Ahmedabad University

# ML Project Weekly Report

**Course Name:** Machine Learning (CSE 523)
**Week Number:** 1 (1st - 3rd February 2024)
**Group Name:** White
**Instructor's Name:** Mehul S Raval
**Project no.:** 7

Project 7 | Athlete Statistics Visualization and Prediction

## Introduction

This is our first report for the week of February 1st to 3rd. During this time, we started working on our project titled "Athlete Statistics Visualization and Prediction" This report details the initial progress of our project, and we are still trying to figure out how to leverage machine learning algorithms to analyze a diverse dataset of Division I basketball players.

## Objective

Our primary goal is to apply machine learning algorithms to condense the dataset's numerous features into 5 main modalities: sleep, training, cardiac rhythm, jump, and cognitive aspects. Subsequently, we plan to train models to predict scores for each modality based on the original dataset.

Framework that will not only predict performance but also offer actionable insights through a user-friendly visualization dashboard, enabling coaches and athletes to make data-informed decisions such as:

1. Track the performance and flow of players & teams
2. To build strategies before match
3. To determine teams strength & weakness

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## Project Progress

During this initial phase, we focused on understanding the project's requirements and expectations. We carefully reviewed the project documentation provided by our faculty and analyzed the project objectives in detail.

## Next Steps

Moving forward, our immediate focus will be on further exploring the dataset and understanding its underlying patterns and correlations. We aim to explore various data pre-processing techniques to ensure the quality and reliability of our analysis.

## Conclusion

The first week of the project provided valuable insights into the project's scope, challenges, and initial steps required for upcoming weeks implementation of the project.We recognized a significant gap in integrating and analyzing multimodal data, such as sleep patterns, training intensity, and cardiac rhythms, to predict and enhance athlete performance and readiness comprehensively. Traditional performance analysis methods often overlook the multidimensional nature of these modalities.