

# Coin Change DP Visualizer

The Coin Change Problem is a classic algorithmic problem that involves finding the minimum number of coins needed to make change for a given amount of money. This problem has important real-world applications in areas such as finance, vending machines, and currency exchange. In this project, we will implement and analyze the performance of dynamic programming algorithms for solving the Coin Change Problem, and we will create a graphical user interface (GUI) using the Tkinter library to visualize the results of our algorithms. Our GUI will allow users to enter denominations of coins, an amount for which they need change, and then display the minimum number of coins required to make change, as well as the coins that have been selected. We will also include a reset button to clear the input fields and reset the results. With this project, we aim to provide a useful tool for those interested in learning about dynamic programming and the Coin Change Problem, as well as anyone who needs to quickly calculate the minimum number of coins required for making change.

The Coin Change Problem Visualizer project provides an interactive and easy-to-use tool for solving the Coin Change Problem using dynamic programming. The project showcases the power of dynamic programming for solving complex problems and provides a valuable learning resource for students and professionals alike.

The project's user interface is intuitive and allows users to quickly enter denominations, select coins, and view the results. The visualization helps users understand the dynamic programming approach and the algorithm's underlying logic.

While the project has limitations in terms of optimization techniques and additional functionality, it provides a strong foundation for future improvements and extensions. Overall, the Coin Change Problem Visualizer is a valuable tool for anyone interested in learning about dynamic programming and its application in solving real-world problems.