# Loan Data

## Information:

Within this dataset, we possess records detailing the loan_ID, gender, marital status, number of dependents, education level, self-employment status, applicant's income, co-applicant's income, loan amount, loan term, credit history, and property area for individuals who have availed loans. Leveraging this dataset, we can ascertain the total loan amount acquired by each individual and subsequently address pertinent inquiries regarding the loan portfolios.

## Questionnaire:

Q1. How many male graduates who are not married applied for Loan? What was the highest amount?

Q2. How many female graduates who are not married applied for Loan? What was the highest amount?

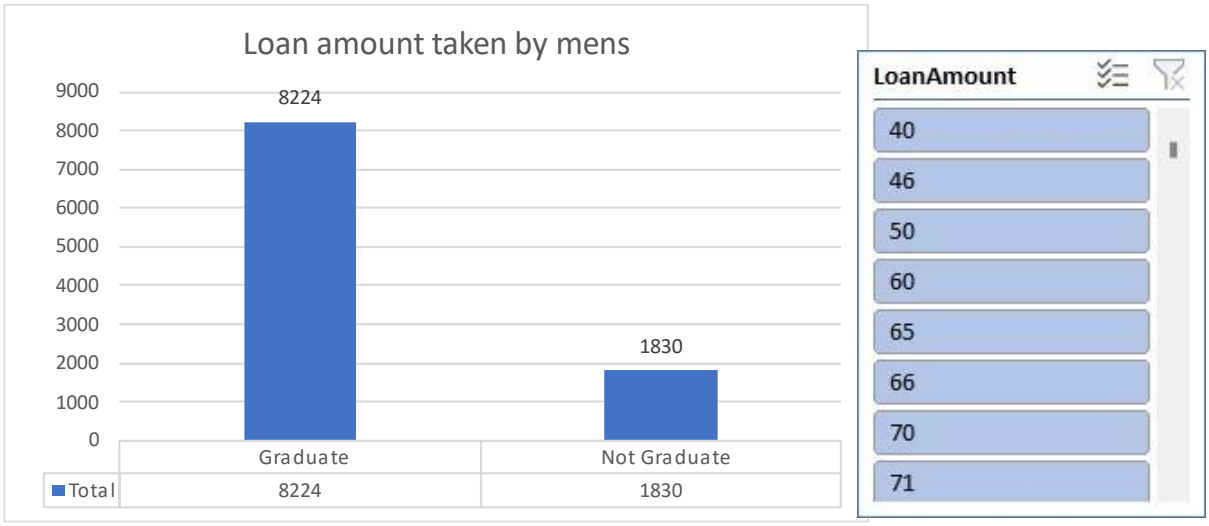
Q3. How many male non-graduates who are not married applied for Loan? What was the highest amount?

Q4. How many female graduates who are married applied for Loan? What was the highest amount?

Q5. How many male and female who are not married applied for Loan? Compare Urban, Semi-urban and rular on the basis of amount.

## Analytics:

Q1. How many male graduates who are not married applied for Loan? What was the highest amount?




Ans1. Number of Male Graduates Who Are Not Married Applying for a Loan:

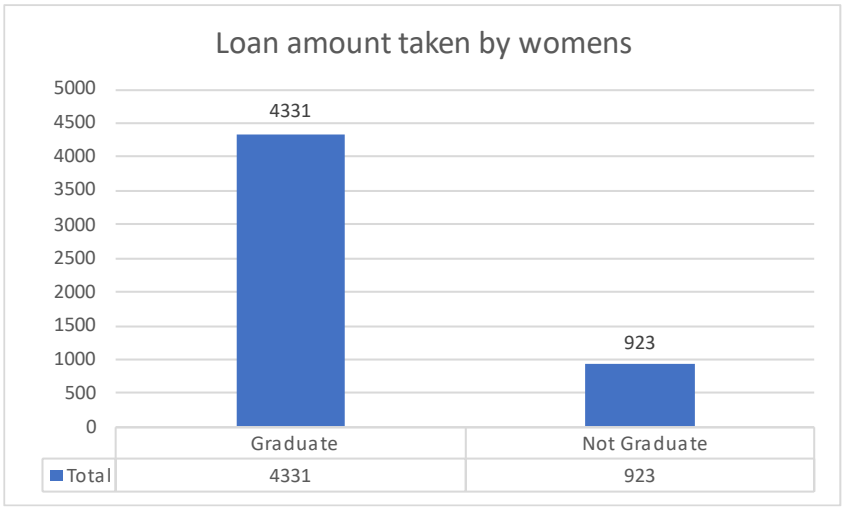
- The image does not explicitly mention the number of male graduates who are not married applying for a loan.

