LOAN DEBT PREDICTOR

FAB 4

Business owners tend to take loans in order to clear their previous debts or for expansion of their business.

These loans often lead them to get stuck in a vicious cycle of loan debts.

Our model predicts how safe or risky it is for you to take this much amount of loan.

Business Idea

01 Understanding the Business Plan

To inform the business owners about the safety or risk involved in taking a loan for their business.

02 Benefits for the Business Owner

- Revenue Depletion Prevention
- Healthy Loan Cycle
- Knowledge of Loan amount safely taken
- Rule out future bankruptcy

03 Model Features

- Our model takes in several monetary and non-monetary factors.
- By using our loan predictor formula, the model outputs the risk factor involved.

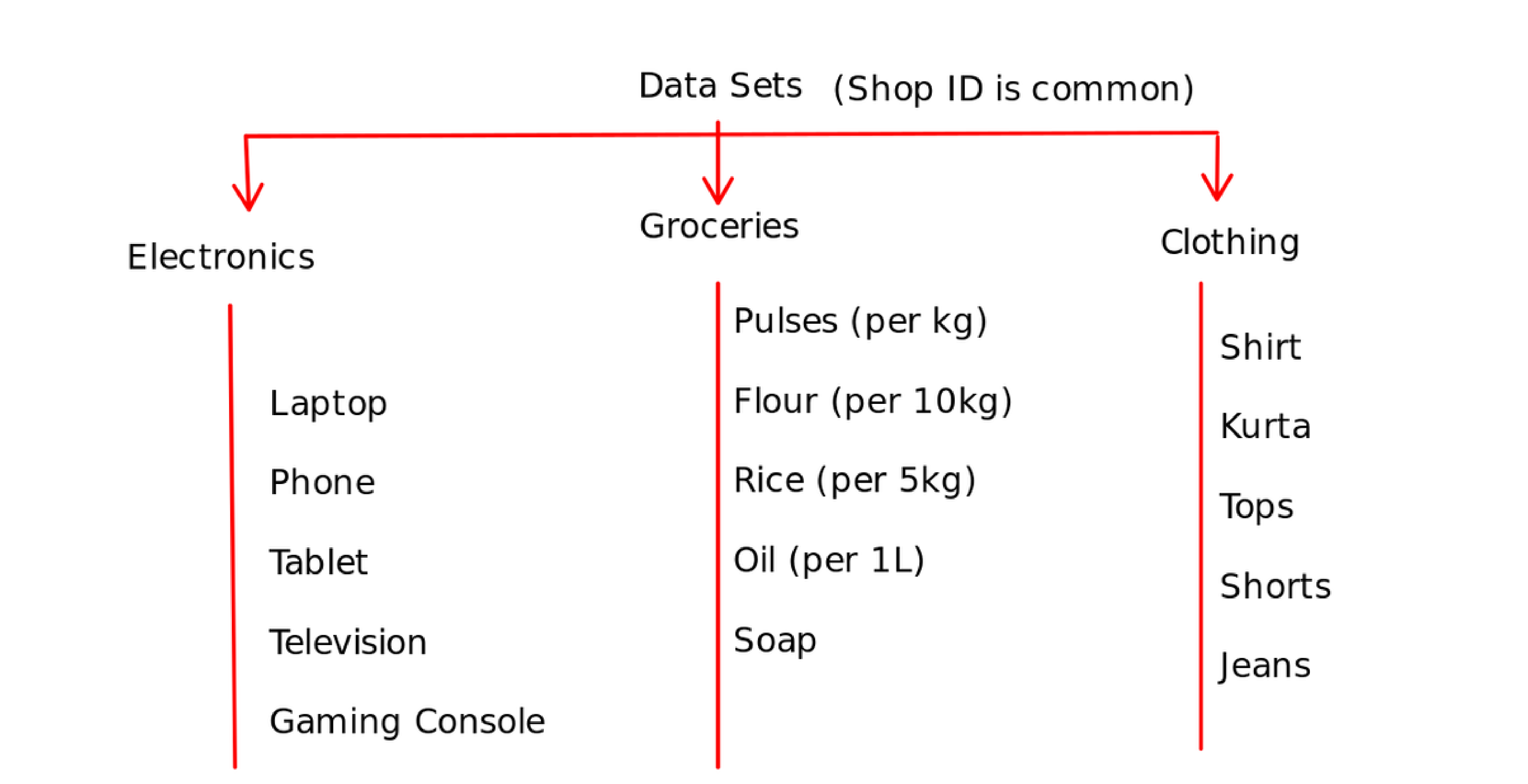
04 Factors affecting Loan Risk Factor

- Current ongoing debts of the business.
- CIBIL Score
- Profit % of previous fiscal year
- Loan Amount
- Non-monetary factors

DATASET GENERATION PLAN

- We have taken 3 industries:-
  Electronics, Groceries and Clothing.
- We have generated 1000 entries for each industry.
- For each industry, we have taken 5 different commodities.
- For total annual revenue, the formula used is:-

SUM(PRICE OF COMMODITY* UNITS SOLD IN A DAY <FOR ALL COMMODITIES> * 365 DAYS IN A YEAR.



