LIFE STYLE CHANGE DUE TO COVID PREDICTION

Milestone 1: Project Initialization and Planning Phase

The Project Initialization and Planning Phase serves as a crucial step in laying the groundwork for this research endeavor. It outlines our objectives, stakeholder engagement, project scope, timeline, budget, risk management strategies, and communication plans. By establishing a clear framework, we aim to ensure the project's success and deliver meaningful findings that address the evolving needs of the population.

Activity 1: Define Problem Statement

Problem Statement: The COVID-19 pandemic has significantly altered daily routines, social interactions, and health behaviors. As we move toward recovery, predicting and understanding the long-term lifestyle changes is crucial for public health planning and community support.

This study aims to identify and analyze the specific lifestyle changes resulting from the pandemic, focusing on areas such as:

1. **Health and Fitness**: Shifts in exercise habits and dietary choices.
2. **Work and Productivity**: The rise of remote work and its impact on work-life balance.
3. **Mental Health**: Changes in stress levels, social isolation, and coping mechanisms.
4. **Social Interactions**: Modifications in social behaviors and community engagement.

Problem Statement Report: Click Here

Activity 2: Project Proposal (Proposed Solution)

By employing this structured approach, the project aims to not only identify and analyze the lifestyle changes induced by COVID-19 but also provide actionable insights that can guide community and public health initiatives. This proactive response will foster resilience and support the well-being of individuals and communities as they navigate the ongoing effects of the pandemic.

Project Proposal Report: Click Here

Activity 3: Initial Project Planning

This initial project planning phase establishes a clear framework for the research on lifestyle changes due to COVID-19. By defining objectives, scope, timeline, budget, risk management, and communication strategies, we aim to ensure a successful and impactful project.

Project Planning: Click Here

Milestone 2: Data Collection and Preprocessing Phase

The data collection and preprocessing phase is critical to the integrity of the project. By implementing a systematic approach to gather, clean, and prepare data, we can ensure that the subsequent analysis is robust and yields meaningful insights into the lifestyle changes resulting from COVID-19.

Activity 1: Data Collection Plan, Raw Data Sources Identified, Data Quality Report

The comprehensive data collection plan, along with the identified raw data sources and data quality report, sets the stage for robust and reliable analysis of lifestyle changes due to COVID-19. By adhering to quality assurance measures, the project aims to yield meaningful insights that can inform public health strategies and community support initiatives.

Data Collection Report: Click Here

Activity 2: Data Quality Report

The data quality assessment indicates that the project data is largely accurate, complete, and consistent, with minor issues addressed during the cleaning process. The proactive measures taken to ensure data integrity will support the reliability of subsequent analyses and findings related to lifestyle changes due to COVID-19.

Data Quality Report: Click Here

Activity 3: Data Exploration and Preprocessing

The data exploration and preprocessing phase is essential for preparing the dataset for analysis. By thoroughly exploring the data and addressing quality issues, we can ensure that subsequent analyses yield reliable insights into lifestyle changes due to COVID-19. This foundational work sets the stage for effective data analysis and interpretation of results.

Data Exploration and Preprocessing Report: Click Here

Milestone 3: Model Development Phase

The model development phase is critical for deriving actionable insights from the data on lifestyle changes due to COVID-19. By selecting appropriate models and rigorously evaluating their performance, we aim to uncover significant predictors that can inform public health strategies and community support initiatives.

Activity 1: Feature Selection Report

This report outlines the feature selection process for analyzing lifestyle changes due to COVID-19. The goal is to identify the most relevant features that significantly impact the outcomes of interest, such as health behaviors, work patterns, and mental well-being. The feature selection process has successfully identified key variables that will be used in the modeling phase to analyze lifestyle changes due to COVID-19. By focusing on these relevant features, we aim to enhance model performance and derive meaningful insights that can inform public health initiatives.

Feature Selection Report: Click Here

Activity 2: Model Selection Report

This report outlines the model selection process for analyzing lifestyle changes due to COVID-19. The objective is to choose the most appropriate predictive models that effectively capture the relationships between features and the target variable.

Model Selection Report: Click Here

Activity 3: Initial Model Training Code, Model Validation and Evaluation Report

In this project, we aim to analyze lifestyle changes resulting from the COVID-19 pandemic by developing a predictive model. The primary focus is to identify key factors influencing these changes, using data collected from surveys and interviews. This report details the process of training the initial predictive model, specifically a Gradient Boosting Classifier, and evaluating its performance based on various metrics. The objective is to establish a reliable model that can accurately predict lifestyle changes, thereby providing insights that can inform public health strategies and community support initiatives.

Model Development Phase Template: Click Here

Milestone 4: Model Optimization and Tuning Phase

The model optimization and tuning phase is crucial for enhancing the predictive power of the Gradient Boosting model. By systematically adjusting hyperparameters, refining features, and employing cross-validation, we aim to achieve a reliable and accurate model that can effectively

inform strategies related to lifestyle changes due to COVID-19. This phase lays the groundwork for the final evaluation and deployment of the model.

Activity 1: Hyperparameter Tuning Documentation

The hyperparameter tuning process significantly improved the performance of the Gradient Boosting Classifier. The best hyperparameters identified will be used for the final model evaluation and deployment. This tuning process enhances the model's ability to predict lifestyle changes accurately, providing valuable insights for public health strategies.

Activity 2: Performance Metrics Comparison Report

The performance metrics comparison indicates that the Gradient Boosting Classifier is the best choice for predicting lifestyle changes due to COVID-19. Its superior metrics suggest it captures the underlying patterns effectively. The Random Forest model also presents a strong alternative. Future work will focus on fine-tuning the Gradient Boosting model to further enhance its predictive capabilities.

Activity 3: Final Model Selection Justification

The Final Model Selection Justification articulates the rationale for choosing Decision Tree as the ultimate model. Its exceptional accuracy, ability to handle complexity, and successful hyperparameter tuning align with project objectives, ensuring optimal covid predictions.

Model Optimization and Tuning Phase Report: Click Here

Milestone 5: Project Files Submission and Documentation

For project file submission in Github, Kindly click the link and refer to the flow: Click Here

For the documentation, Kindly refer to the link: Click Here

Milestone 6: Project Demonstration

In the upcoming module called Project Demonstration, individuals will be required to record a video by sharing their screens and explain their project and demonstrate its execution during the presentation.