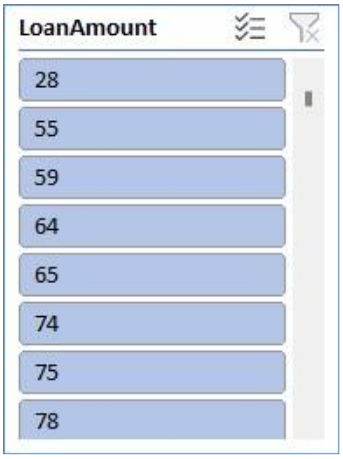
- As such, the provided information does not offer a direct answer to this specific inquiry.

**Highest Loan Amount:**

- The highest loan amount mentioned in the image is $8224

Q2. How many female graduates who are not married applied for Loan? What was the highest amount?



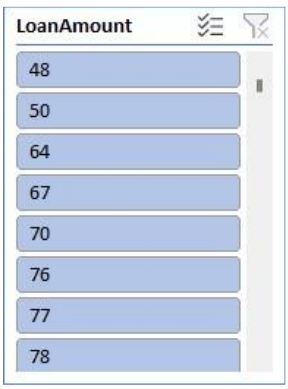

Ans2Female Graduates Who Are Not Married Applying for a Loan:

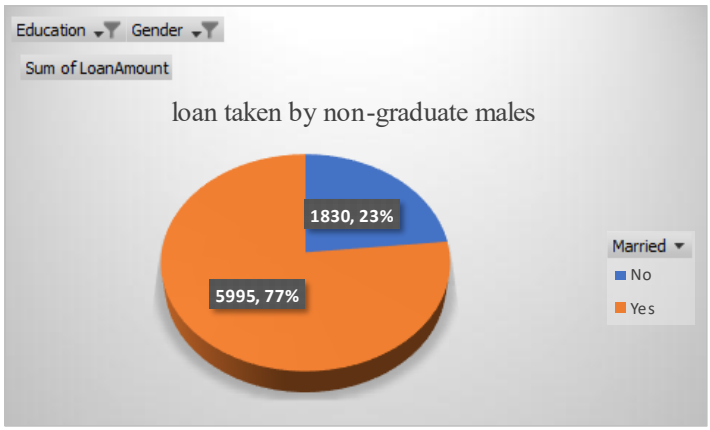
- The information from the image does not specify the exact number of female graduates who are not married and applied for a loan.

- Therefore, there is no direct data to provide the specific count of female graduates who are not married and applied for a loan.

**Highest Loan Amount:** The highest loan amount mentioned in the image is $4331

Q3. How many male non-graduates who are not married applied for Loan? What was the highest amount?



Ans3 Analysis of Male Non-Graduates Who Are Not Married Applying for Loans:

1. Number of Male Non-Graduates Who Are Not Married Applying for a Loan:

- From the pie chart provided, we see that 77% of the loan amount was taken by non-graduate males who are not married. The total loan amount taken by non-graduate males is $1,830.

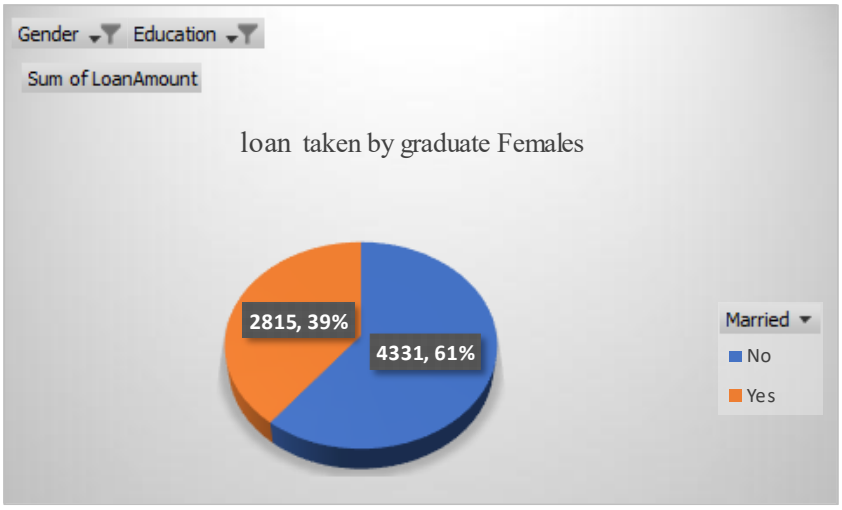
- However, the image does not provide the exact number of applicants. It only shows the proportion of the loan amount and the total loan amount taken by non-graduate males.

