Lending Club Case Study

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Lending Club Case Study

- Agenda of this case study was to analyze customer loan data using Python

- Data set was shared in csv format

- Team cleaned the data, added comments wherever necessary and created reusable code modules to plot graphs for important loan and customer attributes (parameters).

- In this presentation, we have used univariate analysis, segmented univariate analysis and bivariate analysis

- We have also identified metrics of given attributes (parameters) as type driven, data driven or business driven.
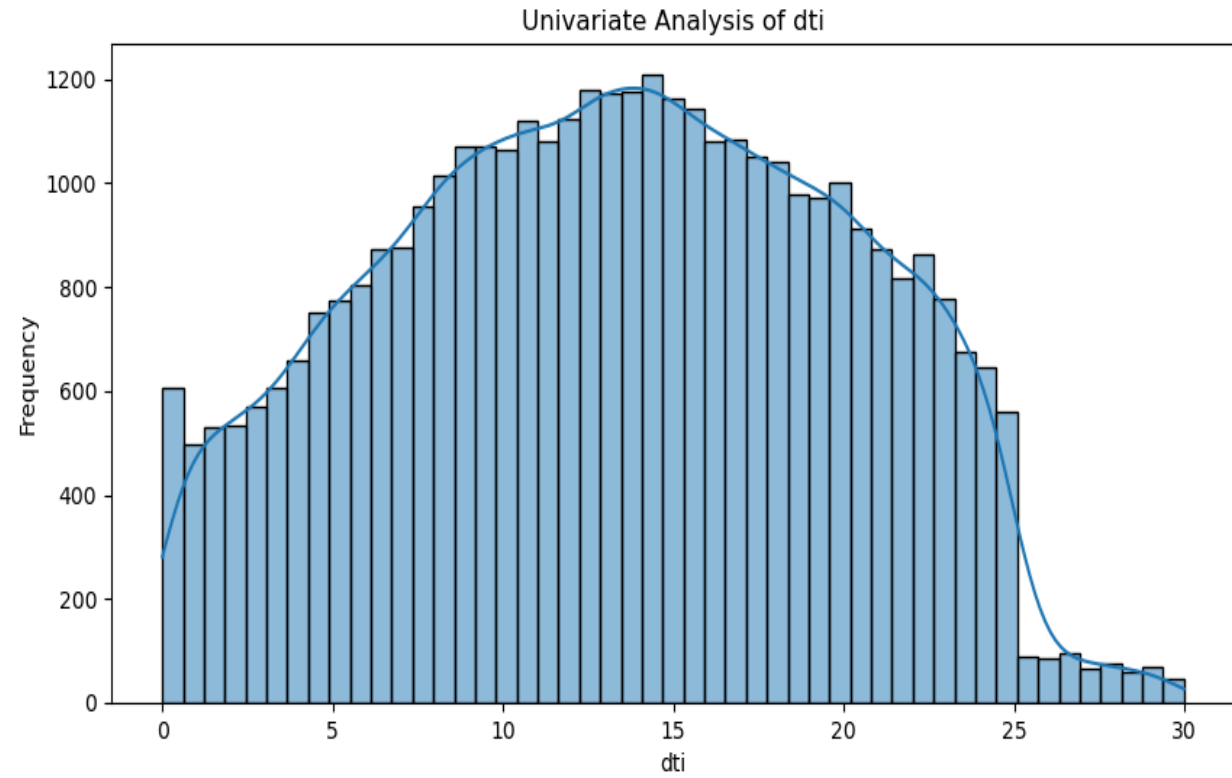
Univariate Analysis of verification_status

• This slide presents the univariate analysis of verification_status.
• **Conclusion:** Verification status provides useful insights but alone is not sufficient for loan approval.
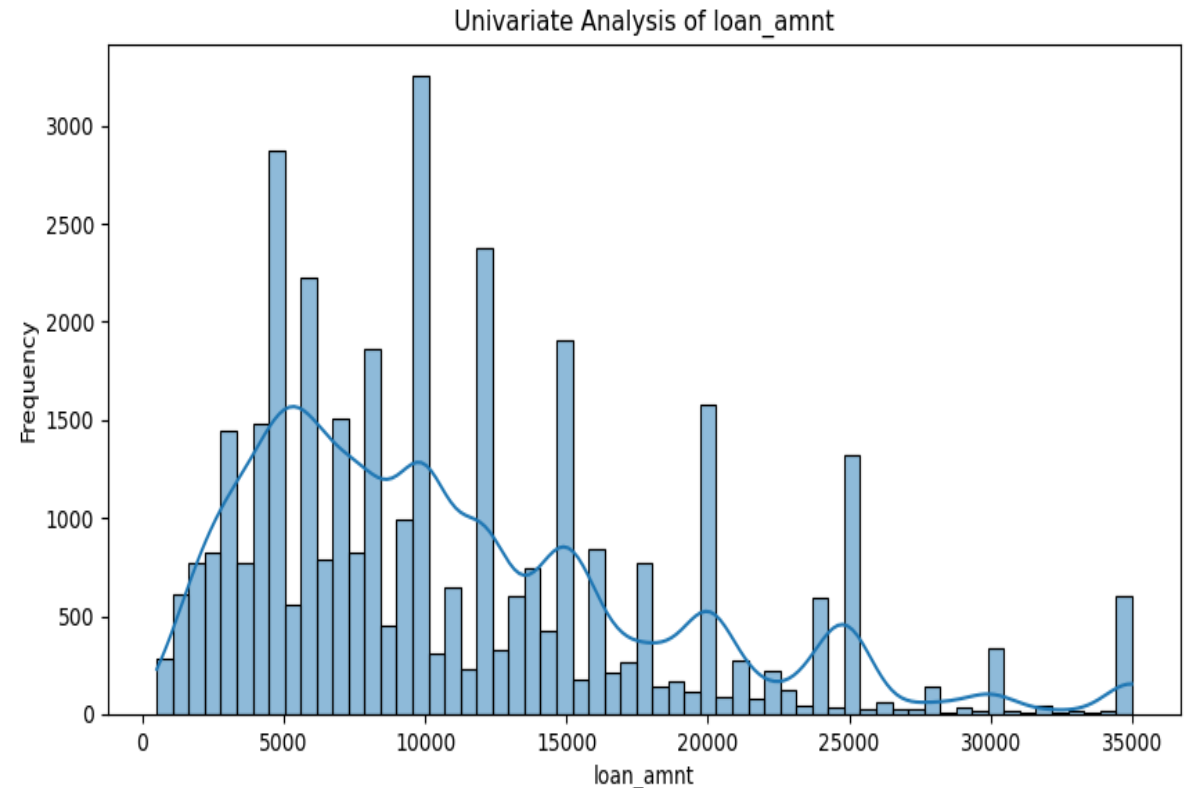• **Metric:** Type-Driven Metric
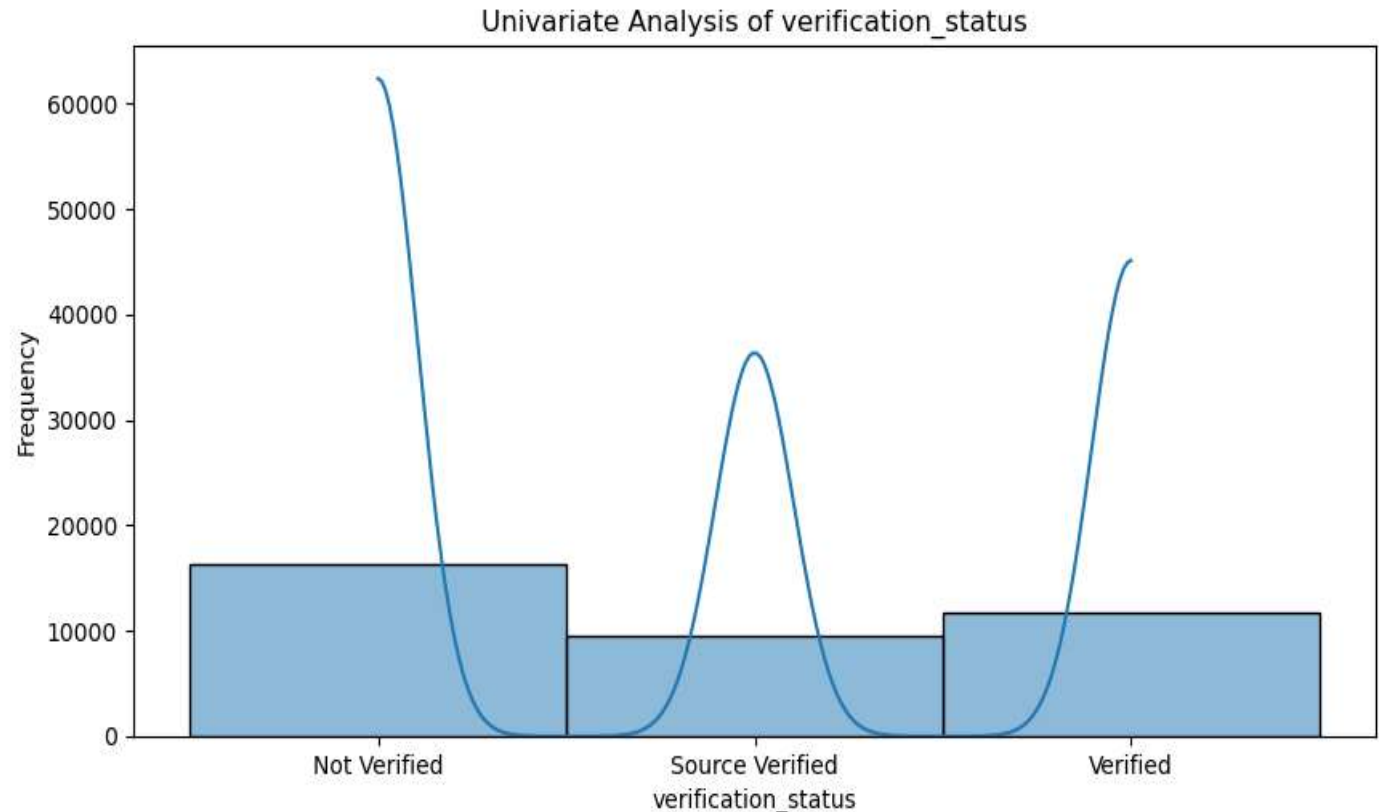
Univariate Analysis of dti