Each Dataset would be of 1000 entries covering the prices of all the commodities.

FACTORS OF OUR
LOAN DEBT PREDICTOR MODEL

- Total Revenue of the business
- Profit % of last fiscal year
- Ongoing previous debts still to repay
- CIBIL Score
- Loan Amount
- Loan Interest Rate
- Simple/Compound Interest
- Time to repay the loan
- Competition in the market
- Sustainability
- Management effectiveness

LOAN COST FUNCTION FORMULA

- Using all the factors used in our model, we created a formula in order to output the risk in taking the loan, taking inflation into count.

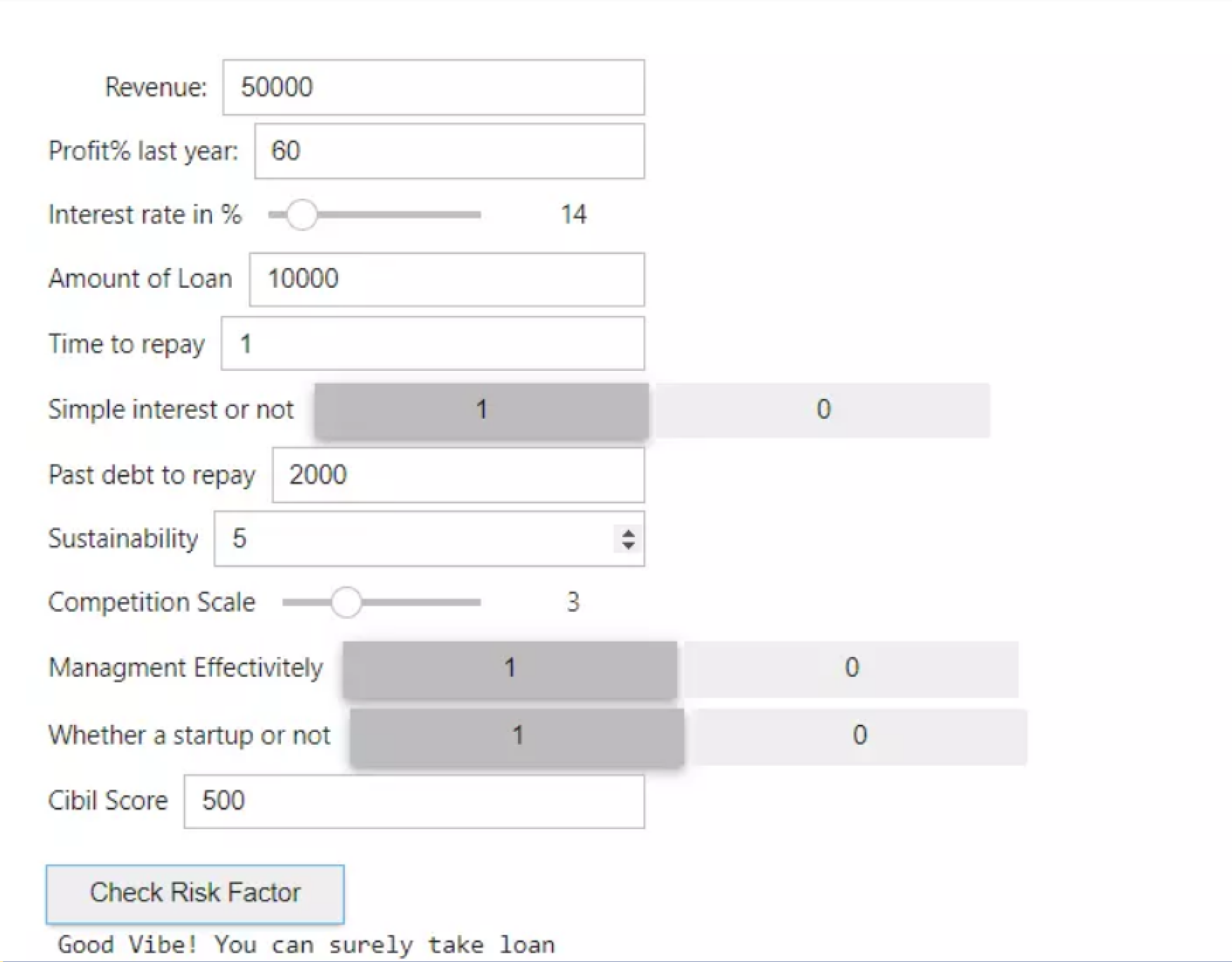
- The formula calculates external costs, loan interest cost, net revenue of the business, the residue left after time to repay, simple/compound interest, etc.

