

LOAN SANCTION PREDICTOR

IS699 - Software Engineering

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Ruchi Isaac
Ansuya Patel



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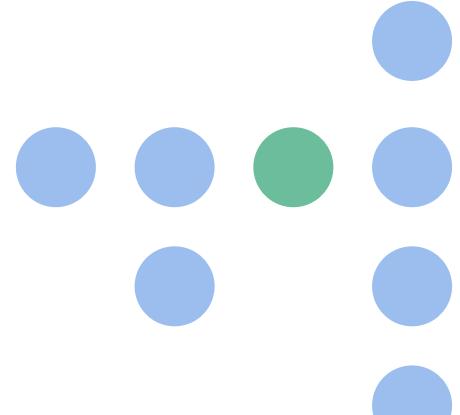
FUTURE
SCOPE

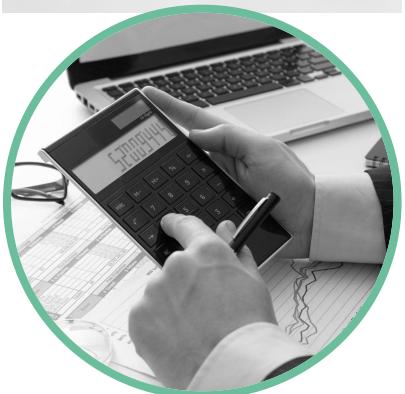
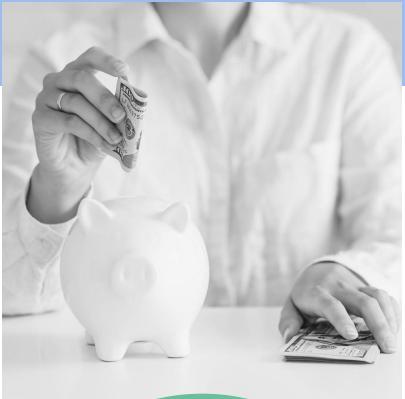
10

OUR
TEAM

OUR PROJECT

01





30%

UNDERGRADUATE

60%

GRADUATE/PHD

30% undergraduate and approximately 60% graduate students in USA that opt for student loans.



PROJECT PURPOSE

The purpose of the project is to create a model and a corresponding website that helps young professionals and anyone else interested to **determine their loan application outcome** based on certain metrics that they put into the system. People may need to wait for a month or upto 6 months before reapplying for a loan and our system could possibly help prevent that from happening.



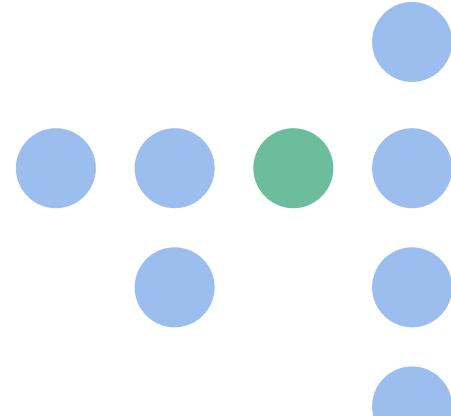


OUR SOFTWARE

We plan on creating a loan sanction predictor, which based on a machine learning algorithms that can take information of applicants from a database and determine whether their application for a loan would be accepted or rejected. We also designed a website for the applicants to access our services and view our different plan models.

02

GOALS

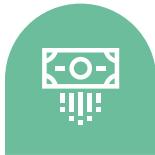


PROJECT GOALS



GOAL 1

Create the Loan Sanction Predictor



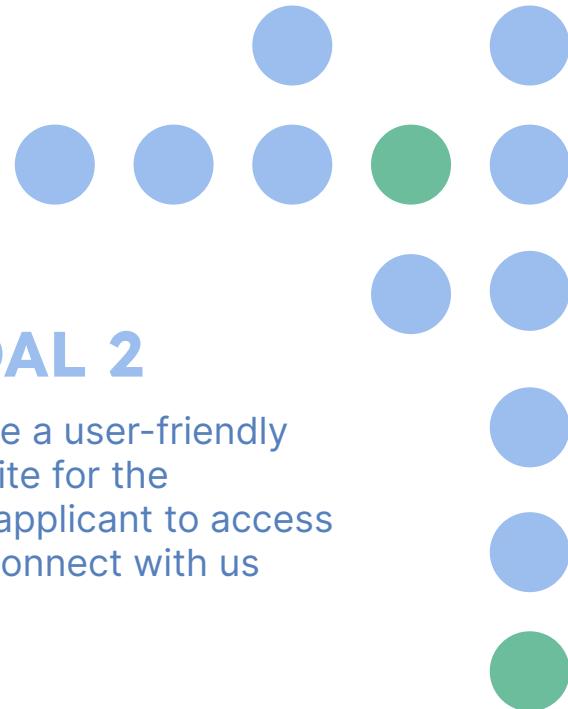
GOAL 2

Create a user-friendly website for the user/applicant to access and connect with us



