Bachelor's degree in Techniques for Software Application Development
Final Project Proposal

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Introduction

This project will create a **Smart Geo-Marketing & Mobility Analytics System**, a web application that combines traffic data, customer behavior, and business location analysis. This system will help business owners, marketers, and city planners make better decisions by using data

Since I work as a Data Analyst, I enjoy using data to find patterns and make decisions. This project is interesting for me because it combines geospatial analysis with business intelligence. It is a useful tool for companies, and it can also be applied in different industries.

Project Description

The Smart Geo-Marketing & Mobility Analytics System will allow users to:

- Analyze different locations based on population, income, traffic, and business activity.
- Find the best areas for opening a new store, restaurant, or business.
- Compare locations to see which one is better for a business strategy.
- Identify marketing opportunities based on people's movement and interests.
- Generate reports with insights for business expansion and planning.

Some ideas that the Localization Based Systems and Intelligent Spaces web application will have:

- A dashboard with key statistics and a map showing business opportunities.
- A map analysis page where users can explore data about different locations.
- A reports page where users can see insights into customer demographics and business trends.
- A marketing insights page that suggests where to advertise based on customer behavior.

Since real-world data is not always available, I will create mock data based on distributions from public datasets like OpenStreetMap, census data, and mobility reports. This will make the project realistic while respecting data privacy.

****NOTE: There is also a possibility to use AI in the future to improve recommendations and analysis, but this is not part of the first phase of the project.*
So, in summary we will have updates to keep the team informed, ending up in a faster response to issues that improve reliability.

Technology and Methodology

To develop the system, I will use the following technologies:

- **Database Management:** PostgreSQL with PostGIS to store and manage geospatial data.
- **Backend Development:** Python with Flask or Django for data processing.
- **Frontend Development:** React or Vuejs for the user interface and Leaflet* for interactive maps.
- **Data Integration:** Mock datasets created based on real-world data patterns.

Personal Motivation and Relevance

As a **Data Analyst**, I enjoy working with **data visualization and business intelligence**. This project is interesting for me because it **applies data analysis to real-world problems**. I like the idea of using **geospatial data** to **help businesses and cities make better decisions**.