




HOUSING LOAN APPLICATION

PROJECT REPORT



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27/02/2024



ABSTRACT

The application harnesses the power of machine learning to predict individuals who are likely to require a loan based on a variety of demographic and financial factors.

Through this predictive capability, the platform facilitates connections between potential loan seekers and financial institutions, provides insights into location-based demand for real estate development and investment, and offers pertinent information to government agencies and policymakers. As part of its business model, the application charges a fee for access to this data, thereby establishing a sustainable revenue stream.

PROBLEM STATEMENT

Despite the wide availability of financial services, many individuals encounter challenges in accessing loans that meet their specific needs. These obstacles can stem from factors such as a lack of credit history, inadequate income documentation, or limited understanding of the loan application process. Meanwhile, financial institutions and real estate developers face difficulties in identifying potential customers or discerning demand patterns in specific locations. Additionally, policymakers and regulators require comprehensive data to formulate effective housing policies and regulations. Addressing these challenges necessitates the development of a platform that leverages machine learning to predict loan needs accurately.

MARKET/CUSTOMER/BUSINESS

NEED ASSESSMENT

Market demand exists for a solution that bridges the gap between loan seekers and financial institutions, streamlines decision-making for real estate development and investment, and provides actionable insights for policymakers. Customers seek a user-friendly platform that utilizes advanced analytics to match loan seekers with appropriate financial products while ensuring data privacy and compliance with regulations.



TARGET SPECIFICATIONS

- Accuracy: The platform must achieve high prediction accuracy in identifying potential loan seekers.
- Usability: An intuitive interface is necessary for users to input data and access insights seamlessly.
- Data Security: Robust security measures are essential to safeguard user information.
- Compliance: Adherence to regulatory requirements governing data privacy and financial services is critical.
- Scalability: The platform should be designed with scalability in mind to accommodate increasing user demand.

EXTERNAL SEARCH

The dataset i found on kaggle. The dataset consists SK_ID_CURR, CODE_GENDER, FLAG_OWN_CAR, DAYS EMPLOYED, ETC.

Table: loan_data (307,511 rows)

SK_ID_CURR	TARGET	NAME_CONTRACT_TYPE	CODE_GENDER	FLAG_OWN_CAR	FLAG_OWN_REALTY	CNT_CHILDREN	AMT_INCOME_TOTAL	AMT_CREDIT
100125	0	Cash loans	F	N	N	0	126000	269
100347	0	Cash loans	F	N	N	0	81000	64
100350	0	Cash loans	F	N	Y	0	112500	481
100372	0	Cash loans	F	N	N	0	90000	55
100898	0	Cash loans	F	N	Y	0	112500	45
102269	0	Cash loans	F	N	N	0	49500	22
102419	0	Cash loans	F	N	Y	0	144000	45
103039	0	Cash loans	F	N	Y	0	225000	22
103351	0	Cash loans	F	N	Y	0	189000	26
103630	0	Revolving loans	F	N	Y	0	112500	24
104097	0	Cash loans	F	N	Y	0	157500	75
104325	0	Cash loans	F	N	Y	0	67500	22
104372	0	Cash loans	F	N	N	0	90000	11
104474	0	Cash loans	F	N	N	0	189000	21
104550	0	Cash loans	F	N	Y	0	78750	52
105010	0	Cash loans	F	N	Y	0	101250	34
105171	0	Cash loans	F	N	Y	0	144000	46
105474	0	Cash loans	F	N	Y	0	68886	15
105724	0	Cash loans	F	N	Y	0	157500	22
105858	0	Cash loans	F	N	Y	0	202500	64
105881	0	Cash loans	F	N	N	0	225000	28

Table tools: Name: loan_data, Mark as date table, Manage relationships, New measure, Quick measure column, New table, Calculations.

Auto recovery contains some recovered files that haven't been opened. View recovered files

Data: loan_data, Σ AMT_ANNUITY, Σ AMT_CREDIT, Σ AMT_GOODS_PRICE, Σ AMT_INCOME_TOTAL, Σ AMT_REQ_CREDIT_BUREAU_D..., Σ AMT_REQ_CREDIT_BUREAU_H..., Σ AMT_REQ_CREDIT_BUREAU_M..., Σ AMT_REQ_CREDIT_BUREAU_Q..., Σ AMT_REQ_CREDIT_BUREAU_W..., Σ AMT_REQ_CREDIT_BUREAU_Y..., Σ APARTMENTS_AVG, Σ APARTMENTS_MEDI, Σ APARTMENTS_MODE, Σ BASEMENTAREA_AVG, Σ BASEMENTAREA_MEDI, Σ BASEMENTAREA_MODE, Σ CNT_CHILDREN, Σ CNT_FAM_MEMBERS.

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BENCHMARKING

Competitors in the real estate analytics space, including Zillow and Redfin . Compare their data coverage, visualization capabilities, market insights, and user experiences.

platforms used by government agencies and think tanks for policy development and analysis, such as Policy Link and the Urban Institute. Assess their research methodologies, data visualization tools, and policy recommendations.

Comprehensive benchmarking against competitors in loan prediction, real estate analytics, and policy development, can gain valuable insights into industry standards, best practices, and areas for differentiation. This analysis will inform the development and positioning of application, enabling us to deliver a competitive and innovative solution to the market.

APPLICABLE CONSTRAINTS

- Budgetary Limitations
- Technological Constraints
- Regulatory Compliance
- Data Privacy Requirements
- Timeline and Milestones
- Resource Constraints
- Infrastructure Requirements
- Vendor and Partner Dependencies

APPLICABLE REGULATIONS

- Financial Services Regulations
- Data Privacy Laws
- Fair Lending and Anti-Discrimination Laws
- Data Security Standards
- Consumer Protection Laws
- Regulatory Reporting and Compliance Obligations
- Geographic and Jurisdictional Considerations

BUSINESS OPPORTUNITY

The business opportunity in developing a platform for loan prediction and financial services leveraging machine learning and data analytics is significant and multifaceted. By addressing market demand, embracing technological innovation, navigating regulatory challenges, differentiating your offering, and implementing a scalable revenue model, one can capitalize on this opportunity to build a successful and sustainable business in the financial services industry.

FINAL PRODUCT PROTOTYPING

user values(income, age, employment status, martial status,
education level, location, net worth, etc..)

AI/ML

Housing loan application

NO

YES

we charge 10-15% for data
Location, Demand

we charge 10-
15% for data
Name, Contact

Government Agencies
Housing Authorities
Policy makers
Regulators

Real Estate
Developers & Investors

Financial Institutes

- Banks
- Credit Union
- Montage Lenders

CONCLUSION

The development of the loan prediction application represents a significant opportunity to address the evolving needs of consumers, financial institutions, real estate developers, and policymakers. By leveraging advanced machine learning algorithms, data analytics, and user-centric design principles, the application aims to revolutionize the way loans are accessed, evaluated, and distributed.