# PROJECT PROPOSAL

## Predictive Analytics for Heart Health: A Machine Learning Approach

### Description

In this project, we will analyze a person's heart health condition and predict whether they have any heart disease using various Machine Learning approaches. Heart disease, also known as cardiovascular disease, remains a leading global cause of death. Therefore, our goal is to contribute to the field of heart disease research.

For our analysis, we will utilize a dataset titled "Personal Key Indicators of Heart Disease," which encompasses a total of 18 features. Among these, 9 are boolean data, 5 are strings, and 4 are decimal values. Our approach begins with an exploratory data analysis (EDA) of the dataset, followed by the implementation of common Machine Learning models, including Decision Tree, Random Forest, XGBoost, Gradient Boost, Ada Boost, SVM, Logistic Regression, and Nearest Neighbor.

As output, we will provide the following results:

- training time for each models
- resources that we used for training
- hyperparameters that we have used
- learning curve
- effect of regularizers
- multiple metrics such as accuracy, recall, f1, precision, AUC, ROC

### Group Details

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