**Project Initialization and Planning Phase**

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| Date | 20 June 2024 |
| Team ID | 739860 |
| Project Title | A Comprehensive Measure of Well-  Being:The Human Development Index Using Machine Learning |
| Maximum Marks | 3 Marks |

# Project Proposal (Proposed Solution) report

The Human Development Index (HDI) is a composite statistic used to rank countries based on human development. It takes into account factors such as life expectancy, education, and income per capita. Traditional methods of calculating HDI have limitations in capturing the nuances and complexities of human development. This project aims to enhance HDI prediction using machine learning techniques and to provide an interactive web application for users to predict HDI based on their inputs.

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| **Project Overview** |  |
| Objective | The primary objective of the Human Development Index is to shift the focus of development policies from purely economic growth towards improving the well-being and capabilities of people, thereby promoting sustainable and inclusive development |
| Scope | The project comprehensive evaluation of human well-being and development across countries, aiming to go beyond purely economic measures to provide a more nuanced understanding of societal progress and challenges |
| **Problem Statement** |  |
| Description | It serves as a powerful tool for assessing and monitoring human development globally, providing a broad and inclusive perspective on the well-being and capabilities of people around the world. |
| Impact | It serves as a critical tool for assessing and comparing human development across countries, guiding policy decisions, and promoting international cooperation towards achieving higher  standards of living and well-being for all people |
| **Proposed Solution** |  |
| Approach | The approach is multidimensional, inclusive, and forward-looking, emphasizing the importance of enhancing human capabilities and promoting sustainable development globally |
| Key Features | - Implementation of a robust linear regression model trained on a comprehensive dataset to provide accurate HDI predictions. |

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|  | -**Real-Time Results**:  **Instant Prediction**: Upon submitting the form, users receive immediate HDI predictions without any noticeable delay, enhancing user satisfaction.  **Dynamic Feedback**: The application dynamically displays the predicted HDI value on the same page, providing a smooth and interactive user experience. |

# Resource Requirements

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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 | Jupyter Notebook, pycharm |
| **Data** |  |  |
| Data | Source, size, format | Kaggle dataset, 614, csv UCI dataset, 690, csv |