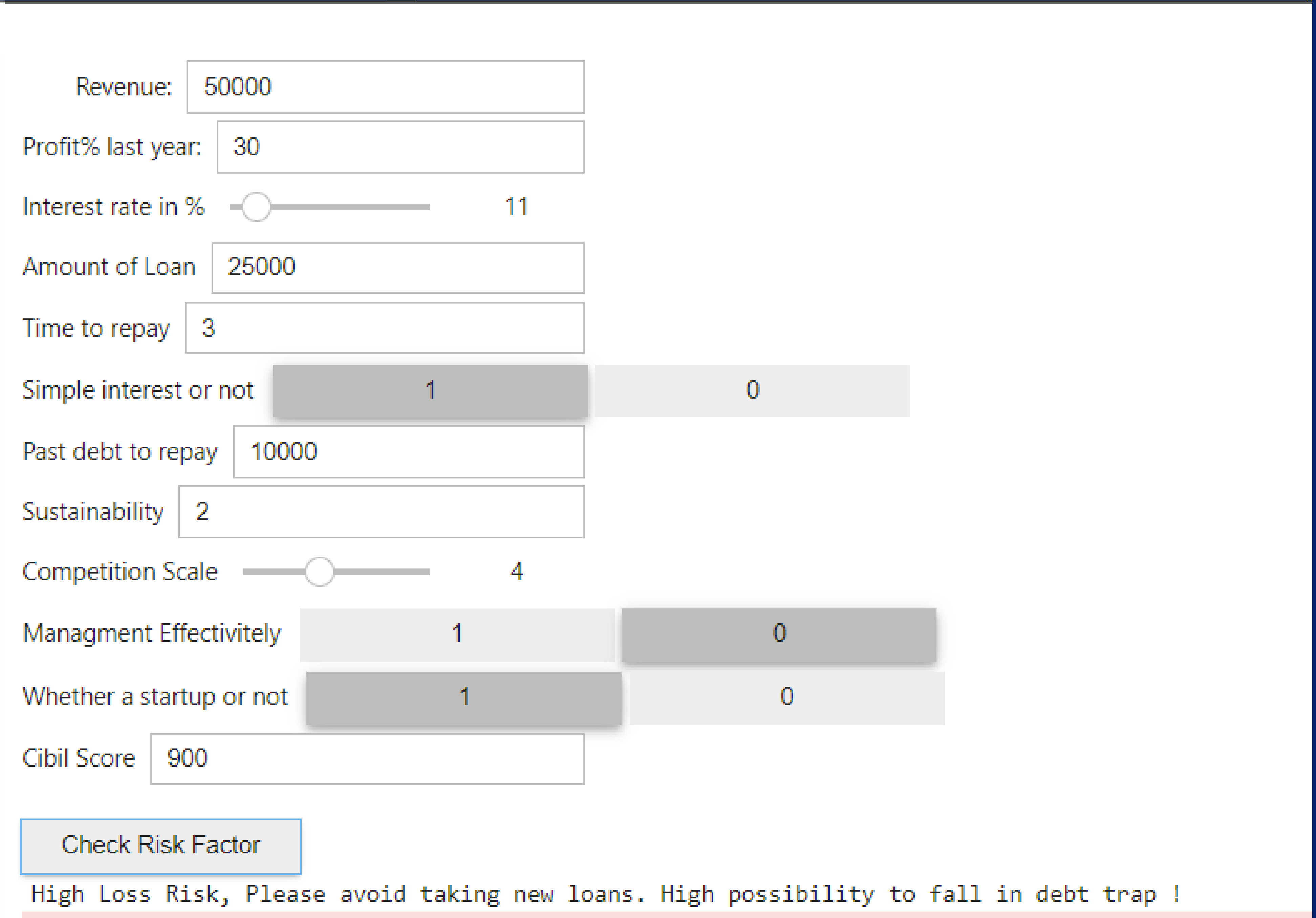
- By using these factors we conclude that:-

  a. High Profit (2)
  b. Low Profit (1)
  c. Low Risk (-1)
  d. High Risk (-2)

```
def loan_cost_prediction(revenue, profit_percentage_last_year, simple_interest,
interest_rate, amount_of_loan, time_to_repay, past_debt_to_repay, sustainability,
competition_scale, management_effectivity, startup, cibil_score, inflation=4):

    # balance the decrease in amount of money
    interest_rate -= inflation

    # substract from the net revenue
    external_cost = (pow(10, len(str(amount_of_loan))-2))*( 5*(1-sustainability) +
3*(1-management_effectivity) + 2*(startup) + 10*(900 - cibil_score)/100 +
3*(competition_scale))

    loan_interest_cost = amount_of_loan * (1+interest_rate*time_to_repay) if
simple_interest else amount_of_loan * (pow((1 + interest_rate/100), time_to_repay))

    # the net profit conceded over the period of time
    net_revenue = revenue*profit_percentage_last_year*time_to_repay/100

    # print(external_cost, loan_interest_cost, net_revenue)

    residue_left_after_time = net_revenue - external_cost - loan_interest_cost -
past_debt_to_repay

    # print(residue_left_after_time)

    if residue_left_after_time <= 0:
        if abs(residue_left_after_time) >
0.5*net_revenue*profit_percentage_last_year/100:
            return -2  # High Loss
        else:
            return -1  # small loss
    else:
        if (residue_left_after_time) < 0.5*net_revenue*profit_percentage_last_year/100:
            return 1  # small profit
        else:
            return 2  # high profit
```

WIDGET FOR **USERS**





No Risk is involved for this user, so loan should be taken as high profits are attainable

High Risk is involved for this user, so loan shouldn't be taken

THANK YOU

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