- This slide presents the univariate analysis of dti.
- **Conclusion:** DTI can be used to decide loan approval as it affects financial stability.
- **Metric:** Data-Driven Metric
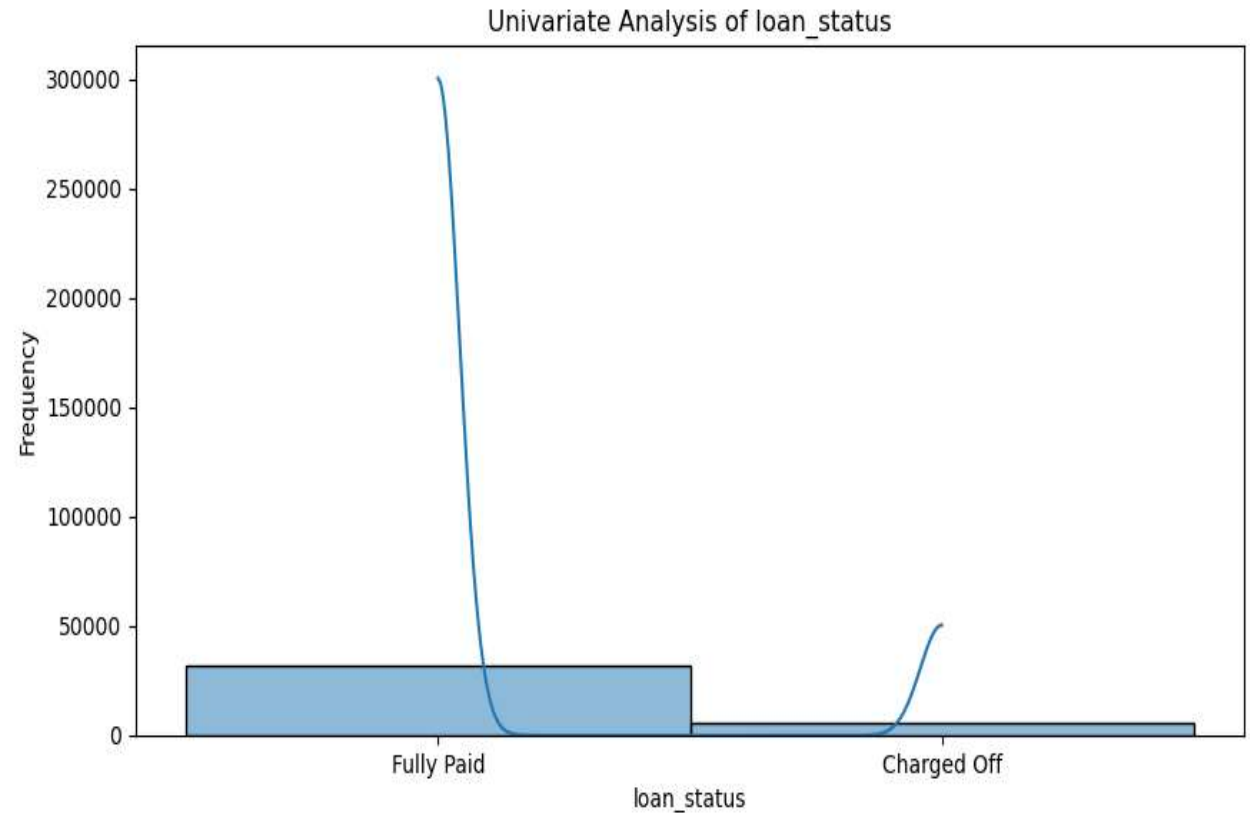

Univariate Analysis of dti

Univariate Analysis of loan_amnt

- This slide presents the univariate analysis of loan_amnt.
- **Conclusion:** Loan amount can be used to decide loan approval as it indicates borrowing needs.
- **Metric:** Data-Driven Metric
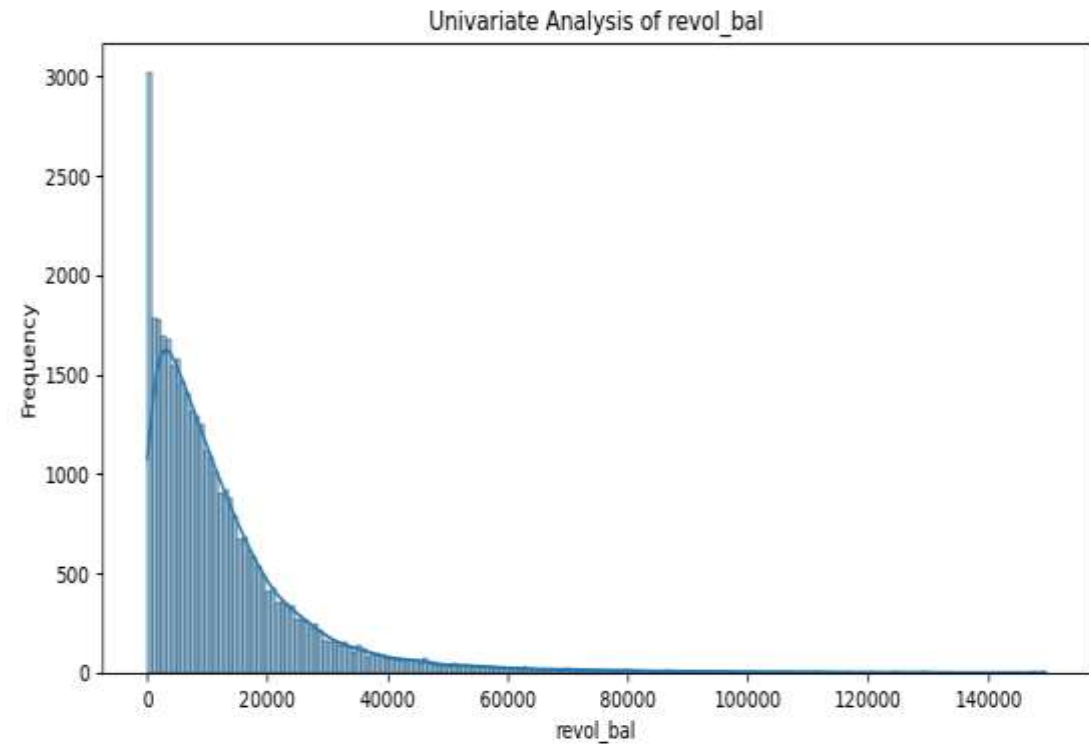

