

# Better Banking: Smart Approach to Financial Decision Making

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**Abstract**— This project presents the development of a web application designed to allow users to easily compare various banking services, such as loans, deposits and other financial products. The platform will enable users to compare important factors like interest rates, fees, loan terms, and policies across multiple banks, simplifying the decision-making process.

The platform mainly focuses on loans. The loans can be divided mainly on the basis of purpose and based on repayment terms. The main objective here is to help the user by offering filtering options based on interest rates, fees, loan tenure and eligibility criteria. Additionally, it integrates, sorting mechanisms, and questionnaires to understand user financial needs and personalized banking service recommendations. The platform mainly uses modern technologies such as React for the front end and for backend it uses Node.js with Express.js and database like MongoDB. The main peculiarity of the platform is that it integrates different banking APIs for real-time data. By promoting this platform, we promote transparency and accessibility, this platform has the potential to revolutionize banking interactions and foster financial literacy.

**Keywords**—Banking Services, loan comparison, financial transparency, Api-driven banking.

## I. INTRODUCTION

The modern banking industry provides variety of banking services including loans, bill payments, fund transfers, online shopping, savings accounts, online credit cards and investment opportunities. These modern facilities allow users to select whatever they need and allow them to make use of the facilities much easier. Consumers benefit greatly from these offerings, but this may lead to serious problem due to the difficulty in comparison and selection of different banking services. These conflicts mainly include which all banks to select and which all are the most suitable services that they must choose depending upon consumers financial background . Comparing the interest rates and other requirements mainly in the case of loans will create much more confusion and difficulty. Uninformed decisions can lead to increased expenses and financial inefficiencies and lost chances of improved decision making and financial management if there is no platforms for comparing these products.

Financial literacy and data driven decision making is very essential in order to avoid confusions and financial inefficiencies. So a well adaptive platform is necessary in order to give the consumer a user friendly decision making platform because many customers do not have access to organize and understandable banking information.

Financial decision making can be broadly classified as Direct Financial Factors, Indirect Financial Factors and External Influences

- Direct Financial Factors: These include interest rates, and loan terms directly and the cost of banking products
- Indirect Financial Factors: These include approval times credit score impact and customer service quality that will influence banking decisions
- External Influences: Economic conditions, regulatory policies, and banking reputation, which affect financial products and their suitability for consumers.

By analyzing these broad categories, the platform allows the user to create a data driven decision making strategy by allowing the user to select the required interest rates, the loan tenure details. Usually, the credit scores sometimes affect the loan availability so the platform also allows the user to find the credit score based on their previous loan histories. Thus, the platform works by a well-structured algorithm by considering all user needs thus by inducing a dynamic platform which is user friendly and selects financial products efficiently.

The proposed platform mainly aims to simplify the process by providing a centralized system that allows user to efficiently compare financial products, filter results based on their preferences, and make data-driven decisions.

## II. LITERATURE SURVEY

The current banking comparison tools mainly depends on various methods to assist users in selecting financial products. However, they often suffer from limitations that make decision-making complex and inefficient. These limitations include

#### A. Manual Data Entry in Loan Comparison Platforms

- Many traditional financial comparison platforms require users to manually enter loan details such as interest rates, tenure, and fees. This process is:
  1. Time-consuming – Users must gather data from multiple sources.
  2. Error-prone – Incorrect or outdated entries can lead to inaccurate loan comparisons.

#### B. Outdated and Static Financial Data in Banking Platforms

- Many financial comparison websites rely on static or periodically updated databases, which often fail to reflect real-time market changes. This results in:
  1. Users applying for loans without knowing updated interest rates or new policies.
  2. A lack of synchronization between banking institutions and comparison platforms.

#### C. Lack of Personalized Loan Recommendations

- Most loan comparison platforms provide generic loan suggestions without considering an individual's:
  1. Credit score and repayment history.
  2. Income level and employment stability.
  3. Preferred banks where the user already has accounts.

#### D. Absence of Real-Time Credit Score-Based Loan Eligibility Checks

- Traditional banking platforms do not actively adjust interest rates or eligibility based on credit score variations. Existing systems lack:
  1. A real-time credit score evaluation mechanism before loan application.
  2. An integrated scoring system that calculates eligibility dynamically.

