**CCT College Dublin**

**Assessment Cover Page**

*To be provided separately as a word doc for students to include with every submission*

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| **Module Title:** | Data Preparation & Visualisation  Machine Learning for Data Analysis  Programming for Data Analytics  Statistics for Data Analytics |
| **Assessment Title:** | MSC\_DA\_CA2 |
| **Lecturer Name:** | **David McQuaid**  *Muhammad Iqbal*  *Sam Weiss*  *Taufique Ahmed* |
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| **Assessment Due Date:** | 05th January,2024 |
| **Date of Submission:** | 05th January,2024 |

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**Declaration**

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| By submitting this assessment, I confirm that I have read the CCT policy on Academic Misconduct and understand the implications of submitting work that is not my own or does not appropriately reference material taken from a third party or other source. I declare it to be my own work and that all material from third parties has been appropriately referenced. I further confirm that this work has not previously been submitted for assessment by myself or someone else in CCT College Dublin or any other higher education institution. |

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GitHub Link: <https://github.com/SyedAsadAilia110/CA2.git>

# Introduction

This research investigates statistical analysis of data with an emphasis on the transport sector in Ireland. Our objective is to offer a thorough global examination and contrast of transport patterns using the copious amounts of data generated by smartcard ticketing systems. With a focus on freight transport, air traffic, car traffic, and facilities, the project analyses many datasets to provide a comprehensive understanding of Ireland's transport landscape and provide insights based on data.

With a focus on real-world execution, the project places a high priority on scientific rigor, open records, and effective interaction. A thorough examination of the transportation information area is supported by the tasks listed, which include machine learning programmes, statistical analysis, analysis of information programming, and data processing and visualisation.

# Introduction to the Scenario

In the age of smartcard ticketing, data turns become a driving force for improving public transportation. In this scenario, judgments are made and services are improved by examining Ireland's transportation data. Forecasting, sentiment analysis, and cross-national comparisons are all part of the challenge, which calls for a comprehensive strategy that combines machine learning, programming, statistics, and sophisticated visualization. Finding insights that will inform strategic recommendations for the ever-changing urban transportation context is the aim.