Univariate Analysis of loan_amnt

Univariate Analysis of loan_status

- This slide presents the univariate analysis of loan_status.
- **Conclusion:** Loan status provides useful insights but alone is not sufficient for loan approval.
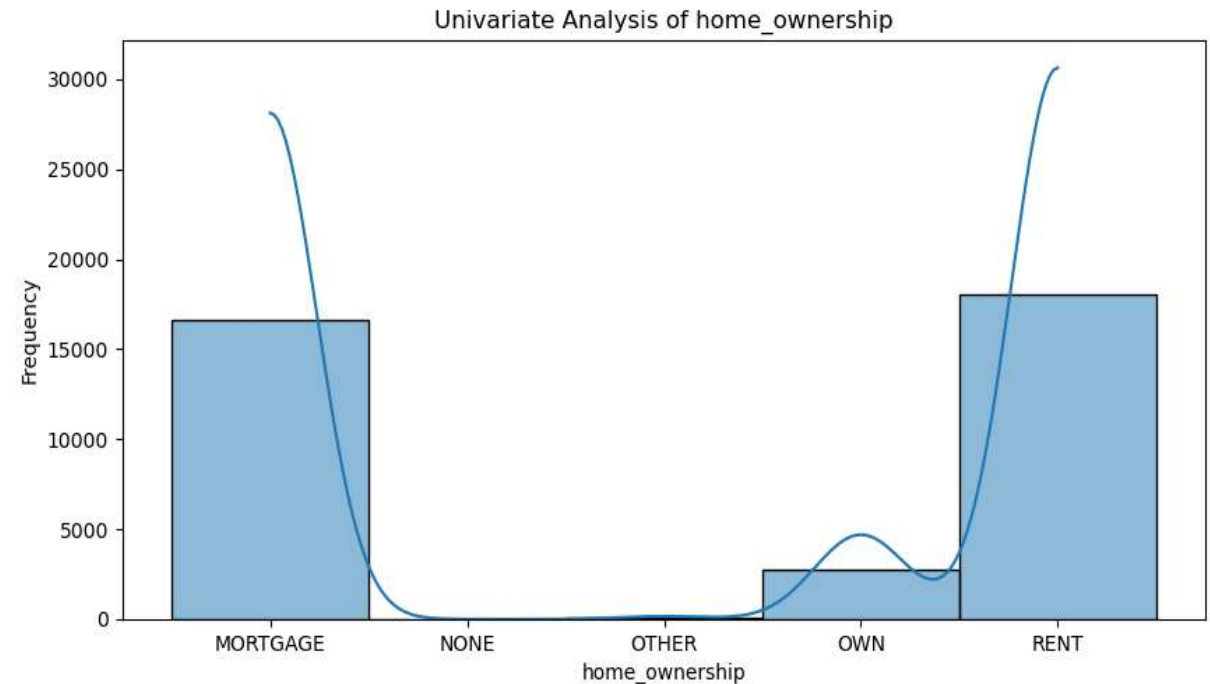- **Metric:** Type-Driven Metric

Univariate Analysis of revol_bal

• This slide presents the univariate analysis of revol_bal.
• **Conclusion:** Revolving balance can be used to decide loan approval as it shows existing debt.
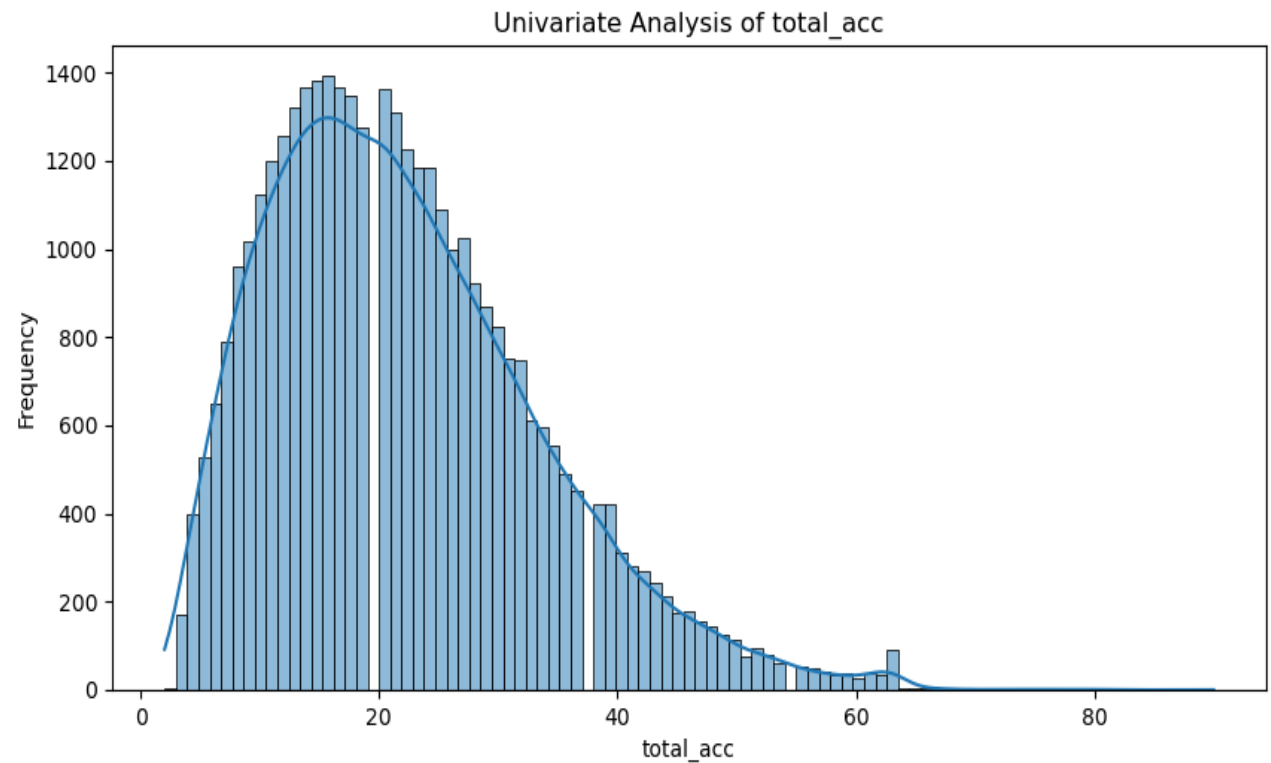• **Metric:** Data-Driven Metric

Univariate Analysis of home_ownership

- This slide presents the univariate analysis of home_ownership.
- **Conclusion:** Home ownership provides useful insights but alone is not sufficient for loan approval.
- **Metric:** Type-Driven Metric

