RESEARCH TASK - 09

PROJECT PROPOSAL

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Syracuse Tenant Safety & Accountability Dashboard

Project Title and Summary Title:

The Syracuse Safe Housing Monitor: Visualizing Unfit Conditions and Landlord Accountability

Summary: This project will build an interactive, public facing dashboard that transforms the City of Syracuse's raw Unfit Properties dataset into an accessible safety tool for renters and community advocates. While the city publishes data on houses declared unfit for human occupancy, this critical information is currently locked in spreadsheet formats that are difficult for the average tenant to parse. Our project will visualize this data to answer three urgent questions: Where are the most dangerous properties concentrated? Which landlords are repeat offenders? And how long have these life safety violations remained unaddressed? By translating technical code violation text into plain English and mapping absentee ownership, this tool will empower tenants to make safer housing choices and support the Department of Code Enforcement in prioritizing interventions.

Problem Statement

The Core Issue: Syracuse faces a documented crisis of "runaway rentals" properties that operate outside of compliance frameworks, often owned by absentee landlords who may not respond promptly to critical safety hazards. The "Unfit for Human Occupancy" designation (Section 107.1.3 of the Property Maintenance Code) is the most severe label the city can apply, indicating hazards like sewage backups, lack of heat, or fire damage. Yet, for a family desperately seeking housing, this information is often invisible until they have already signed a lease.

Who is Asking: This information is vital for the **Syracuse Tenants Union (STU)**, which has identified aggressive code enforcement and landlord accountability as key platform pillars, and for **prospective renters** who lack the technical skills to navigate the city's open data portal. It also serves **neighborhood associations** in zip codes like 13204 and 13205, where distress is often concentrated, helping them identify "zombie" properties that drag down community value.

Data Sources

- **Primary Source:** Unfit Properties (Syracuse Open Data).
  - *Quality:* High frequency of updates.
  - *Key Fields:* address, violation_date (to calculate days open), owner_address (to identify absentee status), and corrective_action (the description of the hazard).
  - *Limitations:* The corrective_action column often contains dense legal jargon (e.g., "Apply for Certificate of Use") or vague text ("REMOVE UNFIT VIOLATION") that requires interpretation.

- **Secondary Source:** Syracuse Rental Registry (Syracuse Open Data).
  - *Purpose:* To cross-reference whether an unfit property is also unregistered, highlighting "rogue" landlords.

Technical Approach

Our approach focuses on "low-code" efficiency to ensure the project is sustainable and easy to hand off.

- **Data Enrichment:** I will use Python (Pandas) to ingest the live CSV data. I will create a custom "Absentee Logic" script that compares the *Property Zip Code* against the *Owner Zip Code*. If they differ, the landlord is flagged as "Non-Local," a key risk indicator.

- **NLP for Clarity:** I will employ a simple Natural Language Processing (NLP) technique to scan the corrective_action text for keywords like "SEWAGE," "FIRE," "HEAT," and "WATER." This allows us to auto-tag complex violations with simple icons (e.g., a flame icon for fire damage), making the data instantly understandable to non-English speakers or busy residents.

- **LLM Augmentation:** I will use a Large Language Model (LLM) to generate one-sentence "Plain English Summaries" for the vague violation descriptions found in the dataset, effectively translating "bureaucrat-speak" into "neighbor-speak".

Deliverable Description

I will build a web based interactive dashboard (using Streamlit) titled "Is This House Safe?". The dashboard will feature:

1. **The Hazard Map:** A color coded map of Syracuse where red pins indicate "Unfit" properties. Pins will differ in shape based on whether the landlord is Local or Absentee.
2. **The "Days Unsafe" Ticker:** A leaderboard showing properties that have remained unfit the longest (e.g., "112 Days Open"), highlighting stalled enforcement cases.
3. **Landlord Lookup:** A simple search bar where a user can type a landlord's name and see all unfit properties associated with them, visualizing their portfolio's health.

Success Criteria

- **Usability:** The dashboard loads in under few seconds and is mobile responsive** (crucial for tenants using phones as primary internet access).
- **Engagement:** The tool is shared by at least two local community organizations (e.g., Syracuse Tenants Union, CNY Fair Housing, Mainly SU Students).
- **Clarity:** A test group of non technical users (Can be SU Students) can correctly identify the primary hazard of a property within 10 seconds of viewing its profile.
- **Impact:** Identification of at least 5 "Cluster Owners" landlords with multiple unfit properties to be reported to the Bureau of Administrative Adjudication.

Timeline

Week	Activity
Week 1-2	**My Project proposal**
Week 3-4	**Data Acquisition and Exploration**
Week 5-10	**Development**
Week 11-12	**Polish and Documentation**

Risks and Mitigations

- **Risk:** The corrective action text is too vague to categorize (e.g., just says "See Inspector").
    - ➢ Mitigation: I will categorize these as "Unspecified Safety Hazard" and encourage users to contact 311 for details, rather than guessing.
- **Risk:** Landlord names are hidden behind LLCs.
    - ➢ Mitigation: I will map based on owner address rather than just owner name. If 10 LLCs all map to the same PO Box in Clay, NY, we group them as a single entity.
- **Risk:** Data becomes stale.
    - ➢ Mitigation: The application will be designed to fetch fresh data from the Open Data API every time it loads, ensuring tenants never see outdated status information.