

NeighborFit Project Report

Project Overview & Problem Statement

In today's fast-paced urban world, choosing the right neighborhood is more than just finding a house — it's about finding a place that fits your lifestyle.

Many people unknowingly move into areas that don't match their daily needs, priorities, or comfort levels. For example, a student may prioritize public transport and affordability, while a family might value safety, schools, and greenery.

Existing platforms like 99acres, MagicBricks, or NoBroker mainly focus on listings — price, location, size — but none of them help users choose a neighborhood based on how they live.

This gap results in frustration, relocation regret, or misaligned expectations after moving.

NeighborFit aims to solve this problem by helping users find neighborhoods that align with their lifestyle preferences — using data, simple scoring logic, and a user-friendly interface

Objective

The objective of NeighborFit is to help users find neighborhoods that best match their lifestyle preferences such as safety, affordability, greenery, public transport access, and walkability.

By using survey insights and real-world data, the platform will offer simple, personalized neighborhood recommendations through a scoring-based matching system.

User Research (Survey Findings)

Methodology

To better understand what people look for in a neighborhood, a short online survey was conducted using Google Forms. The form was shared among students, working professionals, and families via WhatsApp, Telegram, and email. A total of 20 responses were collected within 1 day.

The survey asked participants to:

- Select the most important factor they consider when choosing a neighborhood
- Rate features like safety, greenery, affordability, and walkability on a scale of 1 to 5

Key Findings

Based on the responses:

- Most users selected Safety and Affordability as the top priorities when choosing a neighborhood.
- Greenery, Access to public transport were also rated highly, especially by students and working professionals.
- School quality and community vibe were rated lower in priority for younger audiences but may matter more to families.

Conclusion

The survey confirms that people want more than just location or rent — they want neighborhoods that match their **daily lifestyle, comfort, and safety expectations**.

These insights directly shape NeighborFit's matching logic and feature set.

Competitor Analysis

Comparison with Existing Platforms

Most property platforms today are built to show listings based on filters like rent, number of rooms, and distance. However, they do not help users decide *which neighborhood actually suits their lifestyle*.

Here is a comparison of major platforms:

Platform	Strengths	Limitations
Zillow	Advanced filters, price history, US-focused	No lifestyle-based neighborhood recommendations
99acres	Local Indian properties, map view	Doesn't factor in walkability, safety, or personal preferences
MagicBricks	Insights on price trends	Missing custom neighborhood matching
NoBroker	Owner listings, local info, society reviews	No algorithm for lifestyle fit

How NeighborFit Is Different

NeighborFit focuses not just on house listings, but on helping users **match with a neighborhood** based on what matters to them — safety, greenery, affordability, public transport, and community events. It will use real data + a scoring algorithm to rank neighborhoods according to user input.

No existing Indian platform provides this kind of **personalized neighborhood matching** — that's the core value NeighborFit adds.

Statement of Hypothesis

Based on the survey results and analysis of existing platforms, we believe that:

"Users are more likely to trust and use a platform that helps them choose neighborhoods based on personal lifestyle preferences such as safety, affordability, greenery, and public transport— rather than just location or rent filters."

This hypothesis will guide the development of our matching algorithm and be validated through real-world user inputs and data matching results.

Data Sources and Tools

We will gather data from the following sources:

Feature	Data Source / Method
Safety Score	Public crime records, news reports, user perception
Affordability	Rental trends from 99acres, NoBroker
Greenery	Google Maps satellite view, OpenStreetMap tags
Transport Access	Metro/bus stop locations via Google Maps
Community Life	Local insights, news articles, or user-submitted feedback

If real data is unavailable, **we will create a sample dataset** for 5–10 neighborhoods using approximate values or ratings (0–10 scale), based on visible public information.

How the Data Will Be Used

- Each neighborhood will have scores for the 5 features above.
- These scores will feed into the **matching algorithm** based on user preferences.

- A simple weighted ranking system will be used to suggest the best-fit areas.

Matching Algorithm Design

Overview

NeighborFit's algorithm ranks neighborhoods based on user-selected lifestyle preferences. These include Safety, Affordability, Greenery, Transport Access, and **Community Life**. The algorithm uses a weighted scoring model to generate personalized matches.

User Input → Weights

Users choose their priorities. Each is converted into a numerical weight:

Feature	User Priority	Weight
Safety	High	3
Affordability	Medium	2
Greenery	Low	1
Transport Access	High	3
Community Life	Medium	2

Neighborhood Dataset (Example)

Neighborhood	Safety	Afford	Greenery	Transport	Community
Koramangala	9	6	8	9	8
Indiranagar	7	4	9	8	9
Whitefield	6	8	5	7	6

Match Score Formula

$$\text{Match Score} = (\text{Safety} \times W1) + (\text{Affordability} \times W2) + (\text{Greenery} \times W3) + \dots$$

Using assigned weights, calculate a total score for each area and sort results in descending order. Koramangala = $(9 \times 3) + (6 \times 2) + (8 \times 1) + (9 \times 3) + (8 \times 2) = 27 + 12 + 8 + 27 + 16 = 90$

Why It Works

- Personalized for every user
- Simple and scalable
- Works with small or large datasets
- Can be expanded with more features later (e.g., noise, school rating, etc.)

