Design Document

1. Title

Crediwatch Loan Approver

By,

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2. Summary

Crediwatch Loan Approver product servers 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 efiling" 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,

```
score = 0.717*x1 + 0.847*x2 + 3.107*x3 + 0.420*x4 + 0.998*x5 +

(assetCapital - min)/ (max - min)

 where,

      assetCapital = authorizedCapital - paidupCapital

      max = assetCapital.max()

      min = assetCapital.min()
```

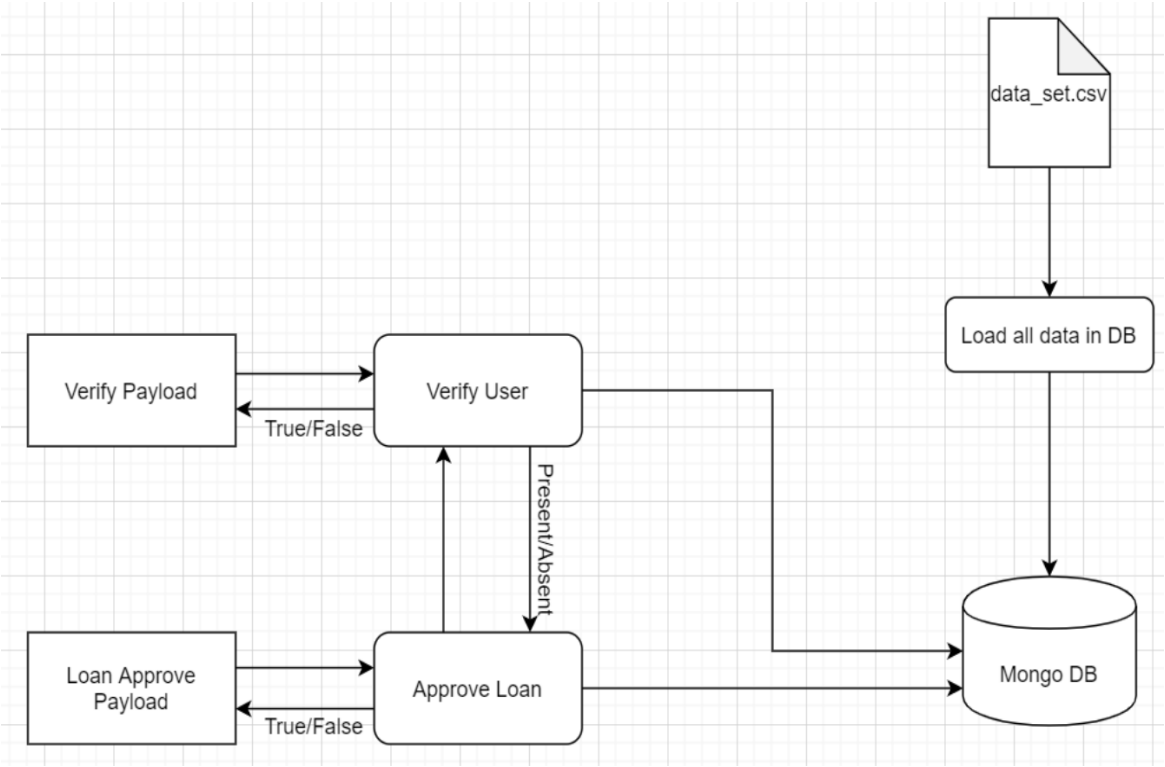
CrediwatchLoan.ipynb

3. Tools used

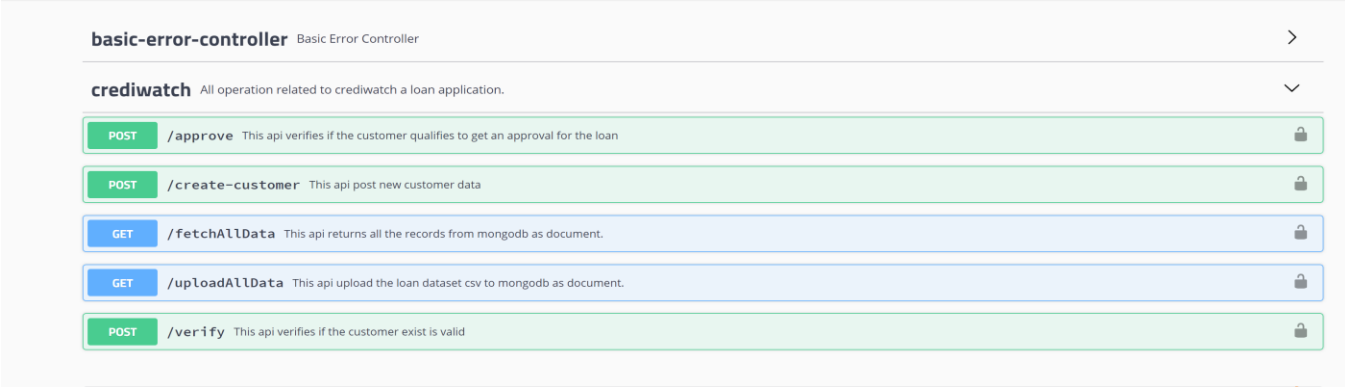
The tools and libraries we have used to build this product are as follows,

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

4. Technical Architecture



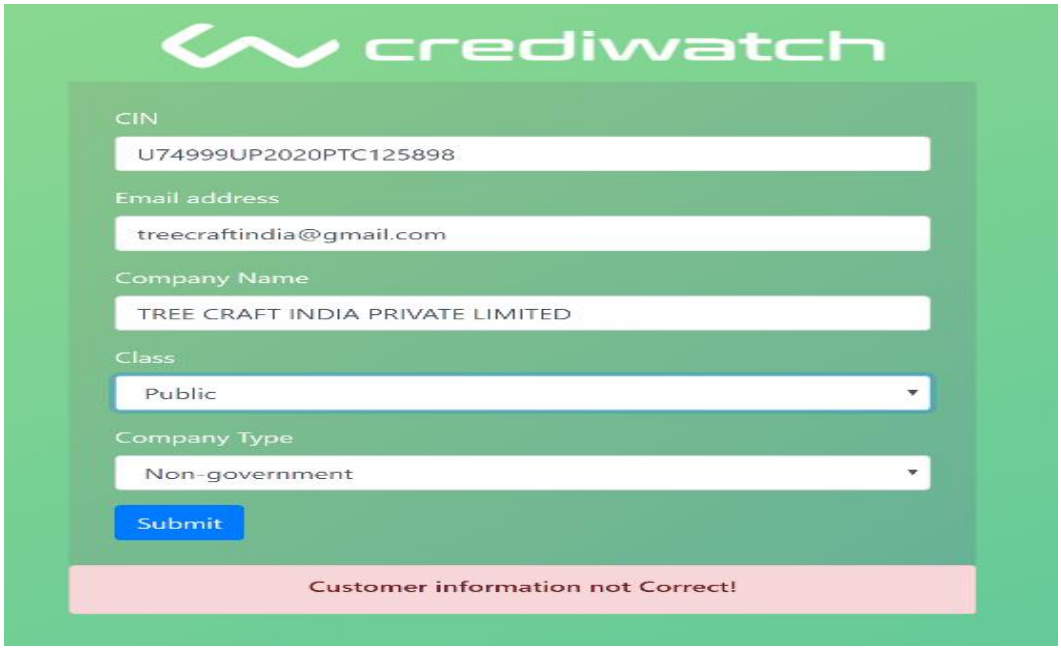
Swagger endpoints:



