**Transport in Ireland**

**Introduction**

**Project Overview**

This project takes a deep dive into the world of public transportation and cycling, with a particular focus on Ireland's approach to these modes of transit. Public transport, including buses, trains, and trams (like the Luas in Dublin), plays a crucial role in urban sustainability and mobility. Cycling, as an eco-friendly and health-promoting mode of transport, is also a key area of interest.

Our objective is to thoroughly examine how Ireland manages its public transport systems and cycling infrastructure. We'll explore various facets such as the efficiency, coverage, and user-friendliness of buses, trains, and trams, as well as the accessibility and safety of cycling routes.

The project will then extend to a comparative analysis with Denmark, a country renowned for its advanced public transport systems and cycling-friendly cities. This comparison aims to identify best practices, areas where Ireland can improve, and strategies that have successfully boosted public transport and cycling in Denmark.

By focusing on these specific aspects of urban transport, the project seeks to contribute valuable insights into enhancing sustainable mobility in Ireland, drawing lessons from the Danish experience.

**Significance**

Analysing public transportation and cycling data is crucial for several reasons. Firstly, it enhances urban mobility by helping create more efficient and user-friendly transport systems. This directly improves the quality of life in urban areas by making travel easier and more accessible. Secondly, with the urgent need to address environmental issues, this analysis is key to promoting sustainable transport options like cycling and public transport. These modes can significantly reduce carbon emissions and pollution, contributing to a healthier environment. Thirdly, efficient public transport and cycling networks have immense social and economic benefits. They offer affordable and accessible travel options, crucial for social inclusion and economic development. Lastly, comparing Ireland's public transport and cycling infrastructure with Denmark, a country known for its exemplary transport systems, will provide valuable insights. This comparison will highlight best practices and areas for improvement, guiding policymakers in enhancing Ireland's transport system.

**Project Goals**

This project aims to thoroughly analyse Ireland's public transportation and cycling infrastructure and compare it with Denmark's system. The focus will be on assessing the efficiency, user experience, and sustainability of these systems. The project seeks to identify areas where Ireland can improve its public transport and cycling facilities. Based on this analysis, evidence-based recommendations will be made to enhance Ireland's transport systems, drawing from Denmark’s successful practices.

**Project Planning**

**Agile Framework Adoption**

Adopting the Agile Project Management framework will allow flexibility and adaptability in handling the complex and dynamic nature of transport data analysis. The Agile Project Management framework is particularly well-suited to projects that benefit from fast-paced, incremental progress, such as the dynamic analysis of transportation data. By breaking down the project into smaller, more manageable segments, or "sprints,"

**Tools and Technologies**

I will be using a combination of Jupyter Notebook, Python, and GitHub to manage, analyse and document the data effectively.

Jupyter Notebook: As an interactive computing environment, Jupyter Notebook will be the primary tool for conducting and documenting the data analysis. It allows for a seamless integration of live code, text, and visualizations in a single document, making it ideal for exploratory data analysis, data cleaning, and result presentation.

Python: Python, known for its simplicity and powerful libraries, will be employed for all computational tasks. Libraries such as Pandas, for data manipulation; Matplotlib and Seaborn, for data visualization; and Scikit-learn, for any advanced statistical analysis or machine learning, will be particularly useful. Python’s ability to handle large datasets and perform complex analyses efficiently makes it an excellent choice for this project.

GitHub: To manage the project’s codebase and track changes over time, GitHub will be used. It will serve as a version control system, ensuring that all modifications and iterations of the analysis are recorded and organized. GitHub also facilitates easy sharing and collaboration, which can be beneficial for project transparency and stakeholder engagement.

The integration of these tools aligns perfectly with the Agile project management framework adopted for this project. They enable an iterative, flexible approach to data analysis and ensure that every stage of the project is well-documented and reproducible.

**Project Timeline**

The project is set for a six-week duration, structured in sprints:

Week 1: Data acquisition and preliminary analysis.

Weeks 2-3: In-depth analysis of Irish transport data.

Week 4: Comparative analysis with Denmark.

Week 5: Drafting recommendations and report preparation.

Week 6: Final review and report submission.