Univariate Analysis of total_acc

• This slide presents the univariate analysis of total_acc.
• **Conclusion:** Total accounts can be used to decide loan approval as it reflects credit history.
• **Metric:** Data-Driven Metric
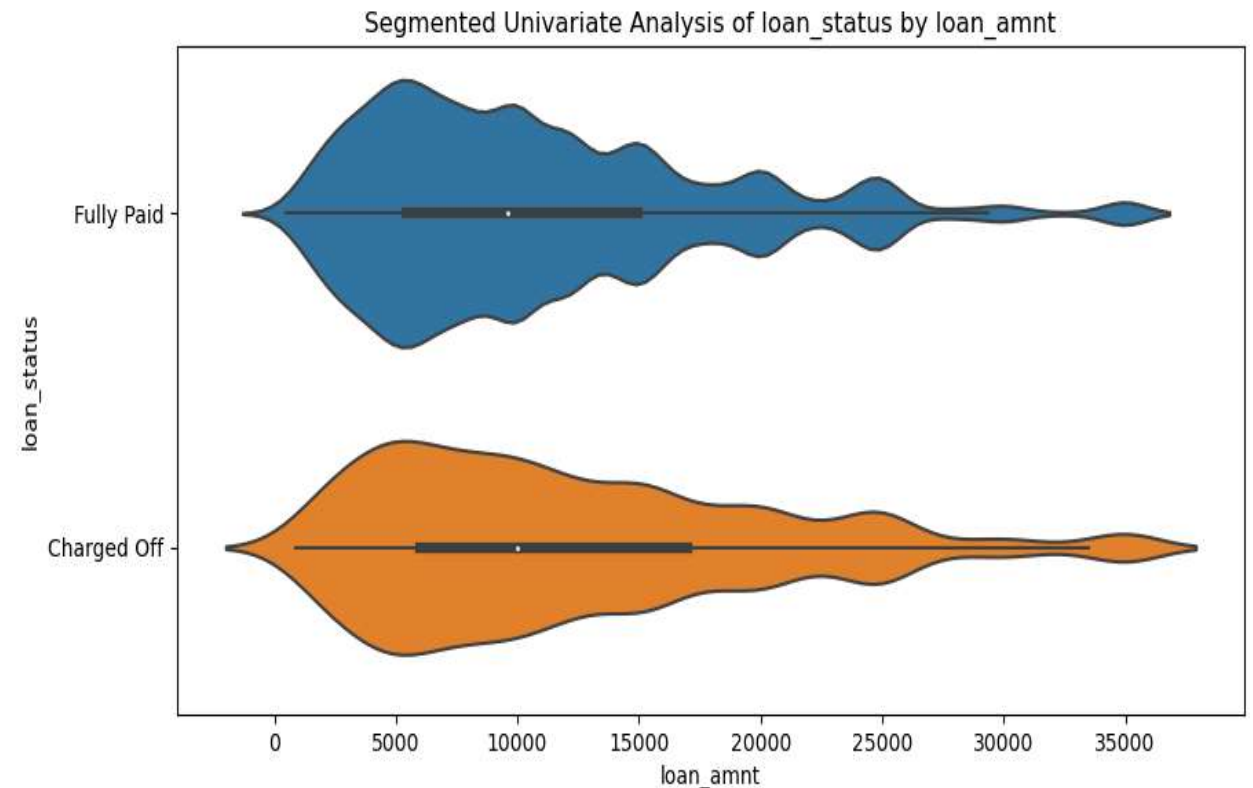

Univariate Analysis of total_acc

Segmented Univariate Analysis of loan_amnt by home_ownership

• This slide presents the segmented univariate analysis of loan_amnt by home_ownership.
• **Conclusion:** Loan amount segmented by home ownership provides insights into loan approval criteria.
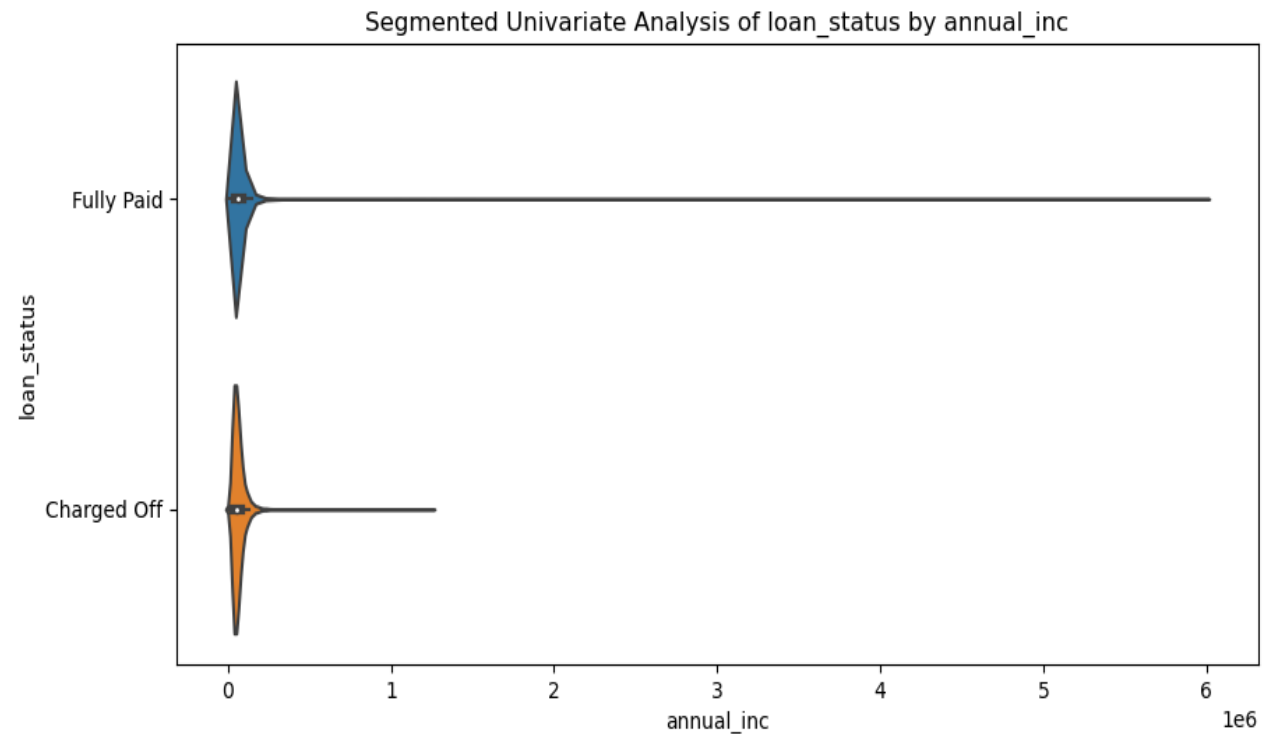• **Metric:** Data-Driven Metric
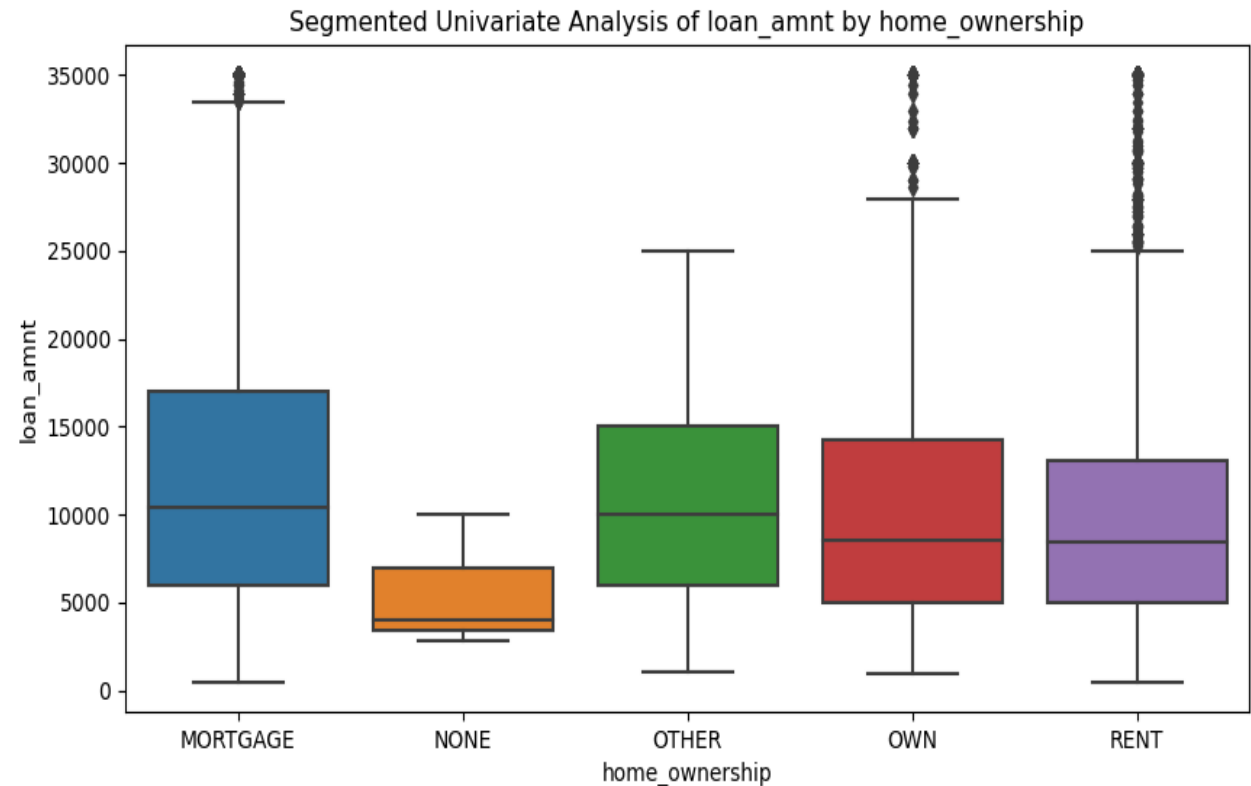
Segmented Univariate Analysis of loan_status by loan_amnt

