**CCT College Dublin**

**Assessment Cover Page**

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| **Module Title:** | Strategic Thinking/ Higher Diploma Data Analytics for Business |
| **Assessment Title:** | Individual / Practical |
| **Lecturer Name:** | James Garza |
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| **Assessment Due Date:** | 15 Dec 2023 |
| **Date of Submission:** |  |

**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. |

**Hospitality Management and importance of Data Analysis**

Table of Contents

**Type chapter title (level 1)1**

Type chapter title (level 2)2

Type chapter title (level 3)3

**Type chapter title (level 1)4**

Type chapter title (level 2)5

Type chapter title (level 3)6

**Testing testing 1**

**Type chapter title (level 1)2**

**Type chapter title (level 1)1**

**Type chapter title (level 1)1**

Introduction

Business Understanding

Subject area: Hospitality Management with focus on Revenue Management

Project Plan

Use of technologies

Libraries

We have downloaded all the libraries, panda for data manipulation and analysis library, matplotlib.pyplot and seaborn for data visualisation, numpy for numerical computing, sklearn libraries for future scaling for ML models, PCA, encoding, training and testing sets, linear regression model for predictive modelling. Libraries are now imported and have been assigned the abbreviated formats. The abbreviated format makes recalling and using these libraries more efficient. Lastly, we have uploaded a csv file that we renamed as a hotel.df for easy reference.

Dataset

Data was acquired from Property Management Systems SQL databases

We’re looking at the difference properties in Portugal, one being hotel is located in the city of Lisbon and the second property is a holiday resort in the region of Algarve.

ML

Data Prep

Data Vis

Models

Challenges

Analysis of Results

Conclusion

References

<https://www.sciencedirect.com/science/article/pii/S2352340918315191>

<https://towardsdatascience.com/how-to-clean-your-data-in-python-8f178638b98d>

<https://www.geeksforgeeks.org/>

This data article describes two datasets with hotel demand data. One of the hotels (H1) is a resort hotel and the other is a city hotel (H2). Both datasets share the same structure, with 31 variables describing the 40,060 observations of H1 and 79,330 observations of H2. Each observation represents a hotel booking. Both datasets comprehend bookings due to arrive between the 1st of July of 2015 and the 31st of August 2017, including bookings that effectively arrived and bookings that were canceled. Since this is hotel real data, all data elements pertaining hotel or costumer identification were deleted. Due to the scarcity of real business data for scientific and educational purposes, these datasets can have an important role for research and education in revenue management, machine learning, or data mining, as well as in other fields.

* project management methodology to develop and execute a capstone project.
* You will select a dataset
* conduct exploratory data analysis
* pre-process the data
* implement at least one machine learning algorithm,
* and present your findings effectively through a comprehensive report

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the project plan,

business understanding,

data understanding,

data preparation,

machine learning implementation,

and an artefact of code.

summary of the findings,

conclusions

any future recommendations.

**overview of the project's timeline, milestones achieved, and any challenges faced during the implementation phase, key insights gained from analysing the data and present any significant trends or patterns observed, the report should address any limitations or constraints encountered during the project and propose potential solutions for future improvements.**