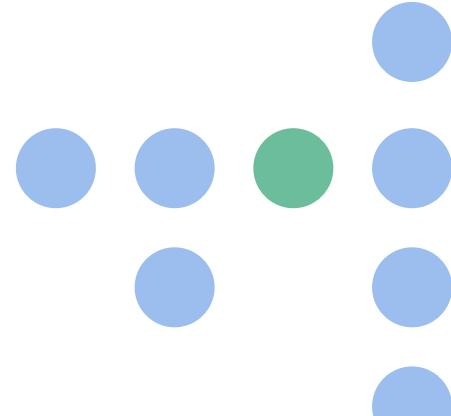
GOAL 3

Analyze the data and find out the importance of various factors.



03

PROJECT PLAN



PROJECT TIMELINE



KEY MILESTONE	START	FINISH
Form Project Team / Preliminary Review / Scope	08/23/22	08/30/22
Finalize Project Plan / Charter / Kick Off	09/06/22	09/13/22
Define Phase	09/20/22	09/27/22
Measurement Phase	10/4/22	10/11/22
Analysis Phase	10/25/22	11/01/22
Improvement Phase	11/08/22	11/15/22
Control Phase	11/29/22	12/04/22
Project Summary Report and Close Out	12/04/22	12/07/22

AZURE DEVOPS

IS699 Loan Sanction ... +

Overview

Boards

Work items

Boards

Backlogs

Sprints

Queries

Delivery Plans

Pipelines

Artifacts

Work items

Recently updated

+ New Work Item

Open in Queries

Column Options

Import Work Items

Recycle Bin



Filter by keyword

Types

Assigned to

States

Area

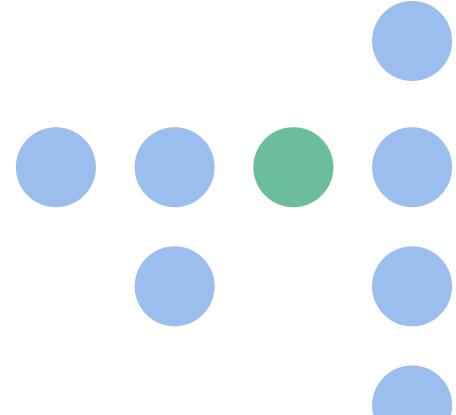
Tags



ID	Title	Assigned To	State	Area Path
1	Project Requirements	Ruchi Isaac	Resolved	IS699 Loan Sanction Predictor
2	Input Requirements	Katja Crusius	Resolved	IS699 Loan Sanction Predictor
3	System Requirements	Ruchi Isaac	Resolved	IS699 Loan Sanction Predictor
4	Output Requirements	Ansuya Haresh Patel	Resolved	IS699 Loan Sanction Predictor
6	Account Requirements	Katja Crusius	Resolved	IS699 Loan Sanction Predictor
7	Data Input Requirements	Katja Crusius	Resolved	IS699 Loan Sanction Predictor
8	Data Import Requirement	Ruchi Isaac	Resolved	IS699 Loan Sanction Predictor
9	Data Processing Requirement	Ruchi Isaac	Resolved	IS699 Loan Sanction Predictor
10	Output Attributes Requirements	Ansuya Haresh Patel	Resolved	IS699 Loan Sanction Predictor
11	Output Format Requirements	Ansuya Haresh Patel	Resolved	IS699 Loan Sanction Predictor

04

MODEL



MODEL DESCRIPTION

Data Cleaning

Data is cleaned and split into train and test data. The target variable Loan Status is predicted

Perform Analysis

We perform data exploration on the dataset

Model exploration

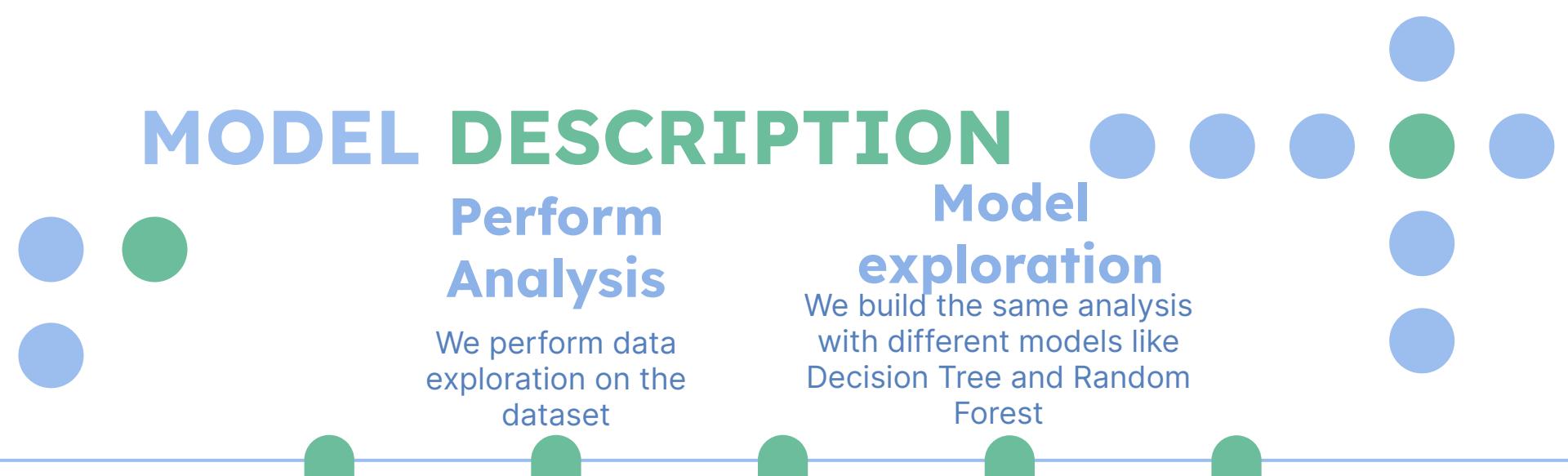
We build the same analysis with different models like Decision Tree and Random Forest

