Prepare a jupyter notebook (recommended - Google Colab) to build, train and evaluate a Machine Learning model on the given dataset.

**Part A**

**Dataset -** <https://drive.google.com/file/d/1pug09dHZBdrPWZ3X73qnlgKRD8DmY0El/view?usp=sharing>

Globally, Security of computers and the networks that connect them is increasingly becoming of great significance. Attacks on the nation’s computer infrastructures are becoming an increasingly serious problem. Computer security is defined as the protection of computing systems against threats to confidentiality, integrity, and availability. A signature detection system identifies patterns of traffic or application data presumed to be malicious. In this assignment you will be working with an intrusion detection data set wherein you have to analyze the data set, investigate and evaluate the result and predict the overall performance of classifiers (Suggestion: SVM and Decision tree to predict)

1. **Import Libraries/Dataset**
2. Download the dataset
3. Import the required libraries
4. **Data Visualization and Exploration** Print at least 5 rows for sanity check to identify all the features present in the dataset and if the target matches with them.
5. Print the description and shape of the dataset.
6. Provide appropriate visualization to get an insight about the dataset.
7. Try exploring the data and see what insights can be drawn from the dataset.
8. **Data Pre-processing and cleaning**
9. Do the appropriate preprocessing of the data like identifying NULL or Missing Values if any, handling of outliers if present in the dataset, skewed data etc. Apply appropriate feature engineering techniques for them.
10. Apply the feature transformation techniques like Standardization, Normalization, etc. You are free to apply the appropriate transformations depending upon the structure and the complexity of your dataset.
11. Do the correlational analysis on the dataset. Provide a visualization for the same.
12. **Data Preparation**
13. Do the final feature selection and extract them into Column X and the class label into Column into Y.
14. Split the dataset into training and test sets.

**Part B**

1. **Model Building**
2. Perform Model Development using at least three models, separately. You are free to apply any Machine Learning Models on the dataset. Deep Learning Models are strictly not allowed.
3. Train the model and print the training accuracy and loss values.
4. **Performance Evaluation**
5. Print the confusion matrix. Provide appropriate analysis for the same.
6. Do the prediction for the test data and display the results for the inference.