- This slide presents the segmented univariate analysis of loan_status by loan_amnt.
- **Conclusion:** Loan status segmented by loan amount provides insights into loan approval criteria.
- **Metric:** Data-Driven Metric

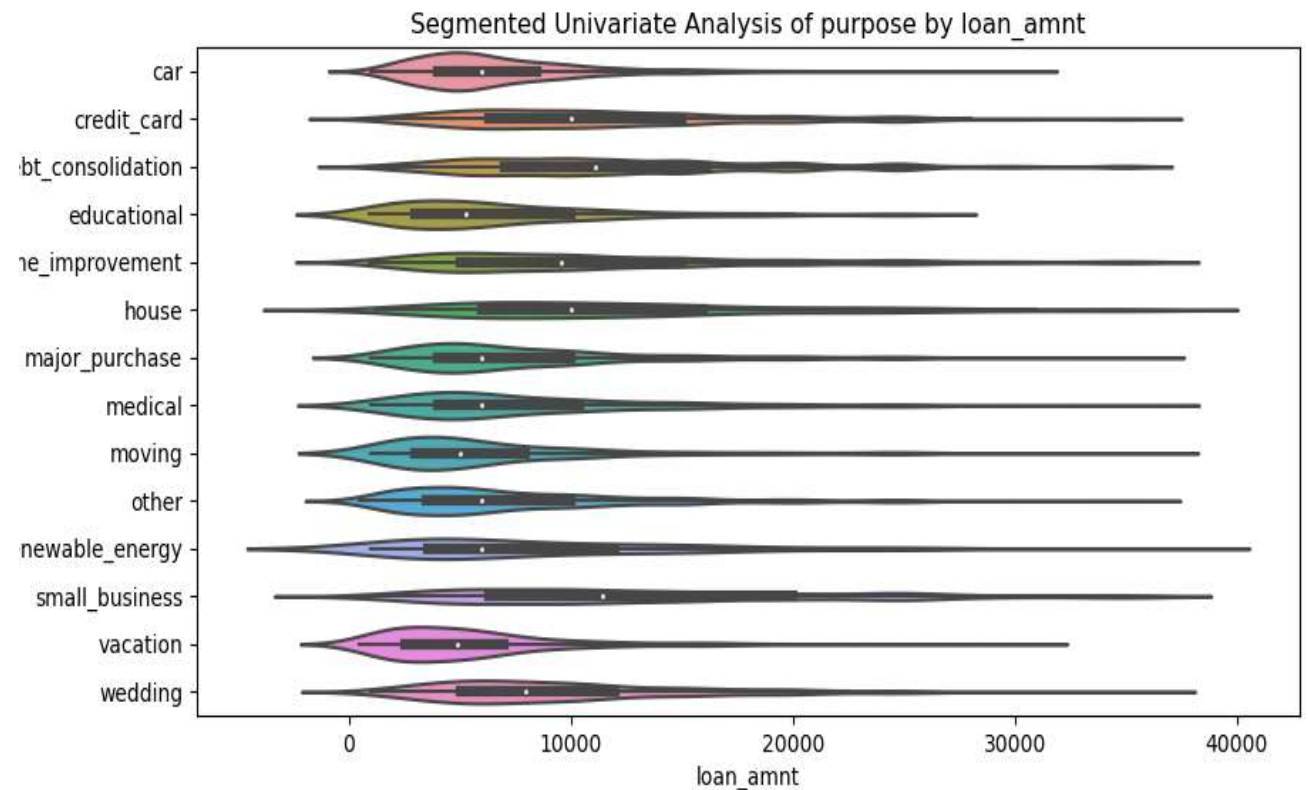Segmented Univariate Analysis of loan_status by loan_amnt

Segmented Univariate Analysis of loan_status by annual_inc

- This slide presents the segmented univariate analysis of loan_status by annual_inc.
- **Conclusion:** Loan status segmented by annual income provides insights into loan approval criteria.
- **Metric:** Data-Driven Metric

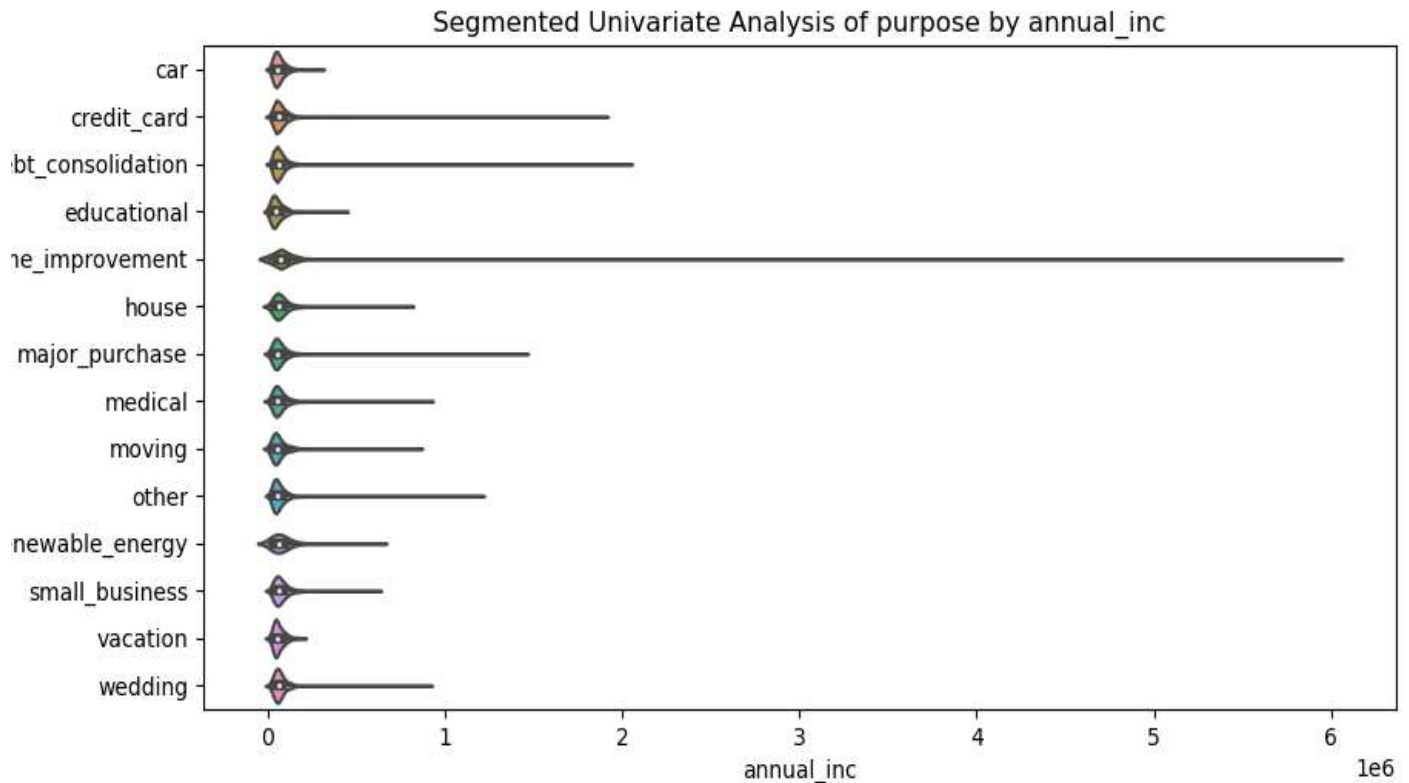Segmented Univariate Analysis of loan_status by annual_inc

Segmented Univariate Analysis of purpose by loan_amnt

- This slide presents the segmented univariate analysis of purpose by loan_amnt.
- **Conclusion:** Loan purpose segmented by loan amount provides insights into loan approval criteria.
- **Metric:** Data-Driven Metric

Segmented Univariate Analysis of purpose by loan_amnt

Segmented Univariate Analysis of purpose by annual_inc

- This slide presents the segmented univariate analysis of purpose by annual_inc.
- **Conclusion:** Loan purpose segmented by annual income provides insights into loan approval criteria.
- **Metric:** Data-Driven Metric