#### E. Inefficient Loan Filtering & Ranking Systems

- Many comparison tools use basic filtering, usually sorting by interest rate, but fail to:
  1. Consider loan flexibility, processing fees, and tenure variations.
  2. Use a weighted scoring system to determine the best loan for a user's profile.

#### F. Lack of AI-Based Loan & Banking Assistance

- Current financial websites lack interactive AI-driven support, leading to:
  1. Confusion in selecting loans due to information overload.
  2. Limited personalized advice based on user profiles.

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- #### G. Limited Real-Time Loan Comparison Across Banks

- Most existing platforms require users to visit individual banking websites for updated information. The limitations include:
  1. The need to manually compare multiple banks.
  2. A lack of instant, automated bank-to-bank comparison.

Thus, our Proposed platform overcomes these limitations by providing a well-structured user interfaces by giving the user and assisting them by providing the decisions such as financial recommendations, real-time banking data retrieval, and a personalized questionnaire to understand user preferences. By understanding various automation difficulties and by proper guidance the platform provides a transparent and informed comparisons of financial products, ultimately enhancing a better banking experience.

### III. PROPOSED IDEA

Better Banking is a web-based platform aimed for those individuals' seeking loans of different types and unsure about which bank to avail them from. Through a basic eligibility testing questionnaire, our system is designed to filter out and rank the available banks based on the individual's financial status.

#### A. Up-to-date data

API of different banks are used to keep track of the change in interest rates, loan rates, tenures and bank policies that may affect the affordability of the loan taken. This makes sure that the user chooses the perfect option resonating with their needs and current situation. The APIs allow to:

1. Track Interest Rate Fluctuations – Update databases and allow for more favorable choices.
2. Update Loan Tenures & Policies – If a bank adjusts repayment terms or eligibility criteria, the website reflects these changes instantly.

#### B. Smart Filtering

The platform uses a special algorithm to filter out the banks based on the data that is fed by the user. Each piece of input data—such as income level, credit score, loan amount, and tenure preference—has a predefined weightage, such that it influences the final ranking differently based on its importance. User can also choose banks he/she already has an account in.

This can also be added as a preference to the final rank list being displayed.

**Weighted Scoring System:** Each factor (income, employment type, credit score, loan purpose, etc.) is assigned a weight, impacting the final ranking.

**C. Efficient and Accessibility**

The platform ensures security through safe encryption and integrity. All information required through the website will not be disclosed publicly and serve only as a primary background check for testing the user’s eligibility.

**D. Financial Awareness and Education**

Users are kept well informed of the trends in the rates of different banks through our API driven data management system. By eliminating manual research, this API-driven approach ensures that users always make optimal financial decisions, securing the best possible loan deals.

**E. Credit Score System**

The system calculates the credit score based on multiple factors, assigning different weightage to each:

$$Credit\ Score = 300 + S_{income} + S_{history} + S_{inquiries} + S_{stability} + S_{demographics}$$

where:

- Income & Loan Utilization (40%)
  - Oldest loan age: ≥5 years (+45), 2-5 years (+30), <2 years (+15)
  - If utilization ≤ 50% → +270 points
  - If utilization ≤ 70% → +180 points
  - Else → +90 points
- Loan & Credit History (30%)
  - On-time payments: Always (+225), Sometimes (+150), Else (+75)
  - Oldest loan age: ≥5 years (+45), 2-5 years (+30), <2 years (+15)
- Recent Loan Inquiries (10%)
  - 0 inquiries (+90), 1-2 inquiries (+60), >2 inquiries (+30)
- Employment Stability (10%)
  - Employment Type: Salaried (+45), Self-Employed (+30), Others (+15)

- Job Duration: ≥3 years (+45), 1-3 years (+30), <1 year (+15)
- Age & Demographics (10%)
  - Age 25-45 (+90), Age <25 (+60), Age >45 (+75)

**Final Credit Score:** The system ensures a score between 300 (minimum) and 900 (maximum).

**F. Loan Eligibility**

Based on the credit score, the system determines the interest rate and maximum eligible loan amount for different loan types (home, car, gold).

**Interest Rate Adjustment**

$$Final\ Interest\ Rate = Base\ Rate + Rate\ Adjustment$$

Where the rate adjustment depends on the credit score.

