

PRESENTED BY BONA FIDE

# EXPENSE OPTIMIZATION TRACKER



# PROBLEM

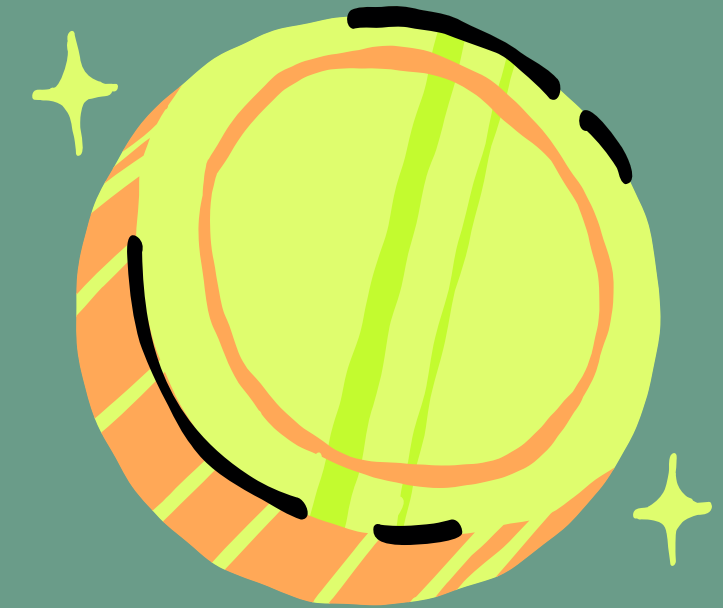
Managing a fixed budget efficiently while maximizing savings and covering essential expenses.



# ITERATION 1

## UNDERSTANDING BUDGET CONSTRAINTS AND EXPENSE ALLOCATION:

How can users effectively allocate a fixed budget while balancing essential and non-essential expenses?



**Decomposition:** Breaking down the budget into individual expenses and their importance.

**Pattern Recognition:** Identifying common spending habits and savings strategies.

**Abstraction:** Simplifying the budget problem into key spending categories.

# ITERATION 2

## FINDING THE OPTIMAL ALLOCATION OF EXPENSES:

How can users decide which expenses to keep or cut to maximize savings while still covering necessary costs?



**Decomposition:** Identifying fixed, variable, and optional expenses.

**Pattern Recognition:** Recognizing trends in past spending and potential savings.

**Abstraction:** Converting expenses into a weighted selection problem.

# ITERATION 3

## CONTINGENCY BUDGET & REAL-TIME EXPENSE ADJUSTMENTS:

How can users handle unexpected expenses, such as medical emergencies, without completely disrupting their budget or resorting to high-interest loans?



**Decomposition:** Separating short-term adjustments from long-term budgeting.

**Pattern Recognition:**

Recognizing past emergency expenses to suggest better emergency fund planning.  
Identifying expenditures that can be cut without major impact.

**Abstraction:**

Creating an adaptive budget model that dynamically responds to emergencies.

# ALGORITHM

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- Categorization & Rule-Based Budgeting
  - 0/1 Knapsack Algorithm
  - Greedy & Rule-Based Adjustments
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A BUDGET IS MORE THAN JUST A  
SERIES OF NUMBERS ON A PAGE; IT  
IS AN EMBODIMENT OF OUR  
VALUES.

– BARACK OBAMA

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**THANK YOU**

**FOR**

**LISTENING!**