Segmented Univariate Analysis of annual_inc by emp_length

- This slide presents the segmented univariate analysis of annual_inc by emp_length.
- **Conclusion:** Annual income segmented by employment length provides insights into loan approval criteria.
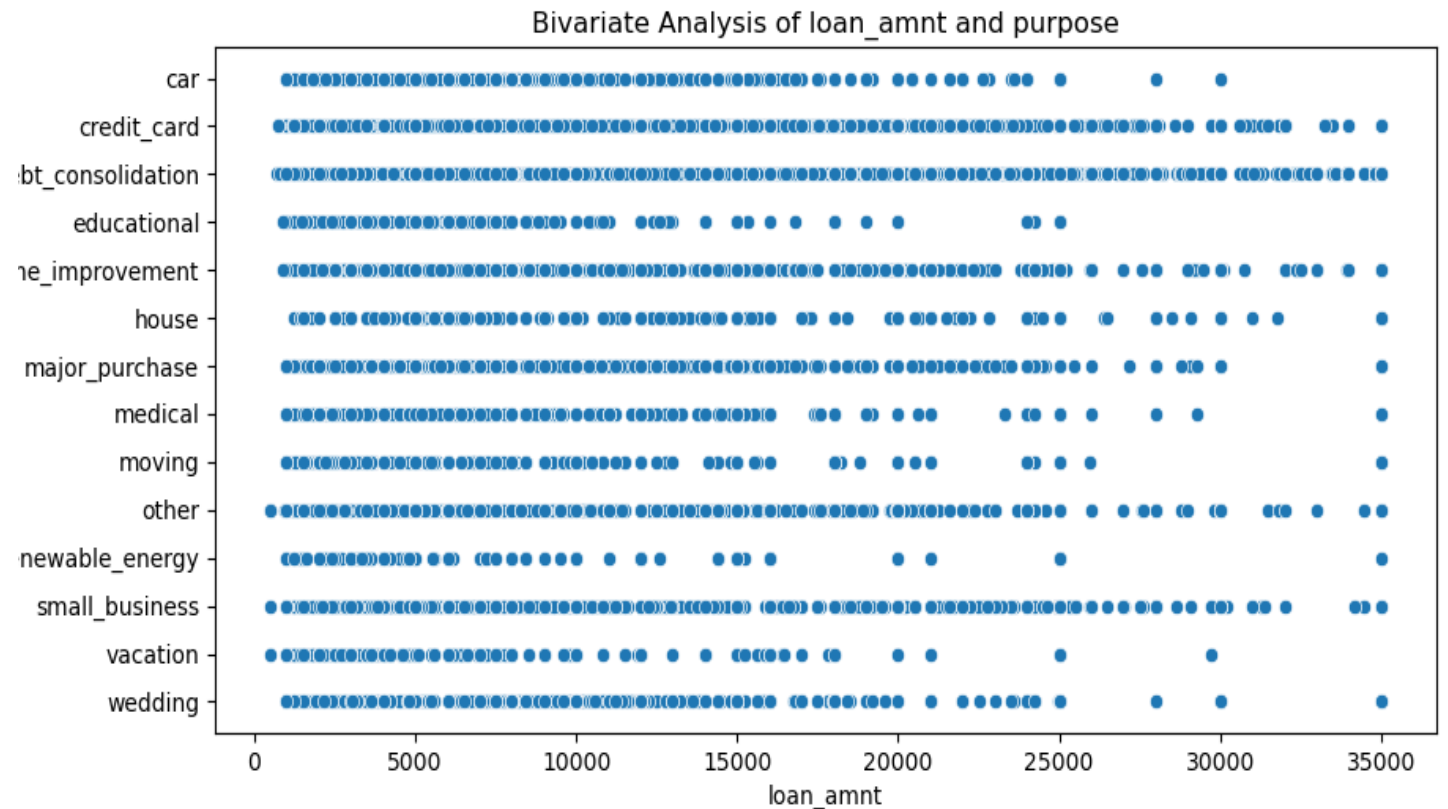- **Metric:** Data-Driven Metric
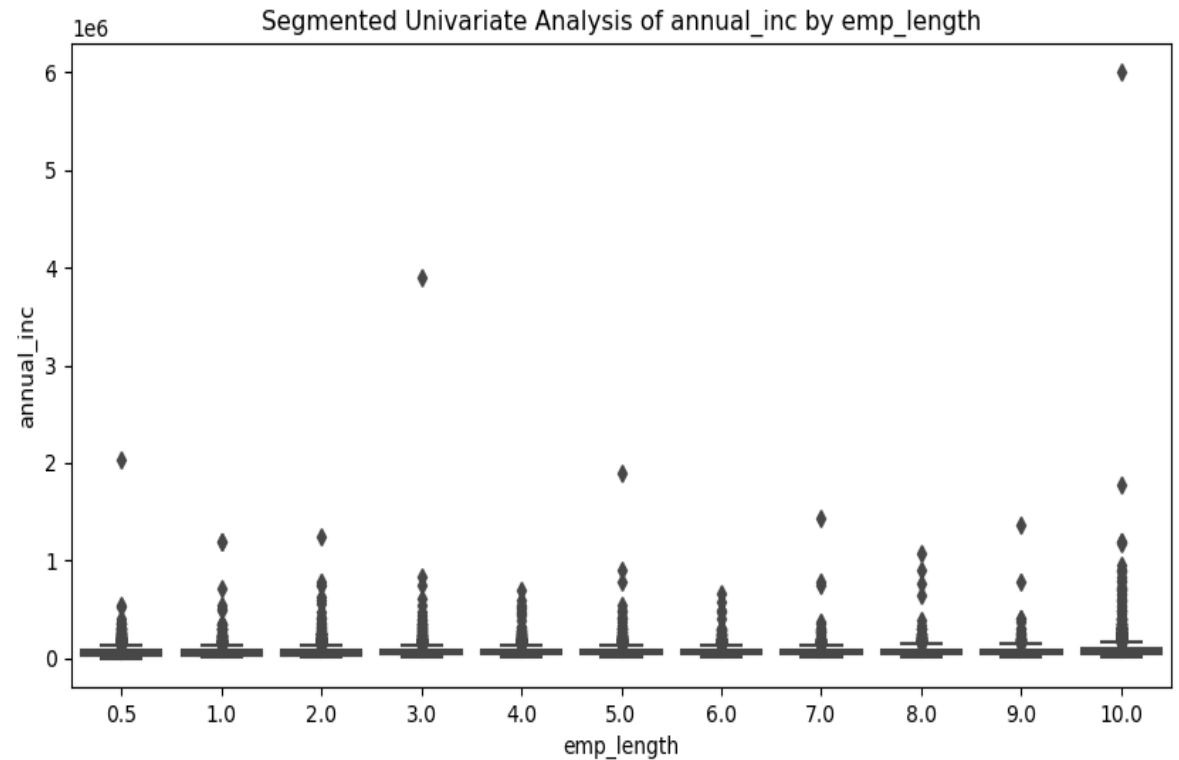
Bivariate Analysis of loan_status and loan_amnt