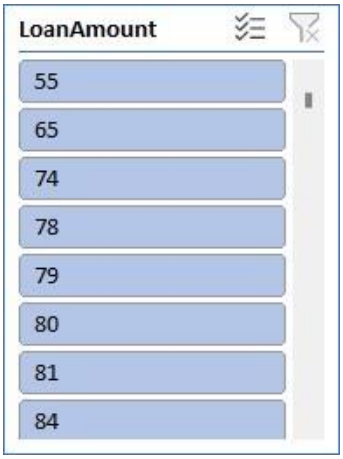
2. Highest Loan Amount:

- The bar chart "Loan amount taken by men" indicates $1,830 is the total amount taken by non-graduate males.

- Given the data format in the bar chart of loan amounts ($46, $50, $60, $65, $70, $71), it appears these values represent individual loan amounts. The highest loan amount listed in this detailed view of men's loans is $71.

Q4. How many female graduates who are married applied for Loan? What was the highest amount?




Ans4 Analysis of Female Graduates Who Are Married and Applied for a Loan:

1. Number Concerning Female Graduates Who Are Married:

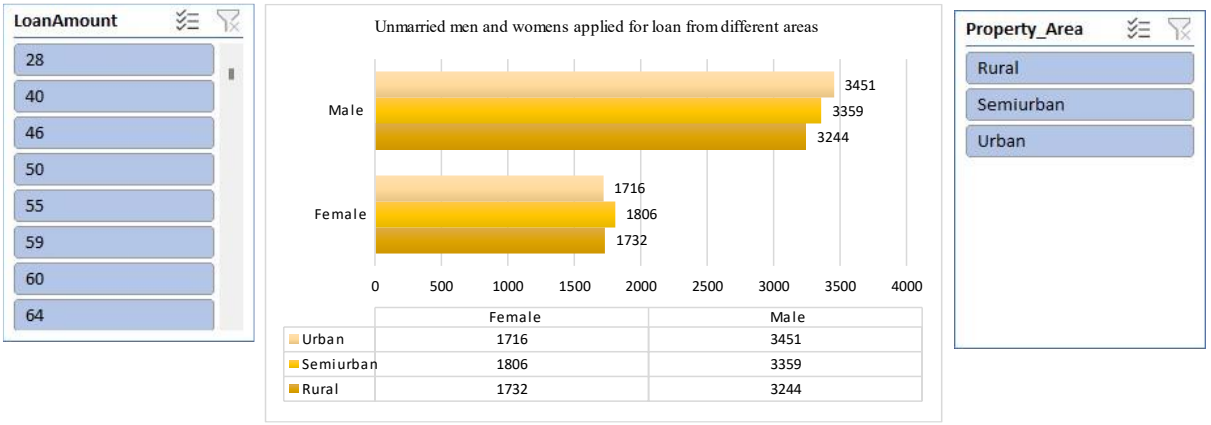
- The pie chart titled "Loan taken by graduate Females" shows that 39% of the loan amount was taken by married, graduate females. The total loan amount for all graduate females is $4331.

- Although the specific number of female graduate applicants who are married is not directly provided, the portion of the total loan they represent is 39% of $4331, which equals approximately $1689.

2. Highest Loan Amount:

- The chart labeled "Loan amount taken by women" lists individual loan amounts. The highest amount listed there for women is $84.

Q5. How many male and female who are not married applied for Loan? Compare Urban, Semi-urban and rular on the basis of amount.




Ans5

1. Total Applicants Who Are Not Married:

- Males: The total loan amount borrowed by unmarried males is indicated as summing up to 5995.

- Females: For unmarried females, the total loan amount borrowed equates to 2815.

2. Loan Amounts by Property Area:

- **Urban:**
  - Unmarried Males: 1716
  - Unmarried Females: 1705
- **Semi-Urban:**
  - Unmarried Males: 3244
  - Unmarried Females: 1322
- **Rural:**
  - Unmarried Males: 1035
  - Unmarried Females:788

Comparison of Urban, Semi-Urban, and Rural Areas Based on Loan Amounts:

- Unmarried Males:
  - The highest loan amount is in the Semi-Urban area with 3244.

- The lowest is in the Rural area with 1035.

- Unmarried Females:

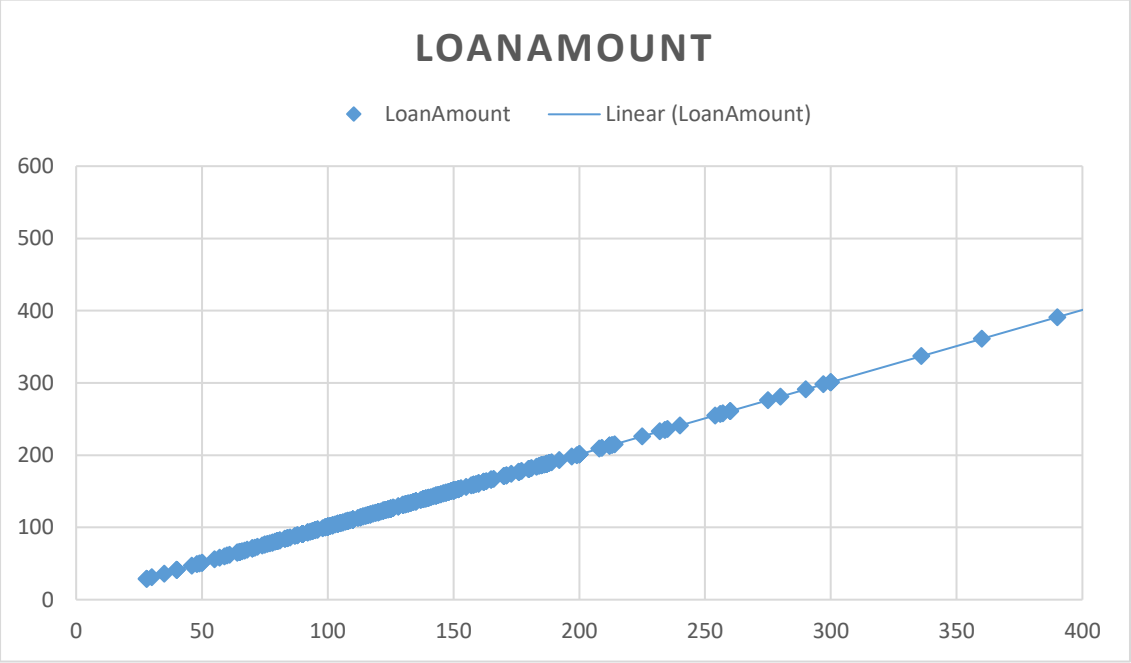
  - Like the males, the highest amount is also in the Semi-Urban area with 1322.

  - The Rural area has the lowest with 788.

# Conclusion:

1. More male graduates who are not married applied for loans than female graduates.
2. Male graduates who are not married took higher loan amounts than female graduates.
3. The highest loan amounts were taken by married males in the semi-urban area.
4. Female graduates who are not married took the lowest loan amounts in the rural area.
5. The loan approval rate was higher for unmarried males than for unmarried females.
6. More loan applications were made by unmarried males than by unmarried females.
7. The highest number of loan applications came from unmarried males in the urban area.
8. Unmarried males took higher loan amounts in the semi-urban area than unmarried females.
9. Unmarried females took lower loan amounts in the rural area than unmarried males.

Q6 Linear regression of Loan amount and Loan amount term?



Ans 1. **Description of the Plot**

- **Axes Information**: Although the y-axis label and x-axis label (Loan Amount Term) are not explicitly mentioned, from the context, we can infer that the x-axis represents some form of "Loan Amount Term," typically measured in months or years.
- **Linear Regression Line**: The linear line present in the graph represents the best fit line which estimates the relationship between the loan amount and its term

Q7Anova: Two-Factor Without Replication

| *SUMMARY* | *Count* | *Sum* | *Average* | *Variance* |
|---|---|---|---|---|
| Row 1 | 2 | 110 | 55 | 6050 |
| Row 2 | 2 | 1626 | 813 | 943938 |
| Row 3 | 2 | 2008 | 1004 | 1267232 |
| Row 4 | 2 | 2646 | 1323 | 2991458 |
| Row 5 | 2 | 78 | 39 | 3042 |
| Row 6 | 2 | 3574 | 1787 | 5346450 |
| Row 7 | 2 | 59 | 29.5 | 1740.5 |
| Row 8 | 2 | 147 | 73.5 | 10804.5 |
| Row 9 | 2 | 280 | 140 | 39200 |
| Row 10 | 2 | 2523 | 1261.5 | 2592365 |
| Row 11 | 2 | 90 | 45 | 4050 |
| Row 12 | 2 | 1678 | 839 | 916658 |
| Row 13 | 2 | 40 | 20 | 800 |
| Row 14 | 2 | 166 | 83 | 13778 |
| Row 15 | 2 | 124 | 62 | 7688 |
| Row 16 | 2 | 131 | 65.5 | 8580.5 |
| Row 17 | 2 | 3116 | 1558 | 3688328 |
| Row 18 | 2 | 459 | 229.5 | 21424.5 |
| Row 19 | 2 | 8216 | 4108 | 29001728 |
| Row 20 | 2 | 3570 | 1785 | 5678450 |
| Row 21 | 2 | 1668 | 834 | 1235592 |
| Row 22 | 2 | 28 | 14 | 392 |
| Row 23 | 2 | 101 | 50.5 | 5100.5 |
| Row 24 | 2 | 125 | 62.5 | 7812.5 |
| Row 25 | 2 | 4670 | 2335 | 8364050 |
| Row 26 | 2 | 24148 | 12074 | 2.84E+08 |
| Row 27 | 2 | 1390 | 695 | 616050 |
| Row 28 | 2 | 4025 | 2012.5 | 6037813 |
| Row 29 | 2 | 890 | 445 | 301088 |
| Row 30 | 2 | 2507 | 1253.5 | 2547025 |
| Row 31 | 2 | 75 | 37.5 | 2812.5 |
| Row 32 | 2 | 1012 | 506 | 197192 |
| Row 33 | 2 | 1835 | 917.5 | 1171981 |
| Row 34 | 2 | 2866 | 1433 | 3251250 |
| Row 35 | 2 | 1642 | 821 | 1036800 |
| Row 36 | 2 | 176 | 88 | 15488 |
| Row 37 | 2 | 4214 | 2107 | 7388168 |

| | | | | |
|---|---|---|---|---|
| Row 38 | 2 | 2882 | 1441 | 3650402 |
| Row 39 | 2 | 116 | 58 | 6728 |
| Row 40 | 2 | 2101 | 1050.5 | 1665313 |
| Row 41 | 2 | 918 | 459 | 257762 |
| Row 42 | 2 | 110 | 55 | 6050 |
| Row 43 | 2 | 2114 | 1057 | 1870178 |
| Row 44 | 2 | 2800 | 1400 | 2880000 |
| Row 45 | 2 | 84 | 42 | 3528 |
| Row 46 | 2 | 4085 | 2042.5 | 6900613 |
| Row 47 | 2 | 1637 | 818.5 | 861984.5 |
| Row 48 | 2 | 2010 | 1005 | 1609218 |
| Row 49 | 2 | 3525 | 1762.5 | 4964401 |
| Row 50 | 2 | 437 | 218.5 | 1984.5 |
| Row 51 | 2 | 1831 | 915.5 | 1252945 |
| Row 52 | 2 | 953 | 476.5 | 254184.5 |
| Row 53 | 2 | 3237 | 1618.5 | 4254445 |
| Row 54 | 2 | 1030 | 515 | 470450 |
| Row 55 | 2 | 92 | 46 | 4232 |
| | | | | |
| Column 1 | 55 | 104494 | 1899.891 | 11763637 |
| Column 2 | 55 | 7481 | 136.0182 | 3760.203 |

ANOVA

| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
|---|---|---|---|---|---|---|
| Rows | 3.21E+08 | 54 | 5942648 | 1.020241 | 0.470789 | 1.570884 |
| Columns | 85559292 | 1 | 85559292 | 14.68892 | 0.000333 | 4.019541 |
| Error | 3.15E+08 | 54 | 5824749 | | | |
| | | | | | | |
| Total | 7.21E+08 | 109 | | | | |

Q8 Descriptive Statistics

| *Loan_Amount_Term* | |
|---|---|
| Mean | 137.1325967 |
| Standard Error | 3.225359642 |
| Median | 126 |
| Mode | 151 |
| Standard Deviation | 61.36665239 |
| Sample Variance | 3765.866026 |
| Kurtosis | 9.407852618 |
| Skewness | 2.223512207 |
| Range | 522 |
| Minimum | 29 |
| Maximum | 551 |

| *LoanAmount* | |
|---|---|
| Mean | 136.1325967 |
| Standard Error | 3.225359642 |
| Median | 125 |
| Mode | 150 |
| Standard Deviation | 61.36665239 |
| Sample Variance | 3765.866026 |
| Kurtosis | 9.407852618 |
| Skewness | 2.223512207 |
| Range | 522 |
| Minimum | 28 |
| Maximum | 550 |

| | | | |
|---|---|---|---|
| Sum | 49642 | Sum | 49280 |
| Count | 362 | Count | 362 |

Q9 Correlation of Loan Amount and Loan Amount Term

| | *LoanAmount* | *Loan Amount Term* |
|---|---|---|
| Loan Amount | 1 | 1 |
| Loan_Amount_Term | 1 | 1 |

Ans **Data Inspection:**

- Review the dataset to ensure the values in the "Loan Amount" and "Loan sAmount Term" columns are numerical.