Model Building

We build the model of Logistic Regression to perform the prediction analysis on the data

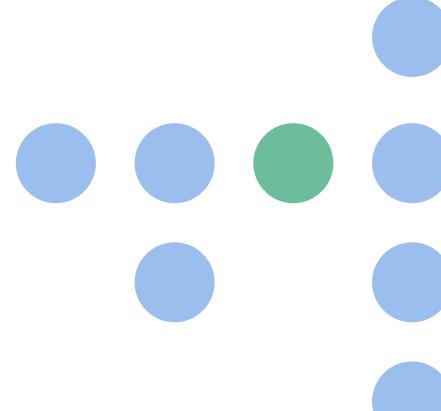
Importance of factors

We also find out the importance of all the factors we take into count as variables



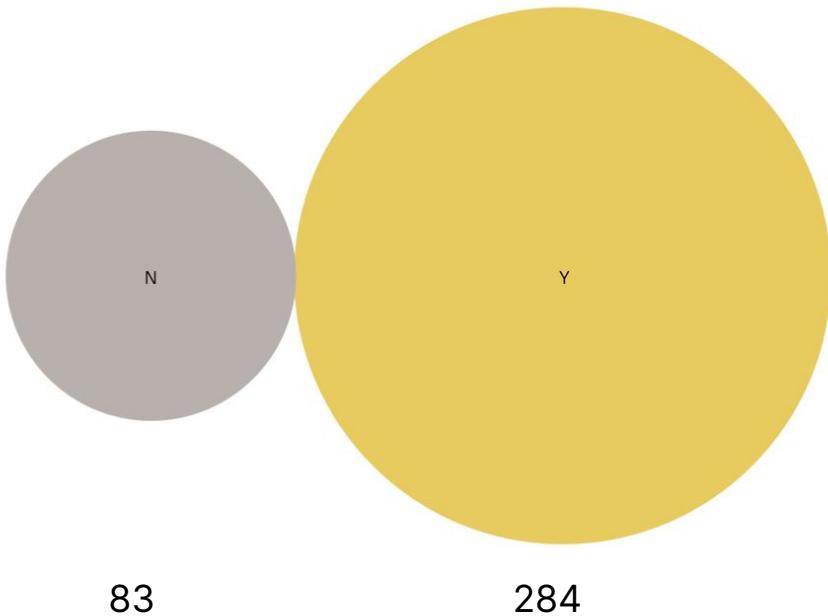
05

DATA EXPLORATION INSIGHT AND RESULTS



R E S U L T S

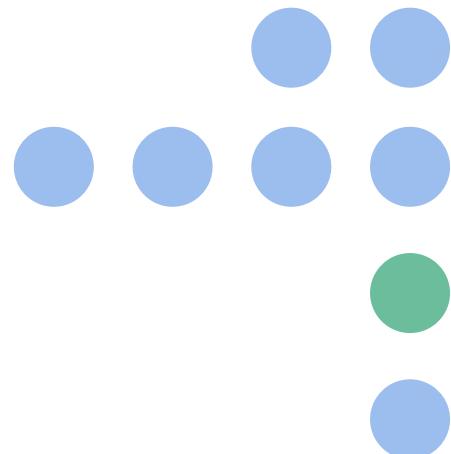
Logistic Regression



Loan Status (Logistic)

