# Home Credit Default Risk Prediction

## Business Problem Statement

Home Credit aims to expand financial inclusion by providing loans to unbanked individuals with limited or no credit history. The challenge is identifying which applicants are likely to repay their loans and which may default, ensuring that capable clients are not rejected, and loans are structured for success.

The project aims to develop a model that predicts the likelihood of loan defaults to improve lending decisions.

## Benefit of solution

Benefits of accurately predicting default risk are as follows:

- Avoid rejecting clients who will repay their loans
- Reduce financial risks and defaults by rejecting clients that will not repay loans
- Improve loan structure to ensure client success

## Analytics Approach

Our approach will be to model different test sets to predict the probability of a target variable, TARGET, in which 1 will mean default and 0 will mean will no default. We will use a machine learning model to train off historical data of the client's attributes and financial information. From here we will be able to narrow down attributes that are most impactful in predicting the client's likelihood to repay a loan.

## Success metrics

Our main criteria of success will be measured by the accuracy of predictions of the model being able to differentiate between clients that will default verse clients that will not default. To do this we will evaluate the are under the ROC curve between the predicted probability of the model and the observed target.

## Scope/Deliverables

Primary deliverables for this project will be:

- A detailed report on model performance and key insights in model predictions
- Python or R code for making predictions on new clients with loan applications
- GitHub repository of all code

## Project Details

This project will be executed by members of the data science team on or before April 6th, 2025. The following is a list of project milestones:

- Business problem statement delivered
- Exploratory Data Analysis
- Modeling and evaluation
- Final report and presentation