**🏦 Bank Loan Dashboard Project (Power BI + Excel)**

**📌 Project Overview**

This project focuses on analyzing **bank loan applications** to identify patterns, approval trends, and credit risk.  
The dataset contains **500 synthetic but realistic Indian records**, covering applicant details, loan amount, income, credit score, and approval status.  
The **Power BI Dashboard** helps financial institutions and data analysts visualize the loan approval process and discover insights to improve decision-making.

**🎯 Objective**

To analyze loan applications and identify key factors that influence loan approval or rejection.

**📂 Dataset Details**

**File Name:** Bank\_Loan\_Dataset\_India.xlsx  
**Total Records:** 500  
**Data Type:** Synthetic (realistic Indian-style data)

| **Column Name** | **Description** |
| --- | --- |
| ApplicationID | Unique loan application identifier |
| ApplicantName | Applicant’s full name |
| Age | Applicant’s age (21–60 years) |
| Gender | Male / Female |
| MaritalStatus | Single / Married |
| Education | Graduate, Postgraduate, etc. |
| EmploymentStatus | Job type or work status |
| MonthlyIncome | Applicant’s income (₹) |
| LoanAmount | Requested loan amount |
| LoanTerm | Loan period (in months) |
| CreditScore | Applicant’s credit rating (300–900) |
| LoanType | Type of loan (Personal, Home, Auto, Business, Education, Gold) |
| LoanStatus | Final decision (Approved / Rejected / Pending) |
| ApplicationDate | Date when the loan was applied |
| DecisionDate | Date of approval/rejection |
| InterestRate | Interest rate offered (%) |

**📊 Key Metrics & KPIs**

| **KPI** | **Description** |
| --- | --- |
| 🔹 Total Loan Applications | Count of all applications received |
| 🔹 Approval Rate | % of approved loans |
| 🔹 Rejection Rate | % of rejected loans |
| 🔹 Average Loan Amount | Mean value of loans applied |
| 🔹 Average Credit Score | Overall creditworthiness of applicants |
| 🔹 Loan Type Distribution | % of loan types applied (Personal, Home, etc.) |
| 🔹 Income vs Loan Amount | Relationship between income and loan size |
| 🔹 Credit Score vs Loan Status | Effect of credit score on approval likelihood |

**📈 Power BI Dashboard Components**

**1. Summary Page:**

* KPI Cards → Total Applications, Approved, Rejected, Pending
* Approval Rate and Average Loan Amount

**2. Loan Analysis Page:**

* Donut Chart → Loan Type distribution
* Bar Chart → Loan Status by Employment Type
* Line Chart → Application Trends over time
* Scatter Plot → Credit Score vs Loan Amount

**3. Demographic Insights Page:**

* Gender-based approval comparison
* Income & Education level analysis
* Age group approval trend

**💡 Insights (Sample Findings)**

1. Applicants with **Credit Score > 750** had **85% approval rate**.
2. **Self-employed** applicants showed higher rejection probability due to income instability.
3. **Personal Loans** formed the largest share (≈ 30%) of all applications.
4. Average processing time between Application and Decision was **5–10 days**.
5. **Higher loan amounts (> ₹10 lakh)** had lower approval rates when income < ₹50k/month.

**🧮 Tools Used**

* **Excel:** Data preparation and cleaning
* **Power BI:** Data modeling, dashboard design, DAX calculations, and visuals
* **GitHub:** Project documentation and sharing

**🧾 Possible Use Cases**

* Loan approval prediction analysis
* Credit risk management visualization
* Financial reporting for loan departments
* Interactive dashboards for management insights

**🧠 Key Learning Outcomes**

* Data Cleaning & Modeling in Power BI
* Understanding relationships between Credit Score and Loan Status
* Creating calculated measures using DAX
* Designing professional dashboards for financial analysis

**🪪 Project Summary for Resume / Portfolio**

**Project Title:** Bank Loan Approval Analysis Dashboard  
**Description:** Analyzed 500+ loan applications using Excel and Power BI to identify patterns in approval rates, credit score influence, and loan distribution. Designed a multi-page Power BI dashboard with KPIs, filters, and drill-through visuals to provide actionable insights for financial decision-making.  
**Tools:** Power BI, Excel, DAX, GitHub  
**Domain:** Finance / Banking Analytics