

Design Document

1. Title

Crediwatch Loan Approver

By,

1. Sujeet Sharma (+91 7090074702)
2. Prashant Kumar (+91 8984511995)
3. Syed Talibuddin Saifi (+91 9972167305)

2. Summary

Crediwatch Loan Approver product serves as a tool to the business to identify the risk-free customer for lending loans. It uses the dataset (data_set.csv) provided by the organizers. After the careful analysis of the data we could figure out that there are no null or missing values in the dataset. The formula for the score calculation was provided by the organizers which depends on features x1-x5 in dataset. However, after some more analysis we figured out that if the “company status” value is set to “Not available for efilng” the loan should be outrightly rejected as this signifies the customer is “In-Active”. Also, if the loan amount requested is more than the difference between “Authorized capital” and “Paidup capital”, the lender is at risk to getting into a non performing asset. Hence, in such cases the loan can be rejected. However, if the loan duration is more and average lending capital is lower than the difference, it still counts as an opportunity for the lender. We normalized this difference in the capital which reflects the health of the customer business and we have added this as part of the score calculation. So, the final formula for score calculation is,

$$\text{score} = 0.717 \times x_1 + 0.847 \times x_2 + 3.107 \times x_3 + 0.420 \times x_4 + 0.998 \times x_5 +$$
$$(\text{assetCapital} - \text{min}) / (\text{max} - \text{min})$$

where,

$$\text{assetCapital} = \text{authorizedCapital} - \text{paidupCapital}$$
$$\text{max} = \text{assetCapital.max}()$$
$$\text{min} = \text{assetCapital.min}()$$