N

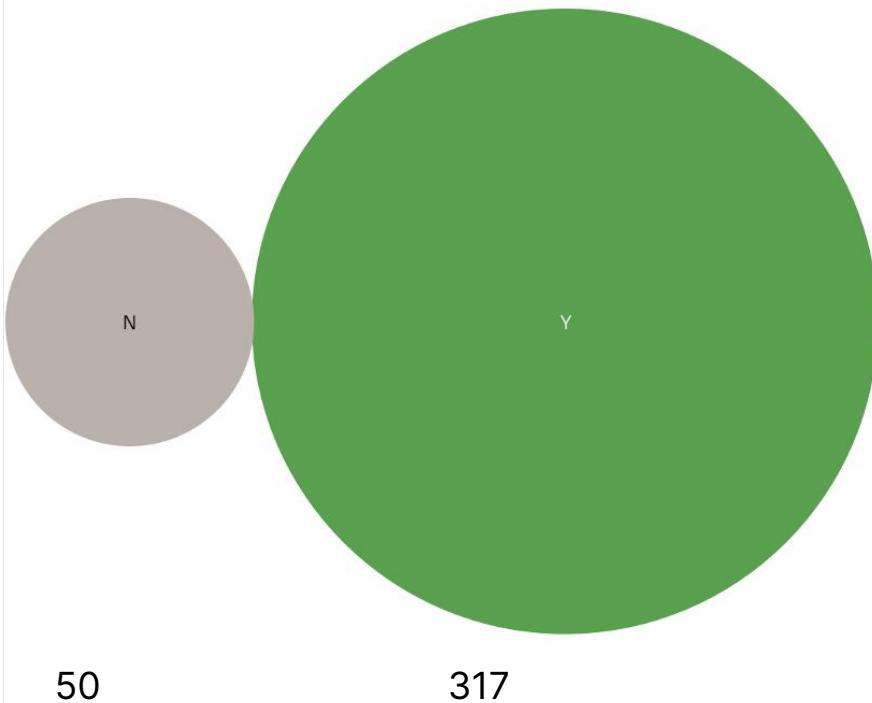
Y



TABLEAU

R E S U L T S

Random Forest



Loan Status (Random Forest)
N
Y

TABLEAU

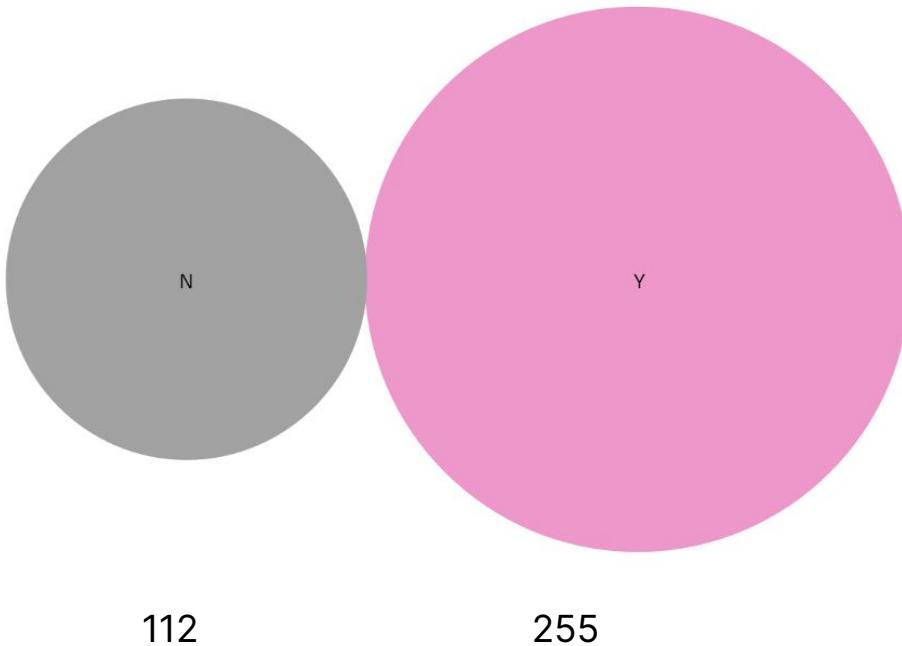
Decision Tree

R
E
S
U
L
T
S

Loan Status (Decision Tree)

N

Y



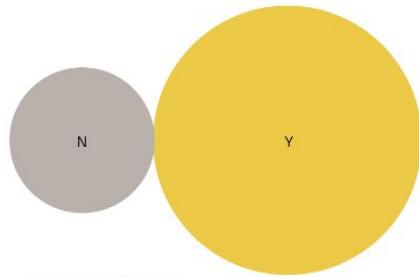
TABLEAU

R E S U L T S

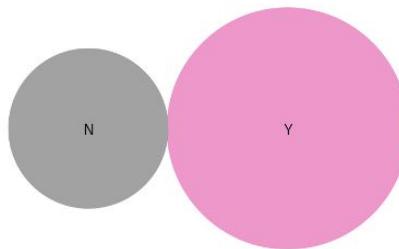
Accuracy Comparison of different models

The comparison of these different algorithms brings about a conclusion that Random Forest has the best accuracy out of all different models.

