**Learning Outcomes**

Task 2 involves constructing a Machine Learning (ML) model in Python utilizing the teams.csv dataset. Here's a breakdown of the essential steps for building a comprehensive ML project:

1. **Formulating a Hypothesis**: Initial step entails proposing a hypothesis, which in this case, is predicting a country's Olympic medal count based on given data.
2. **Understanding the Data**: Interpretation of the dataset is crucial to categorize, manipulate, and summarize information effectively. The dataset comprises over 2000 rows, containing information such as participating countries, years of Olympics, number of athletes, and previous medals won.
3. **Data Reshaping**: Though minimal reshaping is needed since the data is already structured, we'll primarily focus on utilizing the "Athletes" and "Prev Medals" columns for prediction.
4. **Data Cleaning**: Data cleaning involves eliminating duplicate entries, correcting errors, managing outliers, and handling missing values. The "Prev Medals" column contains missing values for years when specific teams didn't participate, necessitating data cleaning to mitigate this issue.
5. **Error Metrics**: Error metrics quantify ML models' performance. Mean Absolute Error (MAE) will be employed to gauge the discrepancy between actual and predicted medal counts.
6. **Data Splitting**: The dataset will be divided into training and testing sets, facilitating model training and evaluation. Typically, the data is split into 70% for training and 30% for testing.
7. **Training Methods**: Linear Regression, a Supervised ML algorithm, will be utilized. It predicts a continuous value based on explanatory variables by establishing a "line of best fit." The predictors considered are the number of athletes and medals won in previous Olympics, while the target variable is the expected medal count in the upcoming Olympics. The linear regression formula **(Y = a1x1 + a2x2 + B)** incorporating both predictors will guide model training for prediction.