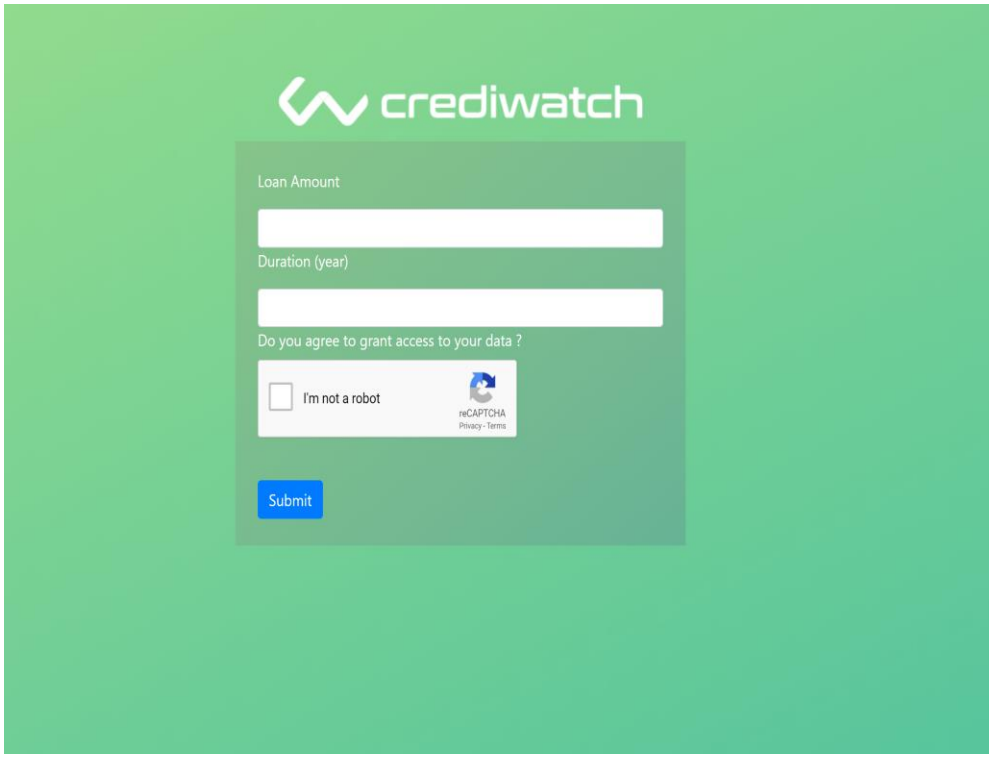
Application UI:

1. Customer verification form

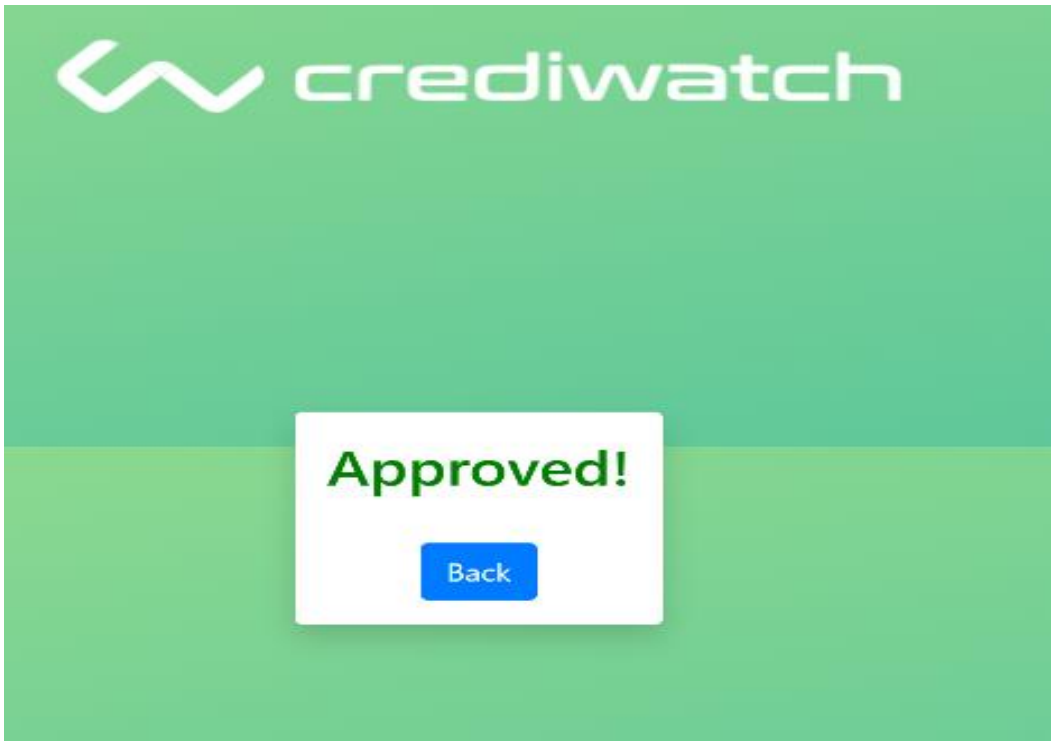
2. **Invalid Customer**



3. **Loan Validation Form**



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).