- This slide presents the bivariate analysis of loan_status and loan_amnt.
- **Conclusion:** The relationship between loan status and loan amount can guide loan approval decisions.
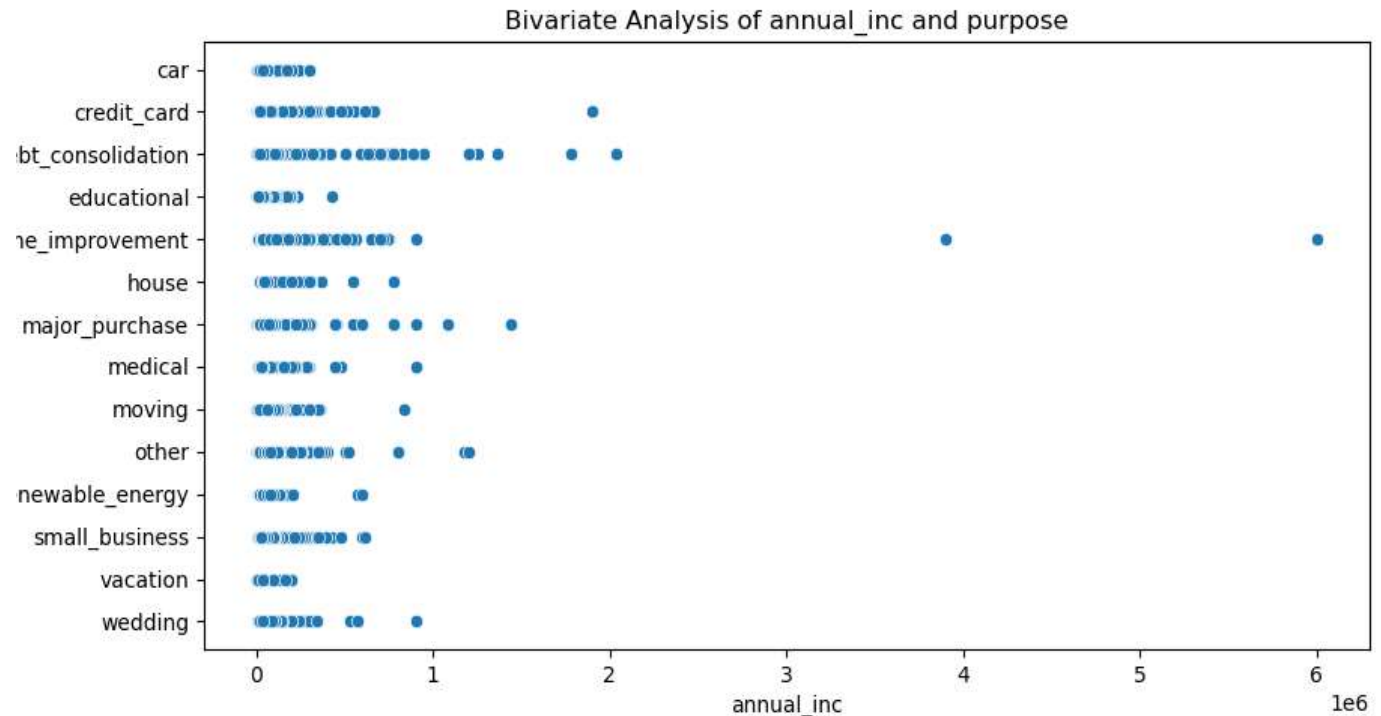- **Metric:** Business-Driven Metric

Bivariate Analysis of loan_status and loan_amnt
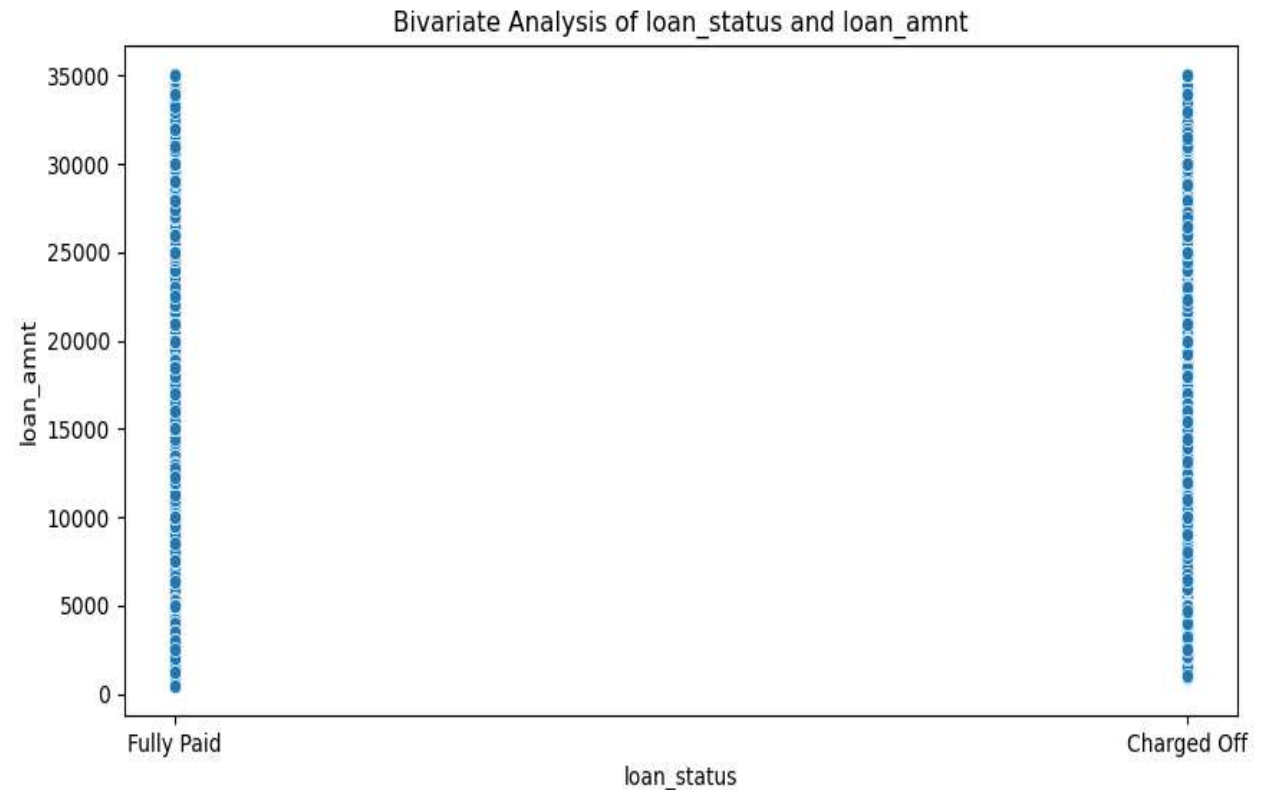
Bivariate Analysis of loan_amnt and purpose

• This slide presents the bivariate analysis of loan_amnt and purpose.

• **Conclusion:** The relationship between loan amount and purpose provides useful insights but is not definitive for loan approval.

• **Metric:** Type-Driven Metric

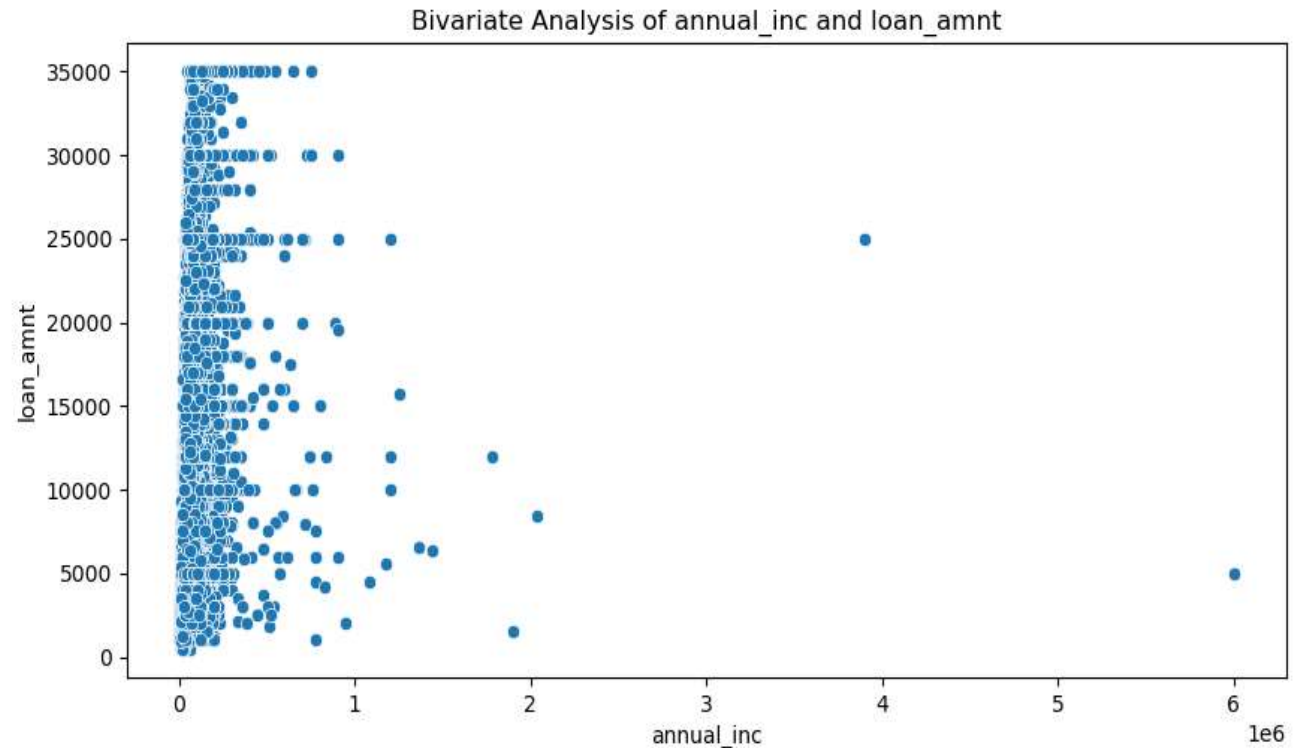Bivariate Analysis of loan_amnt and purpose