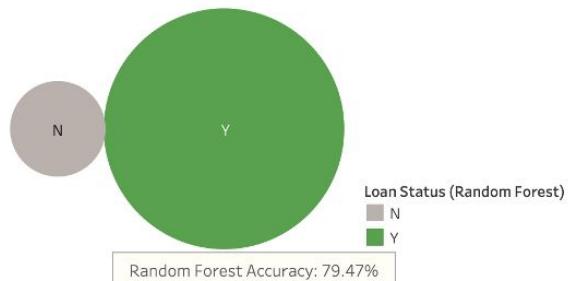
Logistic Regression



Decision Tree



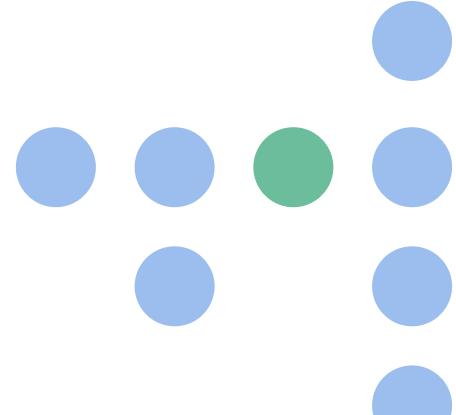
Random Forest



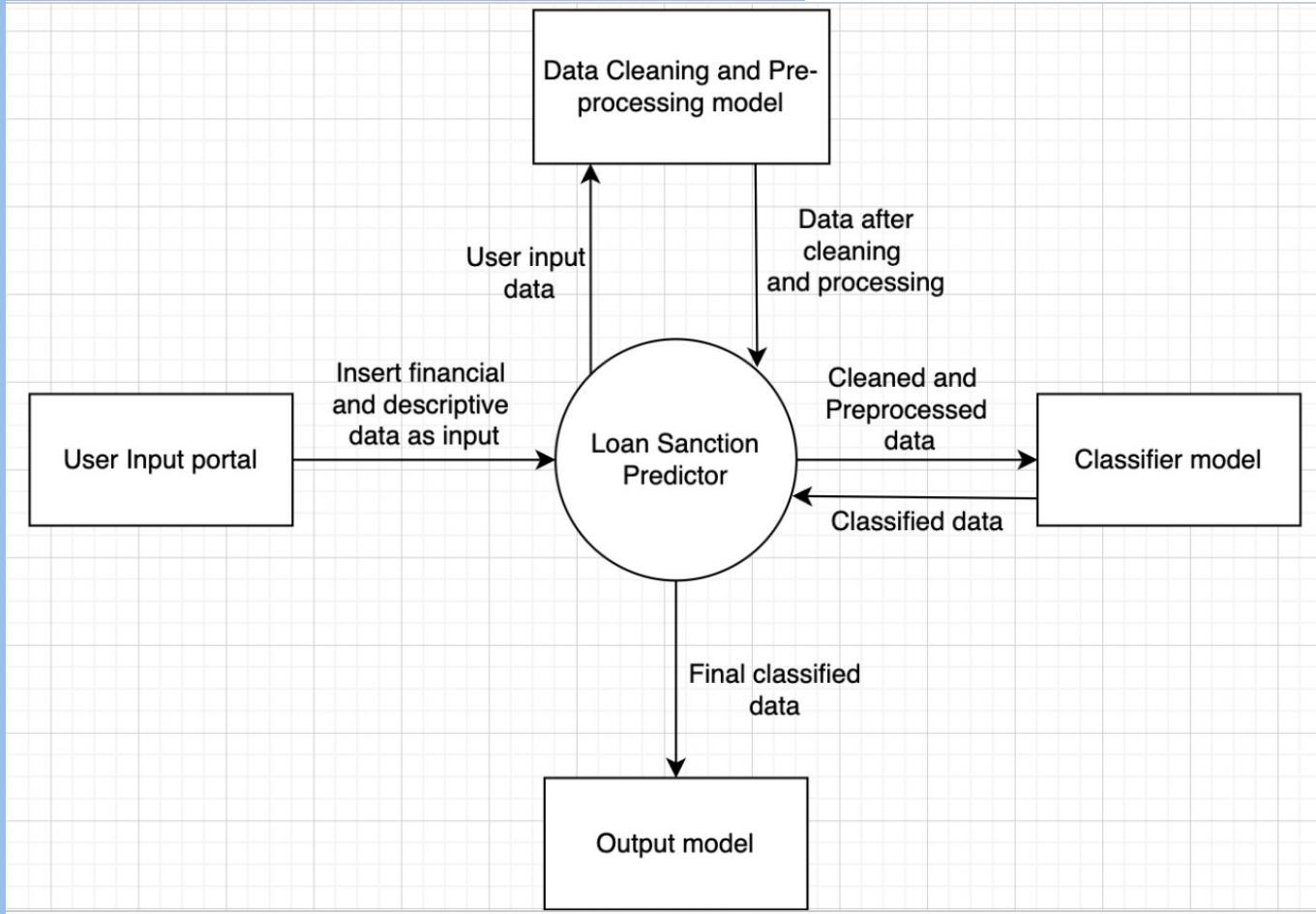
TABLEAU

06