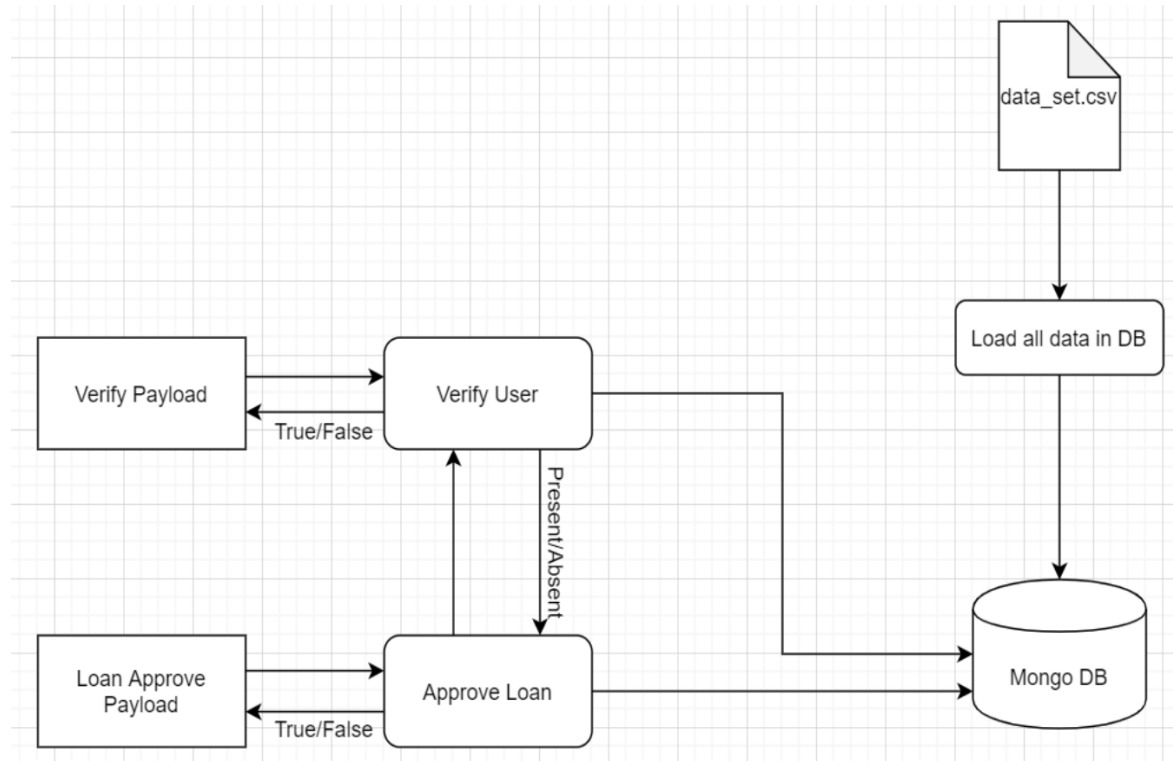

CrediwatchLoan.ipynb

3. Tools used

The tools and libraries we have used to build this product are as follows,

- Java
- Spring Boot
- Python
- Angular 8
- Mongo DB
- Web Browser
- Swagger
- IDE: IntelliJ and Visual Basic Code

4. Technical Architecture




Swagger endpoints:

basic-error-controller Basic Error Controller		>
crediwatch All operation related to crediwatch a loan application.		▼
POST	/approve	This api verifies if the customer qualifies to get an approval for the loan
POST	/create-customer	This api post new customer data
GET	/fetchAllData	This api returns all the records from mongodb as document.
GET	/uploadAllData	This api upload the loan dataset csv to mongodb as document.
POST	/verify	This api verifies if the customer exist is valid

Application UI:

1. Customer verification form



CIN

U74999UP2020PTC125898

Email address

treecraftindia@gmail.com

Company Name

TREE CRAFT INDIA PRIVATE LIMITED

Class


Public

Company Type

Non-government

Submit

2. Invalid Customer

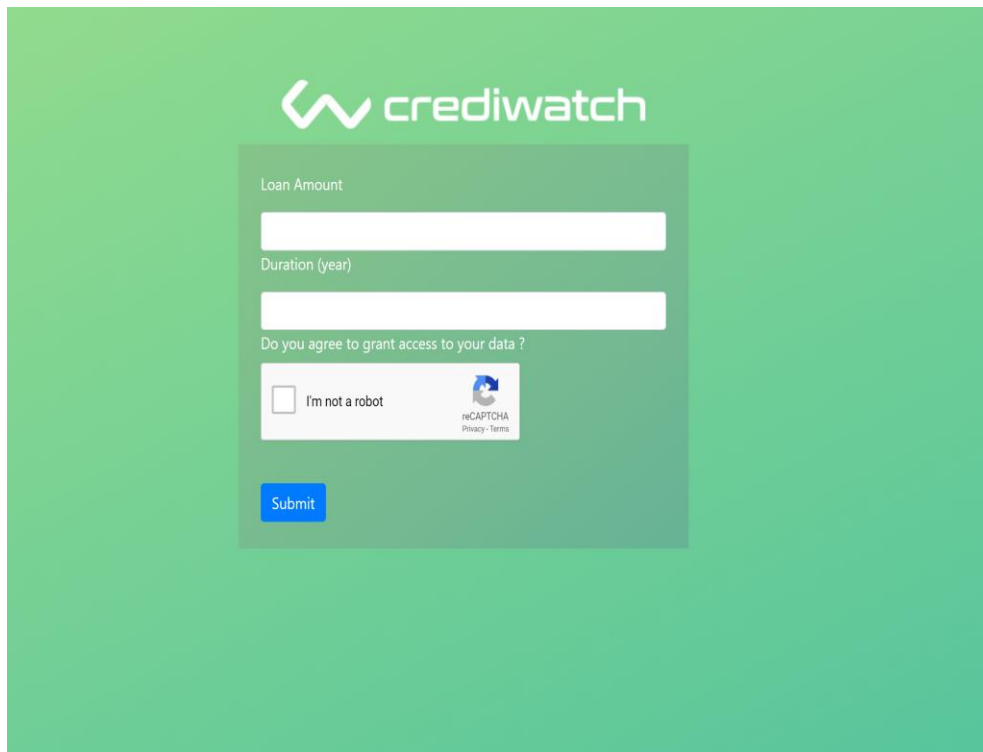


The image shows a web form for Credimatch. The form is titled "credimatch" and contains the following fields:

- CIN: U74999UP2020PTC125898
- Email address: treecraftindia@gmail.com
- Company Name: TREE CRAFT INDIA PRIVATE LIMITED
- Class: Public (dropdown menu)
- Company Type: Non-government (dropdown menu)

A blue "Submit" button is located below the form fields. Below the button, a red error message states: "Customer information not Correct!"

3. Loan Validation Form

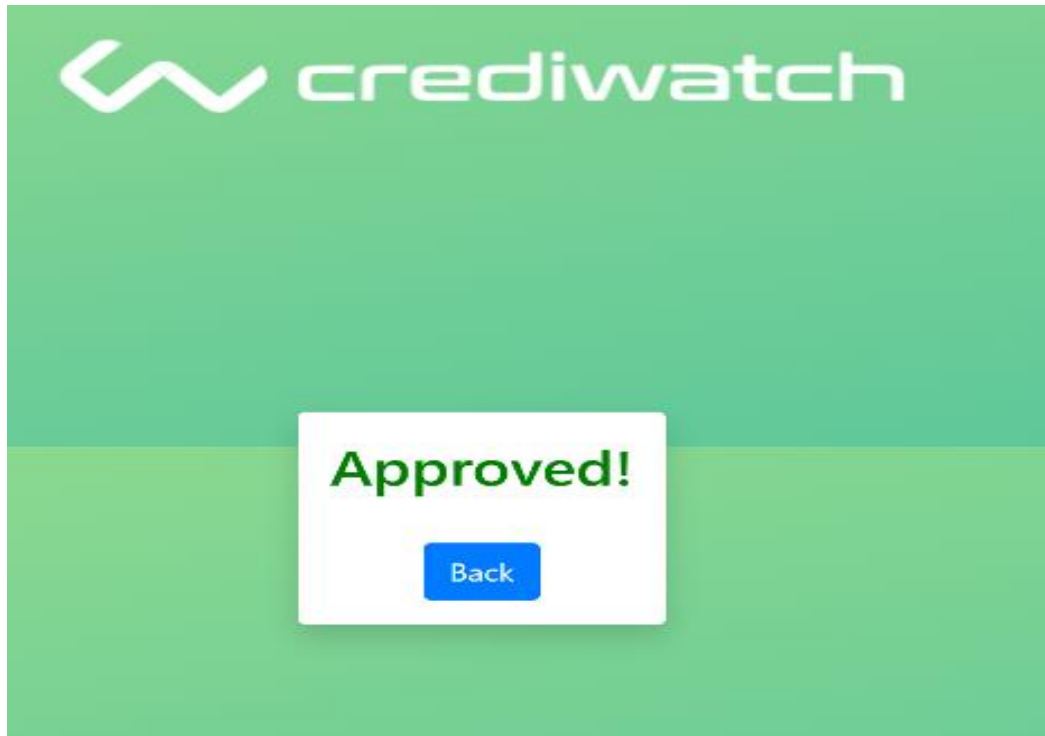


The image shows a web form for Credimatch. The form is titled "credimatch" and contains the following fields:

- Loan Amount: (text input field)
- Duration (year): (text input field)
- Do you agree to grant access to your data ? (checkbox)
- I'm not a robot (checkbox)
- hCAPTCHA (checkbox)
- Privacy - Terms (link)

A blue "Submit" button is located below the form fields.

4. Loan Status



5. Feasibility

- This product does an initial load of the customer data from data_set.csv and dumps it into mongo db.
- This product assumes that any new customer registered via various platforms are already present in mongo store.
- The endpoints are secured using baseAuth (please use admin/admin).