NeighborFit Project Assignment

Project Brief

Build a full-stack web application that solves the neighborhood-lifestyle matching problem through systematic research, data analysis, and algorithmic thinking.

Core Requirements

Problem Analysis & Research (50% of grade)

- Identify and define the core problem through user research
- Analyze existing solutions and their gaps
- Develop hypotheses about user behavior and test them
- Use data to validate or invalidate your assumptions

Technical Problem-Solving (40% of grade)

- Design and implement a matching algorithm
- Handle real-world data collection and processing challenges
- Build scalable data structures and APIs
- Solve integration challenges with external data sources

Systems Thinking (10% of grade)

- Document trade-offs and decision rationale
- Demonstrate understanding of scalability constraints
- Show systematic approach to complex problem decomposition

Constraints & Problem Parameters

Resource Constraints

- Zero budget - solve using only free resources
- 2-week timeline - scope appropriately
- Limited data access - be creative with data acquisition

Technical Constraints

- Must work with real neighborhood data
- Must be functional (not just mockups)
- Must handle edge cases and data inconsistencies

Deliverables

Technical Implementation

1. **Functional application** with working algorithm
2. **Data processing pipeline** (however basic)
3. **Source code** with clear problem-solving documentation

Problem-Solving Documentation

1. **Problem definition** and hypothesis formation
2. **Research methodology** and findings analysis
3. **Algorithm design** rationale and trade-offs
4. **Data challenges** encountered and solutions implemented
5. **Testing approach** and validation results

Analysis & Reflection

- **Critical evaluation** of your solution's effectiveness
- **Identified limitations** and their root causes
- **Systematic approach** to future improvements

Submission Requirements

- GitHub repository with documented code
- Working deployed application