**Project Initialization and Planning Phase**

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| Date | 15 June 2024 |
| Team ID | 739820 |
| Project Title | Predicting the Unpredictable: A Look into the World of Powerlifting |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) report**

Powerlifting is a sport that demands precision, strength, and strategy. However, predicting performance outcomes and optimizing training regimens are often based on subjective judgment and trial-and-error. This project proposal aims to transform powerlifting performance assessment using machine learning, boosting efficiency and accuracy. The proposed solution promises better training operations, reduced injury risks, and improved lifter satisfaction

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| **Project Overview** |  |
| Objective | The primary objective is to enhance the understanding and prediction of powerlifting performance using advanced machine learning techniques, ensuring more accurate assessments and insights |
| Scope | The project comprehensively examines various factors influencing powerlifting performance, incorporating machine learning to develop a robust and predictive system. |
| **Problem Statement** |  |
| Description | Addressing the unpredictability and complexity in predicting powerlifting performance, which affects training, competition preparation, and performance analysis. |
| Impact | Solving these issues will result in improved training regimens, better competition strategies, and an overall enhancement in the understanding of powerlifting dynamics, contributing to athlete success and the advancement of the sport. |
| **Proposed Solution** |  |
| Approach | Employing machine learning techniques to analyze and predict powerlifting performance, creating a dynamic and adaptable prediction system |
| Key Features |  Implementation of a machine learning-based performance assessment model.   Analysis of various factors such as training data, physical attributes, and competition history.   Dynamic updates and predictions based on new data inputs |



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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | T4 GPU |
| Memory | RAM specifications | 8 GB |
| Storage | Disk space for data, models, and logs | 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | Flask |
| Libraries | Additional libraries | scikit-learn, pandas, numpy, matplotlib, seaborn |
| Development Environment | IDE | Google collab |
| **Data** | | |
| Data | Source, size, format | Kaggle dataset, 614 csv |

**Resource Requirements:**