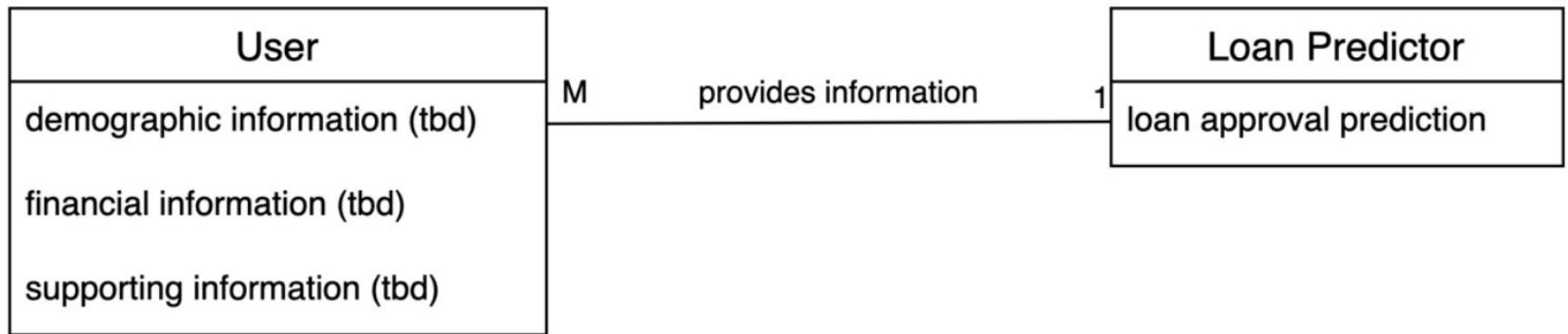
FIGURES



SYSTEM BLOCK DIAGRAM



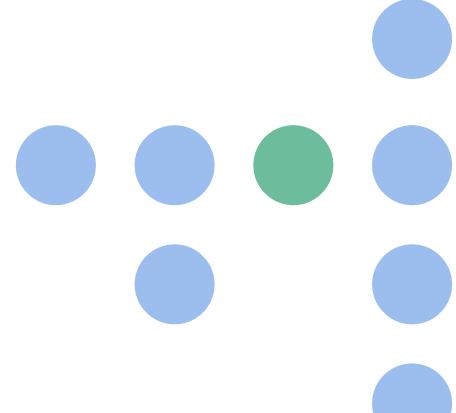
CLASS DIAGRAM



The data given by the user is basically from a database.

