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**Assessment Cover Page**

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| *Module Title* | Strategic Thinking |
| *Assessment Title* | Rent Predictor: A Machine Learning Approach to Forecast Dublin Home Rent |
| *Assessment Due Date* | 18th May 2025 |
| *Date of Submission* | 18th May 2025 |

**Declaration**

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.

Rent Predictor: A Machine Learning Approach to Forecast Dublin Home Rent

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# Introduction

Rental homes are an integral part of the housing ecosystem, providing an alternative to homeownership. A properly functioning housing market is an essential ingredient of a properly functioning economy and society. (IPOA and IPAV)

From an economic, social and political perspective, housing is currently the greatest challenge faced by Irish policymakers. The housing challenge is manifested in a lack of supply of owner-occupier and rental properties; prohibitively high house prices and rents; and a serious problem of homelessness. (IPOA and IPAV)

# Problem Definition

The inability to provide an adequate supply of suitable and affordable housing supply for those who want to rent has very negative economic and social consequences. These consequences include:

* High and rising rents take spending power out of the economy and render it very difficult for aspiring house buyers to build up a sufficient deposit.
* High and rising house rents put upward pressure on wages, and this undermines national competitiveness.
* The availability of an abundant supply of high-quality housing to rent or purchase at affordable prices is a necessary condition for labour mobility within a country and between countries. For Ireland, inward migration is an essential part of the economic model, and housing can act as a major impediment to such labour flows.  
  (IPOA and IPAV)

# Project Scope

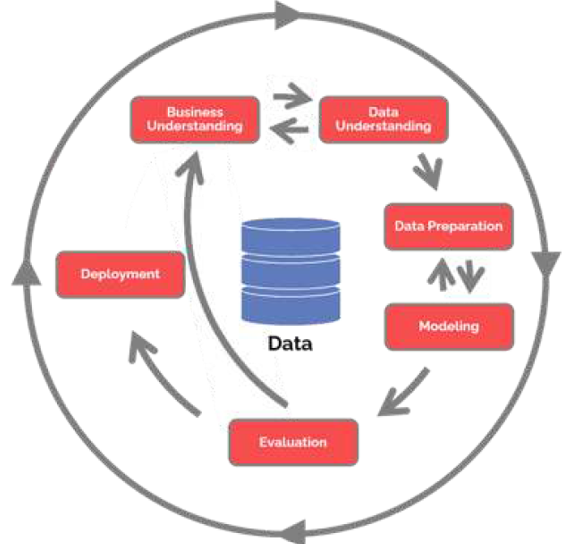
The scope of this project is to understand the **Project Management** strategy using key factors like increase in Dublin home rent price every quarter for three different types of homes namely apartment, terrace house and semi-detached house. The target of this study is to help the renters to decide on the future rent prices in Dublin so that expenses are planned.

Use the AI technology along with the Machine Learning models like ARIMA, Linear Regression and Random Forest algorithm to predict the future rent at Dublin based on the **CRoss Industry Standard Process for Data Mining** (CRISP-DM).

This is a process model that serves as the base for a data science process that includes 6 phases as below.

1. Business Understanding
2. Data Understanding
3. Data Preparation
4. Modelling
5. Evaluation
6. Deployment

(Hotz)



# Business Understanding

The

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# References

(IPOA and IPAV)

IPOA, and IPAV. *THE IRISH PRIVATE RENTAL MARKET*. IPAV.ie, June 2022.

Available at: <https://www.ipav.ie/sites/default/files/ipav_ipoa_jim_power_updated_report_june_2022.pdf>

(Hotz)

Hotz, Nick. “What Is CRISP DM?” *Data Science Project Management*, 2024, www.datascience-pm.com/crisp-dm-2/.

# GitHub Link

<https://github.com/santhosh-sba24100/SBA24100_CA3_Strategy_Thinking>