MSc Project Description

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Project title: Energy Consumption Analysis and Optimisation for Scottish Councils using Big Data.

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Key techniques: Python, Data Warehousing, Data Analysis, Machine learning and Deployment.

Background	Scottish councils are responsible for managing a large number of public buildings and services, which results in significant energy consumption. The energy consumed by these buildings and services represents a significant cost for councils and can also have a significant impact on the environment. Therefore, there is a need to understand the patterns and trends of energy consumption by Scottish councils and develop solutions that can optimize energy consumption.
Project Aims	Aim is to collect dataset and analyse the dataset related to energy consumption in Scottish public buildings for 2005 to 2020 and use this analysis to develop accurate predictive models for energy consumption. And deploy these models to optimize energy consumption.
Project Objectives	• Collect open-source data from government websites. • Transform data according to needs. • Develop business intelligence dashboards and reports to monitor and analyse the energy consumption data, identify patterns, and trends. • Perform exploratory data analysis to gain insights into the data, identify patterns, correlations, and anomalies. • Develop machine learning models to predict energy consumption accurately. • Deploy the machine learning models and the algorithms for optimization of energy consumption

References	1: https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Fenergy-consumption 2: https://www.gov.uk/government/collections/total-final-energy-consumption-at-sub-national-level 3: https://www.gov.uk/government/collections/sub-national-electricity-consumption-data 4: https://www.gov.uk/government/collections/sub-national-gas-consumption-data