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**Assessment Cover Page**

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| *Student Full Name* | Derek O’Hara |
| *Student Number* | sbs24018 |
| *Module Title* | Machine Learning |
| *Assessment Title* | CA1 Project |
| *Assessment Due Date* | 28th April 2024 |
| *Date of Submission* |  |

**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.

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# Introduction

Analysing and predicting student performance is crucial for educational institutions to improve efficiency. It helps identify students with low academic achievements early on, high dropout rates, and delays in graduation (Daniel, B. 2015). It is very important for educational institutions, to understand the potential of using collected data to improve the learning efficacy and academic achievements of both the individual student and institutions themselves (M. Nachouki and M. Abou Naaj, 2022).

This report aims to explore and demonstrate the application of machine learning algorithms to predict academic success. I will be focusing on predicting a group of students' final grade “G3” in a course based on their prior academic data and demographic features. The dataset I have chosen is called the “Student Performance Dataset” and can be found at [kaggle.com](https://www.kaggle.com/datasets/devansodariya/student-performance-data).

# References

Daniel, Ben. (2015). Big Data and analytics in higher education: Opportunities and challenges. British Journal of Educational Technology. 46. 10.1111/bjet.12230. Available at: <https://www.researchgate.net/publication/269936924_Big_Data_and_analytics_in_higher_education_Opportunities_and_challenges>

Nachouki, Mirna & abou naaj, Mahmoud. (2022). Predicting Student Performance to Improve Academic Advising Using the Random Forest Algorithm. International Journal of Distance Education Technologies. 20. 17. 10.4018/IJDET.296702. Available at: <https://www.researchgate.net/publication/362839521_Predicting_Student_Performance_to_Improve_Academic_Advising_Using_the_Random_Forest_Algorithm>

## Dataset:

Student Performance Dataset (2022) <https://www.kaggle.com/datasets/devansodariya/student-performance-data/data>

## Github link:

## Code comments: