COMPANY LOAN DATA ANALYSIS REPORT

About Company

Dream Housing Finance company deals in all home loans. They have presence across all urban, semi urban and rural areas. Customer first apply for home loan after that company validates the customer eligibility for loan.

This dataset was gotten from [Kaggle](#).

STEPS INVOLVED:

1. Data Cleaning & Preparation

- **Duplicates**: No duplicates were found.

- **Missing Values** were handled as follows:

    o *Gender*: Filled with mode → **Male**.

    o *Marital_Status*: Filled with mode → **Married**.

    o *Dependents*: Filled with mode → **1**.

    o *Self_Employed*: Filled with mode → **No**.

    o *Loan_Amount*: Filled with **median** value = 128.

    o *Loan_Amount_Term*: Filled with mode → **360 months**.

    o *Credit_History*: Filled with mode → **1 (Good Credit History)**.

- **Column Standardization**: Renamed columns for clarity and consistency.

- **Data Transformation**: Changed categorical codes to more intuitive labels (e.g., "Y" → "Yes", "N" → "No").

➤ After cleaning, the dataset had **614 loan applications** across 13 attributes.

2. Descriptive Statistics

- **Applicant Income**: Mean = **5,403**, Std Dev = **6,109**, Max = **81,000**.

    o Wide income disparity, indicating outliers (possible high-income professionals).

- **Co-applicant Income**: Mean = **1,621**, Max = **41,667**.

    o Many applicants had **no co-applicant income** (25th percentile = 0).

- **Loan Amount**: Median = **128**, Mean = **146**, Max = **700**.

    o Most loans centered between 100–200 units.

- **Loan Term**: Mode = **360 months (30 years)**.

o   Majority of applicants opted for long-term loans.

- **Credit History**: 84% had good credit history (value = 1).

3. Key Insights

a) Gender & Loan Applications

- **81% of applicants were Male**, while only 19% were Female.

Loan Application Count

112

Female

Male

502
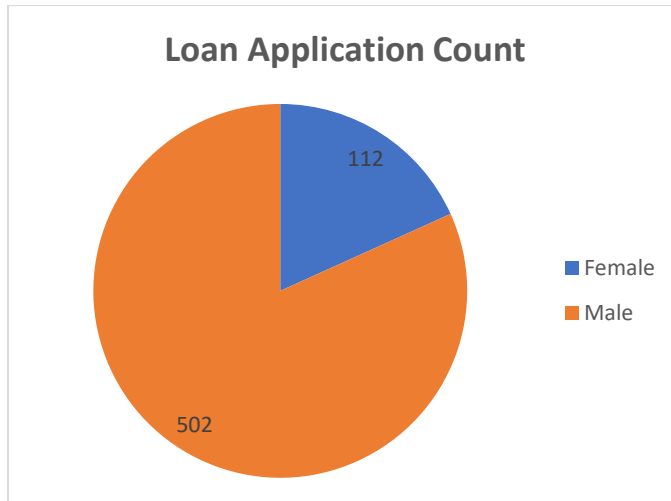
b) Marital Status

- **65% Married**, **35% Single**.

- Married individuals dominated applications, possibly due to higher household needs.

Application by Employment Status

	Married	Single
No	347	185
Yes	54	28
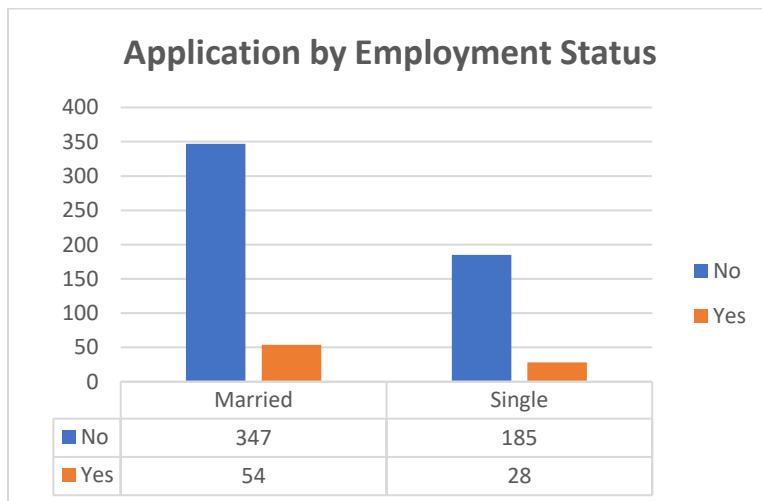
c) Education

- **78% were Graduates, 22% Not Graduates**.

- Suggests higher education correlates with loan applications.

d) Employment Type

- **86% Not Self-Employed**, **14% Self-Employed**.

- Indicates salaried individuals are more likely to seek loans.

e) Loan Approval Status

- **69% of loans were approved**, while **31% were rejected**.

- Approval is strongly tied to **Credit History**:

    o 79% approval rate for applicants with credit history = 1.

    o Only 8% approval rate for credit history = 0.

f) Income vs Loan Amount

- Applicants with higher income levels generally applied for **larger loan amounts**.

- However, outliers exist (e.g., applicants with very high income but small loans).

4. Recommendations

1. **Target Female Applicants**

    o Only 19% applicants are female. The company can launch women-focused loan products.

2. **Credit History Awareness Programs**

    o Since approval is heavily dependent on credit history, educating applicants on maintaining good credit could increase approvals.

3. **Flexible Loan Products**

    o Most applicants opt for **30-year terms**. Offering mid-range terms (15–20 years) may appeal to those seeking faster repayments.

4. **Support for Self-Employed Individuals**

    o Only 14% are self-employed. Designing tailored packages (e.g., variable EMI plans) could attract more entrepreneurs.

5. **Income Segmentation**

    o The wide range of incomes suggests need for segmented loan products:

        ▪ Low-income: microloans.

        ▪ Middle-income: home/vehicle loans.

- High-income: investment/asset loans.