07

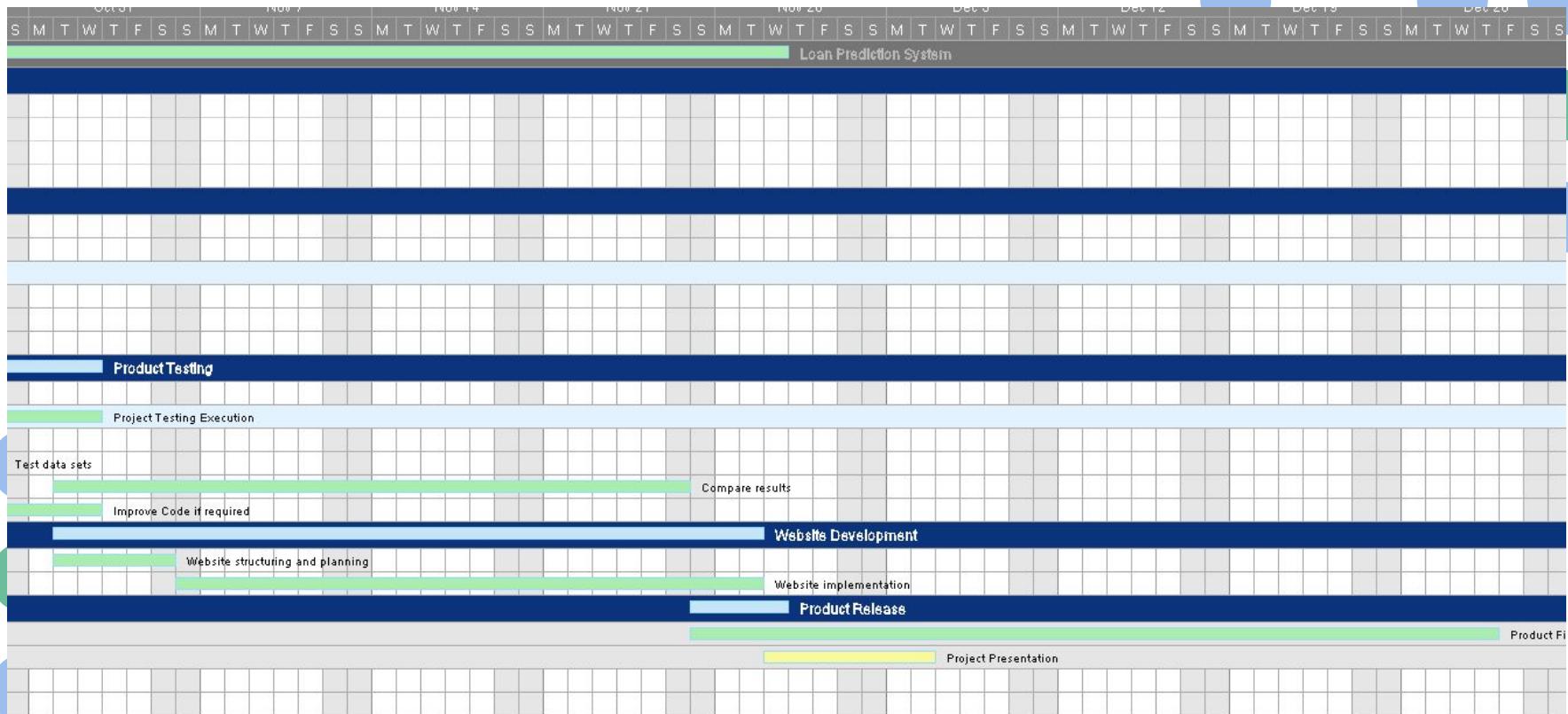
GANTT CHART



Task Name	Status	Health	Start Date	End Date	Assigned To	Description	Duration
Loan Prediction System	In Progress	Green	08/30/22	11/30/22			92d
Planning Phase			08/30/22	09/27/22			28d
Market Requirement Identification	Complete	Green	08/30/22	09/06/22	Ruchi I	Expect minor changes as we go.	7d
Project Deliverables	Complete	Green	09/06/22	09/13/22	Katja Crusius	Could be modified further	7d
Data Collection	Complete	Green	09/13/22	09/20/22	Ansuya Patel	compiling a database	7d
Project Plan	Complete	Green	09/20/22	09/27/22	Ruchi I	defining a structured plan	7d
Product Development		10/01/22		10/15/22			14d
Cleaning Gathered Data	Complete	Green	10/01/22	10/03/22	Katja Crusius	cleaning data to fit model	3d
Coding the data	Complete	Green	10/04/22	10/05/22	Ansuya Patel	encoding data as models only understand numbers	2d
Building the System	Complete	Green	10/06/22	10/15/22	Ruchi I		10d
Structuring the code	Complete	Green	10/06/22	10/08/22	Katja Crusius	defining how the code would start and end	3d
Writing the code	Complete	Green	10/09/22	10/15/22	Ansuya Patel	implementing the code	7d
Executing the code	Complete	Green	10/07/22	10/15/22	Ruchi I	running the code to view results at every step	8d
Product Testing		10/15/22		11/02/22			18d
Building Testing Strategy	Complete	Green	10/15/22	10/17/22	Katja Crusius	since its RAD we test after ever step	3d
Project Testing Execution	Complete	Green	10/18/22	11/02/22	Ansuya Patel		15d
Define new data sets	Complete	Green	10/18/22	10/23/22	Ruchi I	split train and test dataset	6d
Test data sets	Complete	Green	10/20/22	10/29/22	Katja Crusius		10d
Compare results	Complete	Green	11/26/22	11/01/22	Ansuya Patel	check for scope of improvement in results	7d
Improve Code if required	Complete	Green	10/21/22	11/02/22	Ruchi I		12d
Website Development		11/01/22		11/29/22			28d
Website structuring and planning	Complete	Green	11/01/22	11/05/22	Katja Crusius	defining most important pages in the website	4d
Website implementation	Complete	Green	11/06/22	11/29/22	Katja Crusius	coding and implementing website	23d
Product Release		11/27/22		11/30/22			4d
Product Final Testing	Complete	Green	11/27/22	12/29/22	All	check if all models are running perfectly	3d
Project Presentation	In Progress	Yellow	11/30/22	12/06/22	All	present the model	1d

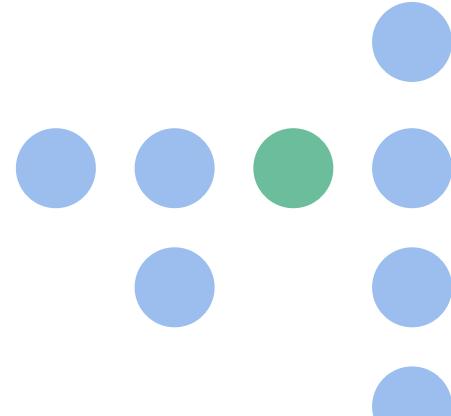
The Gantt chart illustrates the timeline and dependencies for the Loan Prediction System project. The project spans from August 25 to October 24, divided into five main phases: Planning, Product Development, Product Testing, Website Development, and Product Release.

