MAna: A Python Package for Data Manipulation and Analysis

**Authors:**

**Summary:**

Our project aims to create MAna, a Python package that simplifies the process of data manipulation and analysis. Our package will contain functions that enable users to easily import, manipulate, and visualize data from various sources. MAna will provide a simple and efficient solution for data scientists and analysts to streamline their workflow and ultimately improve the accuracy and reliability of their analyses.

**Proposed Design:**

Our package will consist of several modules, including a data loading module that reads in various data file formats such as CSV, Excel, and SQL databases. We will also create a data manipulation module that contains functions for data cleaning, transformation, and aggregation. Additionally, we will include a data visualization module that provides various types of graphs and charts to help users gain insights from their data.

We will use external libraries such as pandas, NumPy, and Matplotlib to build our package, but we will implement our algorithms for data manipulation and visualization. We will also create a comprehensive testing suite to ensure the accuracy and functionality of our package. One of the main challenges we foresee is ensuring the compatibility of our package with different types of data and file formats. Nonetheless, we will address this issue by continuously testing our package on different datasets and file types.

Ultimately, we aim to deliver a robust and easy-to-use package that enables data analysts to spend less time on data manipulation and more time on valuable insights. We believe that MAna will be a valuable tool for data analysts in various industries, from finance to healthcare to e-commerce.