Vucar Take-Home Assignment

Topic: Design and Prototype a "Car Value Insights" Feature for Vietnamese Users

Deadline: 3 days since you've accessed this assignment

Format

- A short product proposal (PDF, 2-3 pages) **AND**
- A lightweight code prototype (e.g., Python script or API)

Goal

Showcase your product sense by designing a feature for dinhgiaxe.ai.vn that helps Vietnamese used car buyers or sellers make smarter decisions, paired with a simple technical prototype to demonstrate feasibility.

Details

Vucar's platform, dinhgiaxe.ai.vn, aims to simplify the car buying and selling experience in Vietnam, where users face unique challenges: a mix of motorcycles and cars, brand loyalty (e.g., Toyota, Honda), and sensitivity to price depreciation due to import taxes and usage patterns. Your task is to design a "Car Value Insights" feature that provides actionable insights to users (e.g., buyers or sellers) and build a basic prototype to bring one part of it to life. Think about what Vietnamese users need and how technology can solve their pain points.

What to Include

1. **User Problem & Market Insight**
    - **Task**: Identify 1-2 specific pain points for Vietnamese car buyers or sellers (e.g., "Buyers don't know if a car's price is fair," "Sellers struggle to price competitively").
    - **Deliverable**: In your proposal, explain:
        - The problem(s) you're solving.
        - Why this matters in Vietnam (e.g., cultural habits, market trends like high demand for fuel-efficient cars).
2. **Feature Design**
    - **Task**: Propose a "Car Value Insights" feature with 2-3 key components tailored to Vietnamese users. Examples might include:
        - A price fairness indicator (e.g., "This car is priced 10% below market average").
        - A depreciation trend graph based on make/model/year.
        - A local market alert (e.g., "Toyota Vios prices are rising in Hanoi").

    - **Deliverable**: For each component:
        - Describe what it is and how it works.
        - Explain why it's valuable to Vietnamese users.
        - Highlight one way it's different from generic tools like Waze or Kelley Blue Book.
3. **Prototype**
    - **Task**: Build a lightweight prototype for *one* component of your feature. For example:
        - A Python script that calculates a "fair price" based on synthetic data (e.g., make, model, year, mileage).
        - A simple API endpoint (e.g., using FastAPI) that takes car details and returns an insight (e.g., price estimate or depreciation rate).
    - **Deliverable**: Submit working code with:
        - A small synthetic dataset (10-20 cars) reflecting Vietnamese market traits.
        - Basic functionality (e.g., a trained ML model or rule-based logic).
        - Instructions to run it locally and an example input/output.
4. **Validation & Tradeoffs**
    - **Task**: In your proposal, address:
        - How would you test this feature with real users? (e.g., "Show it to 10 car sellers and get feedback on price accuracy").
        - One potential challenge (e.g., "Limited data on rural sales") and a quick solution (e.g., "Start with urban data and expand later").
    - **Deliverable**: Keep it concise but show you've thought about execution.
5. **Proposal Polish**
    - **Task**: Make your proposal visually clear and user-focused.
    - **Optional**: Include a quick sketch or mockup of one component (e.g., how the price indicator might look on a webpage).

Guidelines

- **Time**: Designed to take ~3 days:
    - Day 1: Research the market, define the problem, and design the feature.
    - Day 2: Build the prototype and refine your ideas.
    - Day 3: Write the proposal and test your code.
- **Scope**: Keep it simple—no need for a full app or complex UI. Focus on product thinking and a functional prototype.
- **Tools**: Use Python (e.g., pandas, scikit-learn) for the prototype. FastAPI/Flask optional for API. No advanced tech required.
- **Submission**: Email talent@vucar.net with:
    - Proposal (PDF, 2-3 pages).
    - Code (zip file or GitHub link) + run instructions.
- **Product Taste**: Show you can prioritize user needs and make tradeoffs—avoid overcomplicating the solution.

Why This Assignment?

This tests your ability to:

- Understand Vietnamese user needs and translate them into a product feature (product sense).
- Design something intuitive and valuable (product taste).
- Prototype a technical solution that supports your vision (engineering skills).
- Communicate clearly and balance user and technical priorities (core Vucar traits).

Example Idea

- **Problem**: Buyers overpay because they don't know local price trends.
- **Feature**: A "Price Check" tool showing if a car's price is fair, plus a 6-month value trend.
- **Prototype**: A script that predicts a fair price using mileage and year, based on synthetic data.

We're excited to see how you blend product thinking with technical execution. Have fun creating something Vietnamese users would love!

Link to the CSV file:
https://drive.google.com/file/d/14-oWkLU--L3_9ZdlWDgEj4pnUg8ovE9s/view?usp=sharing