- Planning Phase:** Lasts from Aug 25 to Sep 12. Tasks include Market Requirement Identification, Project Deliverables, Data Collection, and Project Plan.
- Product Development:** Lasts from Sep 12 to Oct 10. Sub-tasks are grouped under Cleaning Gathered Data, Coding the data, Building the System, Structuring the code, Writing the code, and Executing the code.
- Product Testing:** Lasts from Oct 10 to Oct 24. Sub-tasks are Building Testing Strategy, Project Testing Execution, Define new data sets, Test data sets, Compare results, and Improve Code if required.
- Website Development:** A single task spanning from Aug 25 to Oct 24, involving Website structuring and planning and Website implementation.
- Product Release:** A single task spanning from Oct 10 to Oct 24, involving Product Final Testing and Project Presentation.



08

WEBSITE

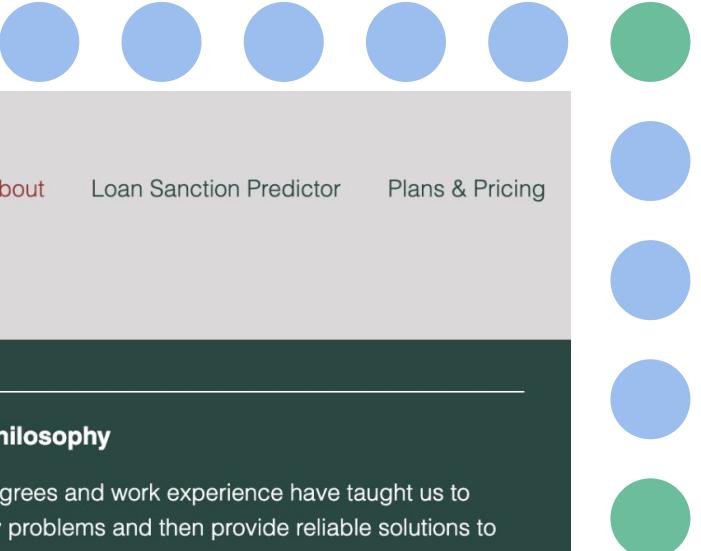




Crusius Isaac Patel Financial Consulting

IMPROVE YOUR FINANCIAL SITUATION TODAY

 Let's Chat!



Our Expertise

We are three graduate students from California State University, Long Beach completing our Master's degree in Information Systems at the moment.

Our Commitment to Results

We built the loan sanction predictor and tested it through various methods so we know that the results are as accurate as possible.

Our Philosophy

Our degrees and work experience have taught us to identify problems and then provide reliable solutions to them. We are all hard-working and always committed to get the best results.

Our Experience

We have experience with programming, website design, and software engineering which we utilized to build this predictor.

Consulting Session
\$ 40
Single Consulting Session
Book Now

LSP Single Use
\$ 60
Loan Sanction Predictor
Valid for one month
Book Now

LSP Silver
\$ 160
Loan Sanction Predictor
Book Now

One Session Included

One Use (after free trial)

Three Uses (after free trial)

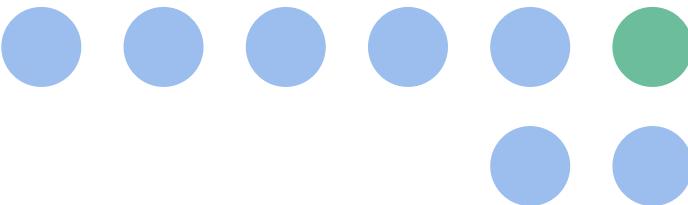
LSP Gold
\$ 260
Loan Sanction Predictor
Book Now

Platinum Package
\$ 400
Loan Sanction Predictor + Consulting Sessions
Book Now

Five Uses (after free trial)

Five LSP Uses

Five Consulting Sessions



Let's Connect

Do you have any questions or doubts about the loan sanction predictor? Do you have any feedback for us? Do you want personal consulting?

Reach out now!

We look forward to hearing from you!

Address

1250 Bellflower Boulevard
Long Beach, CA 90840

Email

katja.crusius@student.csulb.edu

Phone

562-714-2642

Contact Us

First Name

Last Name

Email *

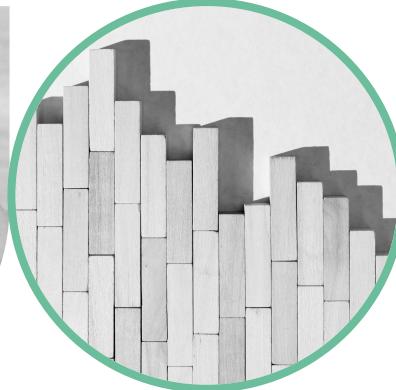
Message

Submit

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FUTURE SCOPE

The future scope could be a product where the data from the user is dynamically taken as an input and processed to give out a result. This result could be compiled in a report and sent to the user. We would still advice this process to take place on the backend without the applicant being able to access the model for security purposes.



OUR TEAM



KATJA CRUSIUS



RUCHI ISAAC



ANSUYA PATEL



THANK YOU!



Do you have any questions?

