# Loan Prediction

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**Problem Statement**: To build a predictive model to predict whether a loan would be approved or declined

Or

To predict the risk of the customer(High Risk, Medium Risk, Low Risk)

- Data contains complete loan data
- Given data is labeled(Supervised ML Problem)

## Data Information:

- Samples:
- Features:
- Categorical features:
- Numeric Features:

## Steps To Build your Project:

1. Problem Statement
2. Data Gathering
3. Exploratory Data Analysis (Analysis using Pandas, matplotlib, seaborn):
    a. Collinearity
    b. Handling Missing values or human error
    c. Identifying outliers
    d. Feature creation from existing features
    e. Univariate and Multivariate Analysis
4. Feature Engineering:
    a. Scaling(Normalization, standardization)
    b. Handling Outliers
    c. Encoding(One Hot, Label Encoder)
    d. Transformation (Log, square root, cube root, reciprocal, etc)

5. Feature Selection(Required features to train the model)
6. Model Building(LR, DT, KNN, RF, AdaBoost, XGBoost):
    a. Use Hyperparameter tuning while training model
7. Model Evaluation:
    a. Accuracy score
    b. Confusion Matrix
    c. Precision, recall, and f1-score for approved and Declined
    d. ROC Curve
    e. Result Analysis(compare result for all algorithms)
8. Deployment(AWS, GCP, Azure)