**ASSIGNMENT 1**

Machine Learning

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**Introduction**

This report details the collaborative efforts of a two-member team, Rakel and Fred, tasked with the analysis and classification of a dataset called 'Magic Cards.' The objective is to predict the rarity of these cards after undertaking a comprehensive exploration and preprocessing of the dataset. The entire analysis is conducted using Python, with a focus on utilising appropriate machine learning and data processing libraries.

The goals of the assignment is to learn:

1. **Exploration of Datasets through Machine Learning and Visualisation Libraries:** The initial phase of the project involves the exploration of the 'Magic Cards' dataset using machine learning and visualisation libraries. This entails using libraries such as Pandas and NumPy to gain insights into the dataset's underlying structures and patterns.

2. **Data Preprocessing using Machine Learning Libraries:** Subsequently, the focus shifts to the preprocessing of the data, a crucial aspect of any machine learning project. By using the same libraries as in the exploring, various challenges such as missing data, duplicate data, noisy data etc. The primary objective here is to prepare the 'Magic Cards' dataset for the modelling by ensuring its cleanliness and compatibility with machine learning algorithms.

3. **Application of Classification Algorithms to Realistic Data:** The last part of the assignment centres around the application of classification algorithms to predict the rarity of 'Magic Cards.' The same libraries are used to construct and evaluate models capable of categorising these cards into distinct rarity classes. This step demonstrates the ability to translate data preprocessing into actionable insights and predictive models.

**Result**

**FROM COURSE GUIDE**

The report should include:

* an introduction describing the context and goal of the work
* the data set used and results of data exploration;
* the selected preprocessing methods, why these where selected, and results of preprocessing;
* an explanation of how the models where build;
* an explanation of how the models where tested on a new example and results of these tests;
* conclusions and discussion;
* references.