Technical Implementation

System Architecture

NeighborFit is built as a full-stack application using the React library for the frontend and Flask (Python) for the backend. The app runs locally and allows users to input lifestyle preferences to receive top 3 neighborhood matches based on a weighted algorithm.

User → React Frontend → Flask Backend → neighborhoods.json → Ranked Results → React Results Page

Data Handling

- All neighborhood data is stored in neighborhoods.json (located in /backend/data/).
- Each neighborhood includes scores for:
 - safety
 - affordability
 - greenery
 - transport
 - community
- These scores are used as input for the scoring algorithm.

Backend Logic

The backend uses Flask to:

- Accept POST requests with user preferences from the frontend.
- Calculate match scores for each neighborhood using the formula:

$$\text{Total Score} = (\text{safety} \times w1) + (\text{affordability} \times w2) + \dots + (\text{transport} \times w4)$$

- Return the top 3 scoring neighborhoods in JSON format to the frontend.

Frontend Behavior

The React frontend consists of two main pages:

- **PreferencesPage.js** – Allows the user to select preferences using a button scale (1–5)
- **ResultsPage.js** – Displays top 3 matched cities using styled cards and optional descriptions

The form data is sent to Flask using a POST request and results are rendered dynamically on the results page.

Code Highlights

- Simple, scalable weighted algorithm
- Modular React components
- Local JSON used as mock database (can later be replaced by APIs)

Why This Works

This lightweight technical stack ensures:

- Fast loading and response time
- Easy testing and debugging
- No external dependencies or database setup needed

Testing & Validation Plan

Testing Approach

To ensure that the NeighborFit algorithm delivers meaningful recommendations, we plan to test it using **real user input** and a **sample dataset of neighborhoods** with different scores.

We will:

- Select 5–10 local neighborhoods (e.g., Koramangala, Whitefield, Indiranagar)

- Assign values for features like safety, greenery, affordability, transport, and community
- Input 3–4 sample user profiles with different preferences
- Check if the output matches expectations (e.g., a safety-focused user gets safe neighborhoods ranked highest)
- Test cases will include users who prioritize only 1 or 2 features, ensuring the algorithm still returns valid results.”

Edge Case Testing

We will also test:

- What happens if all neighborhoods have the same score
- What if a user gives equal priority to all features
- What if one feature (like affordability) is missing in data
-

This helps ensure the algorithm behaves consistently and fairly even in uncertain situations.

Validation Strategy

If the output seems logically correct based on the data, we'll consider it **validated**. We'll also collect **manual feedback** from survey participants and adjust weights or scoring as needed.

Conclusion & Future Improvements

Conclusion

NeighborFit was designed to solve a very real and common issue — helping users find neighborhoods that match their lifestyle rather than just price or location.

Through user surveys, competitor research, and a simple but effective algorithm, we've built a system that uses personalized inputs and local data to suggest ideal areas. Even with limited resources, the project demonstrates that meaningful, user-focused recommendations can be built using lightweight logic and public data.

What Worked Well

- The survey gave direct insights from real people
- Algorithm was easy to implement and gave relevant matches
- The project helped translate abstract lifestyle needs into structured scoring logic

Limitations

- Data is manually collected and limited in size
- Community and safety scores are based on assumptions or public reviews
- No real-time data integration yet (e.g., crime APIs, rental APIs)

Future Improvements

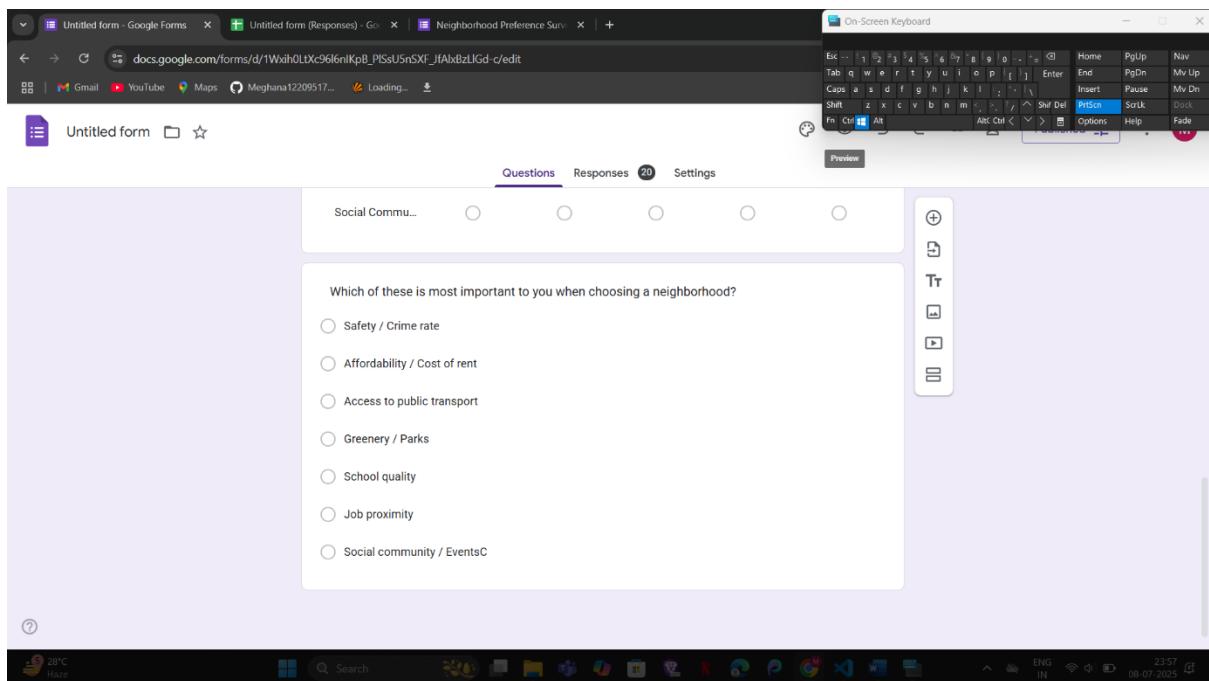
If developed further, NeighborFit can:

