# Multi-class Classification Problem:

## Problem Statement:

This task requires developing a supervised machine learning algorithm that can learn the relationship between attack descriptions and the corresponding MITRE technique. To accomplish this task, you will use a labelled dataset containing attack descriptions and their corresponding MITRE techniques, which will serve as our training data. You are expected to process the text and extract features to train and evaluate a classification model.

The MITRE ATT&CK framework is a globally accessible knowledge base of adversary tactics and techniques based on real-world observations of cyber-attacks. The framework categorizes tactics and techniques used by adversaries in order to help organizations better understand and defend against cyber threats.

## Dataset description:

The dataset for this problem consists of two CSV files - train.csv and test.csv.

* train.csv contains 291 instances, each consisting of a description and a categorical label. You need to train the model on training.csv
* test.csv contains 45 instances, each consisting only of a description without a label. The goal is to predict a class for each instance in the test set using the trained machine learning model.

Evaluation: We will evaluate the model performance using accuracy score.

## Candidate Instructions:

We expect you to:

* Write the code to build the classifier in python.
* You can use any modelling technique as you wish.
* You may have to modify the data to be able to effectively model it.
* We’ll evaluate your submission on the coding practices, model evaluation methods and creativity of the solution.
* Your code should have a README and a requirements file.

Final Deliverable: Please attach an archive (.zip or .tar.gz) of the source code and submit the prediction results of test.csv. Send to **<INSERT\_EMAIL-ID>**

## Time to Complete:

The recommended time to solve this use case is 2 to 3 hours. If you can't complete the exercise in this time, please share what you have as a basis for a discussion.