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Project Title: Exploring Pedestrian Activity and Park Utilisation in Casey Suburbs

Introduction

Understanding pedestrian activity and park utilisation is crucial for urban planning and community well-being (Lopez Baeza et al., 2021). With the City of Casey governing several suburbs in the outer south-eastern suburbs of Melbourne, understanding pedestrian movement patterns is vital for informed infrastructure planning and improving public spaces. Insights from this analysis will benefit urban planners, local government, and community organisations.

Motivation

Living near the City of Casey, I am fascinated by the area's dynamic urban environment and the challenges of balancing development with pedestrian-friendly spaces. My personal interest in urban planning and public safety drives me to explore how data can reveal patterns that help make the City of Casey a more walkable and liveable community.

Questions

1. What are the peak times for pedestrian activity in different parts of the suburbs governed by the City of Casey?
2. How does pedestrian activity vary between weekdays and weekends?
3. How are parks and reserves in the City of Casey utilised by pedestrians, and are there notable trends in park usage across different seasons?

Data Sources

1. Pedestrian Count (Hourly)

This dataset displays the hourly pedestrian count automatically recorded by IoT sensors which are installed at various locations in the City of Casey. The data is in tabular format. The data has 25 columns and 138821 rows. The attributes of the data is spatial attributes, timestamps, and hourly pedestrian count. The period of the data is from 12th August 2021 until 28th April 2024.
Source: https://discover.data.vic.gov.au/dataset/pedestrian-count-hourly

2. Parks and Reserves Locations

This dataset displays the location and classifications of parks and reserves within the City of Casey. The data is in tabular format. The data has 16 columns and 3237 rows. The attributes of the data are spatial attributes.
Source: https://discover.data.vic.gov.au/dataset/parks-and-reserves-locations

3. Australia shape file

This dataset is a shapefile to overlays the map of Australia that I get from GADM open source. The data is in shp extension format.
Source: https://gadm.org/download_country.html

References

Lopez Baeza, J., Carpio-Pinedo, J., Sievert, J., Landwehr, A., Preuner, P., Borgmann, K., Avakumovic, M., Weissbach, A., Bruns-Berentelg, J., & Noennig, J. R. (2021). Modeling Pedestrian Flows: Agent-Based Simulations of Pedestrian Activity for Land Use Distributions in Urban Developments. Sustainability, 13(16), 9268-. https://doi.org/10.3390/su13169268