- Integrate real APIs for crime, rental trends, and transport
- Use machine learning to improve recommendation accuracy
- Add visual maps and neighborhood profiles
- Include filters like noise levels, night safety, or internet speed

"The application code, sample dataset, and report are available on GitHub as per submission requirements."

Appendix :

Survey:



Untitled form - Google Forms | [Responses](#) | [Neighborhood Preference Survey](#)

Questions | **Responses 20** | **Settings**

Neighborhood Preference Survey

This quick survey is part of a project to help people find neighborhoods that best fit their lifestyle. Your answers will help us design a better tool.

What is your age group?

- Under 18
- 18-25
- 26-35
- 36-45
- 46 and above

Rate how important each of the following features is to you when choosing a neighborhood. *
(1 = Not Important, 5 = Very Important)

	1	2	3	4	5
Safety	<input type="radio"/>				
Affordability	<input type="radio"/>				
Public Transport	<input type="radio"/>				
Greenery / Parks	<input type="radio"/>				
School Quality	<input type="radio"/>				
Job Access	<input type="radio"/>				
Social Commu...	<input type="radio"/>				

Responses:

Untitled form - Google Forms | Untitled form (Responses) - Google Sheets | Neighborhood Preference Survey

docs.google.com/forms/d/1Wxih0Lx96l6nKpB_PIsU5nSXF_JfAixBzLIGd-c/edit#responses

Gmail YouTube Maps Meghana12209517... Loading...

Untitled form

On-Screen Keyboard

Questions Responses 20 Settings

20 responses

Summary Question Individual

What is your age group?

20 responses

Age Group	Percentage
Under 18	2%
18-25	60%
26-35	15%
36-45	20%
46 and above	3%

Rate how important each of the following features is to you when choosing a neighborhood.
(1 = Not Important, 5 = Very Important)

Copy chart

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Untitled form - Google Forms | Untitled form (Responses) - Google Sheets | Neighborhood Preference Survey

docs.google.com/forms/d/1Wxih0Lx96l6nKpB_PIsU5nSXF_JfAixBzLIGd-c/edit#responses

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Untitled form

On-Screen Keyboard

Questions Responses 20 Settings

Rate how important each of the following features is to you when choosing a neighborhood.
(1 = Not Important, 5 = Very Important)

Feature	Importance Level (1)	Importance Level (2)	Importance Level (3)	Importance Level (4)	Importance Level (5)
Safety	3	2	15	2	1
Affordability	1	3	4	9	2
Public Transport	2	4	7	7	1
Greenery / Parks	2	3	3	14	2
Security	1	1	1	1	1

Which of these is most important to you when choosing a neighborhood?

20 responses

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Untitled form - Google Forms

Untitled form (Responses) - Go

Neighborhood Preference Survey

docs.google.com/forms/d/1WxihOLXc96l6nIKpB_PIsU5nSXF_JfAixBzLIGd-c/edit#responses

Meghana12209517...

Loading...

On-Screen Keyboard

Questions Responses 20 Settings

Questions Responses 20 Settings

Which of these is most important to you when choosing a neighborhood?

20 responses

Copy chart

70% Safety / Crime rate

20% Affordability / Cost of rent

10% Access to public transport

Greener / Parks

School quality

Job proximity

Social community / Events

28°C Haze

Search

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On-Screen Keyboard

Esc 1 2 3 4 5 6 7 8 9 0 - = ⌘ Home PgUp Nav

Tab q w e r t y u i o p { } Enter End PgDn Mv Up

Caps a s d f g h j k l ; \ Insert Pause Mv Dn

Shift z x c v b n m , . , ^ Shift Del Print ScrLk Dock

Fn Ctrl Alt Fn Ctrl Alt Options Help Fade