**Maximum Eligible Loan Calculation**

Credit score	Rate Adjustment	Eligibility (%)
≥750	0.0%	90%
650-749	+0.5%	75%
550-649	+1.5%	60%
<550	+2.5%	40%

$$Max\ Loan\ Amount = L_{Base} + \frac{E}{100}$$

- $Max\ Loan\ Amount$  = Maximum eligible loan amount
- $L_{Base}$  = Base maximum loan amount for the loan type
- $E$  = percentage based on credit score

**G. AI Chatbot**

The platform supports an AI-enabled assistant to refine user experience with real-time finance advice and recommendations. The AI assistant will:

**Loan Eligibility Check:** It will allow the user to have a conversation with the AI for checking loan eligibility based on financial history, income, and credit score.

**Comparative Analysis:** The assistant will identify top loan deals through the comparison of current data received from bank APIs.

**Personalized Financial Advice:** It will recommend customized banking products, e.g., low-interest loans or high-yield savings accounts.

## IV. DISCUSSION

Each question from our tailor-made eligibility test contributes to the final order of banks being displayed to the user. This shows that each factor has a specific weight that affects that order. The questionnaire passes from a general set to a loan specific set of questions.

- The ranking system in our platform is designed to ensure that users receive highly relevant and personalized loan recommendations. The eligibility test assigns weights to key financial and personal factors, ensuring that the displayed bank options are tailored to the user's profile. The questionnaire progresses from a general set to a loan-specific set of questions, refining the results at each step.
- In the first phase, the following factors contribute 100% to the ranking calculation:
  1. Date of Birth (10%) – Younger applicants typically qualify for longer loan tenures, influencing their borrowing capacity.
  2. Residency Status (15%) – Certain banks impose stricter conditions for non-residents, affecting eligibility.
  3. Employment Status (20%) – Salaried individuals often have a higher chance of loan approval due to stable income sources.
  4. Annual Income (25%) – A major determinant of repayment capability, as banks assess the ability to service loans.
  5. Credit Score (30%) – The most significant factor, as a higher credit score lowers interest rates and improves loan eligibility.

### Impact of Weighted Ranking System

- Unlike conventional loan comparison websites, which rely on fixed interest rate filters or basic eligibility checks, our system dynamically adjusts rankings based on user input. This means that two applicants with similar income but different credit scores or employment types may receive different loan recommendations, ensuring a more accurate and fair selection process.
- For example, if an applicant has a high income but a low credit score, they may still qualify for certain loans, but the system adjusts the ranking to reflect potential higher interest rates. Similarly, a self-employed individual may have a strong financial profile but could face stricter lending policies, which our system accounts for through weighted scoring.

### Interpretation of Key Findings

One of the most impactful features is the real-time loan comparison system, which allows users to evaluate different

loan options based on up-to-date interest rates, loan terms, and eligibility criteria. This eliminates the need for manual research, reducing the time and effort users spend on financial decision-making. By considering factors such as loan urgency, interest preferences, and creditworthiness, the platform tailors recommendations to meet individual user needs, increasing the likelihood of securing the most suitable loan option.

### Implications for the Banking Industry

The findings suggest that such an AI-driven, data-centric approach to banking can significantly improve customer engagement and financial literacy. By providing transparency in loan rates and recommendations based on user preferences, this system can serve as a digital financial advisor, reducing the dependency on manual credit score assessments and bank visits. Furthermore, real-time loan comparisons can increase competition among banks, encouraging them to offer more customer-friendly financial products.

## V. CONCLUSION

Choosing the right loan is often a frustrating process, filled with outdated information, generic recommendations, and unclear eligibility criteria. Our platform tackles these challenges by integrating real-time banking APIs, ensuring that users always have access to the latest interest rates, loan policies, and eligibility requirements.

By implementing a smart filtering system, we provide users with personalized loan rankings based on their income, credit score, and financial history—offering recommendations that actually make sense for their unique situation. The automated credit score system further enhances transparency, helping users understand how their financial behaviour impacts their borrowing options. Additionally, our AI-powered assistant simplifies loan comparisons, offering real-time insights and customized financial advice, making the decision-making process smoother and more informed.

With these features, our platform makes loan selection easier and more reliable. Instead of sifting through outdated information and generic recommendations, users get real-time updates, personalized suggestions, and AI-driven insights that actually fit their financial situation. Whether someone is comparing loan options or checking their eligibility, they can make confident decisions backed by accurate and up-to-date information—without the guesswork.

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