data using visualization tools, like Power BI.

Scopes of the Project:
This cricket data analysis project involves data analytics techniques, python, and data visualization tools such as Power BI to form data-based strategies for team formulation. It includes data scrapping from different sources that include different important metrics of player performances like strike rates, bowling economy, match reports, wicket-taking or six-hitting abilities against different opponents, pitches, and weather conditions. This will help in making data-based decision for better team performance and positive outcomes.

Expected Contribution of the Project:
The project is expected to contribute to the field of cricket by analyzing vast amounts of data and getting useful insights to make better and improved decisions.
This system will reduce the reliance on intuitiveness and pass experience for team formation, minimizing the error of judgment that it brings.
Apart from cricket, this project can be the framework for other sports, widening the scope of analytics in the sport and leading to better strategic decisions.

Project Requirements:

Software: Jupyter notebook, visual studio code, Power BI

Hardware:

Technology/Technique/ Methodology/Algorithm: Python, Data Scrapping, Machine learning, Data processing and Data visualization

Type of Project (Focusing on Data Science):

[-] Data Preparation and Modeling

[-] Data Analysis and Visualization

[ ] Business Intelligence and Analytics

[ ] Machine Learning and Prediction

[-] Data Science Application in Business Domain

Status of Project:

[-] New

[ ] Continued

If continued, what is the previous title?

SECTION C: Declaration

I declare that this project is proposed by:

[-] Myself

[ ] Supervisor/Industry Advisor ( )

Student Name:

Signature **Date**

SECTION D: Supervisor Acknowledgement

The Supervisor(s) shall complete this section.

I/We agree to become the supervisor(s) for this student under aforesaid proposed title.

Name of Supervisor 1:

Signature **Date**

Name of Supervisor 2 (if any):

Signature **Date**

SECTION E: Evaluation Panel Approval

The Evaluator(s) shall complete this section.

Result:

[ ] FULL APPROVAL

[ ] CONDITIONAL APPROVAL (Minor)

[ ] CONDITIONAL APPROVAL (Major)*

[ ] FAIL*

***** Student has to submit new proposal form considering the evaluators' comments.

Comments:

Name of Evaluator 1: .....

Signature ..... **Date** .....

Name of Evaluator 2: .....

Signature ..... **Date** .....