Bivariate Analysis of annual_inc and purpose

- This slide presents the bivariate analysis of annual_inc and purpose.
- **Conclusion:** The relationship between annual income and purpose provides useful insights but is not definitive for loan approval.
- **Metric:** Type-Driven Metric

Bivariate Analysis of annual_inc and purpose

Bivariate Analysis of annual_inc and loan_amnt

- This slide presents the bivariate analysis of annual_inc and loan_amnt.
- **Conclusion:** The relationship between annual income and loan amount can guide loan approval decisions.
- **Metric:** Business-Driven Metric

Bivariate Analysis of dti and annual_inc

- This slide presents the bivariate analysis of dti and annual_inc.
- **Conclusion:** The relationship between DTI and annual income can guide loan approval decisions.
- **Metric:** Business-Driven Metric
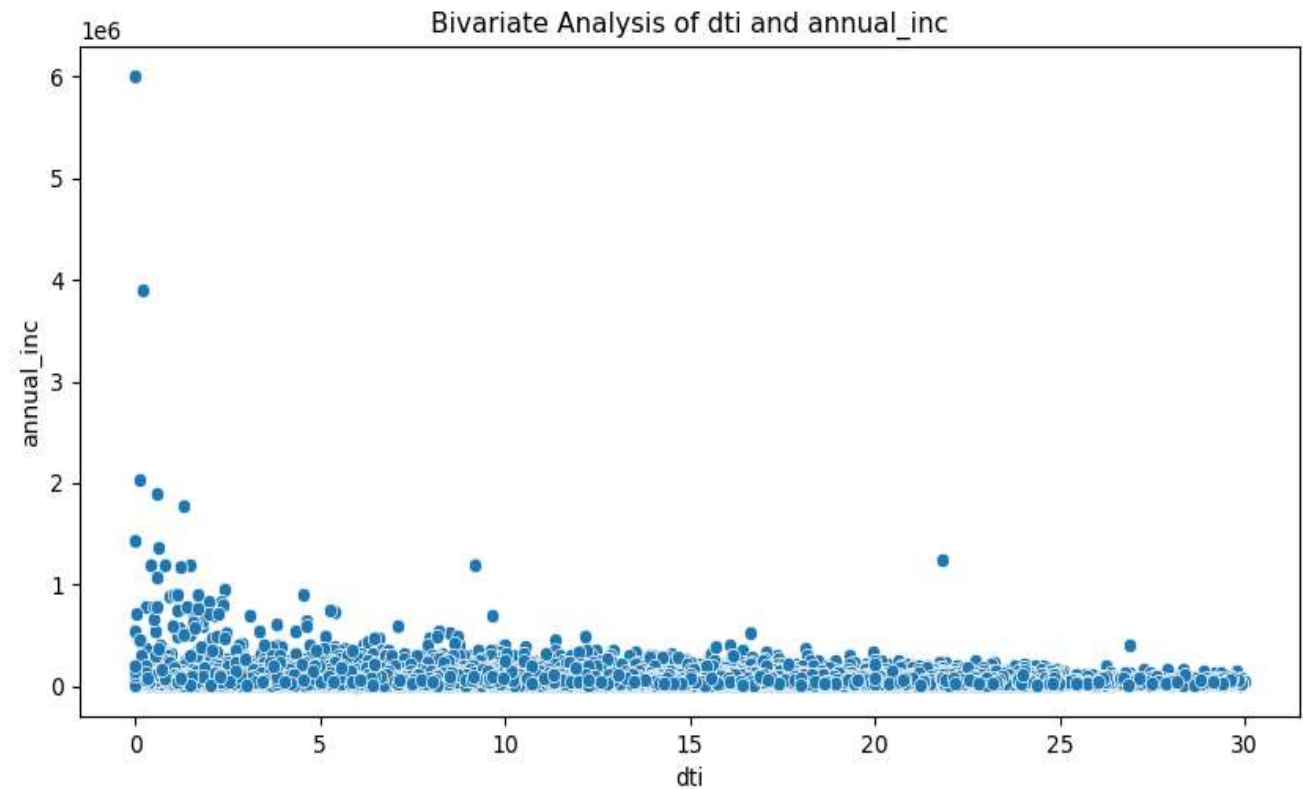
Bivariate Analysis of funded_amnt and revol_bal

• This slide presents the bivariate analysis of funded_amnt and revol_bal.
• **Conclusion:** The relationship between funded amount and revolving balance provides useful insights but is not definitive for loan approval.
• **Metric:** Type-Driven Metric

Bivariate Analysis of funded_amnt and revol_bal
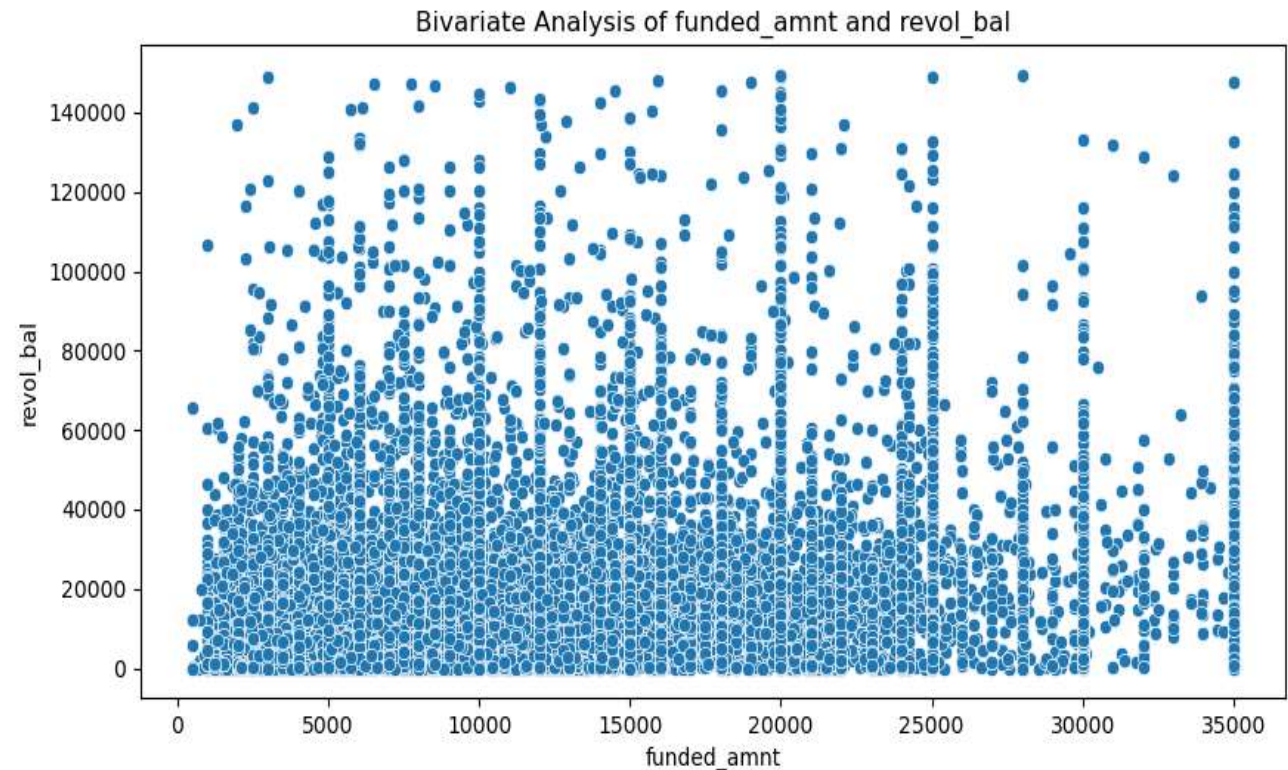
Conclusion

- We have observed each graph and patterns
- We have collected insight based on each graph and derived conclusion against each attribute used for analysis
- Type driven metrics alone are not useful and not definitive in identifying if loan can be risky or not
- Data driven and business driven metrics work best when coupled with other attributes

Thank you

References:
1. Dataset and dictionary provided in case study
2. EDA Module