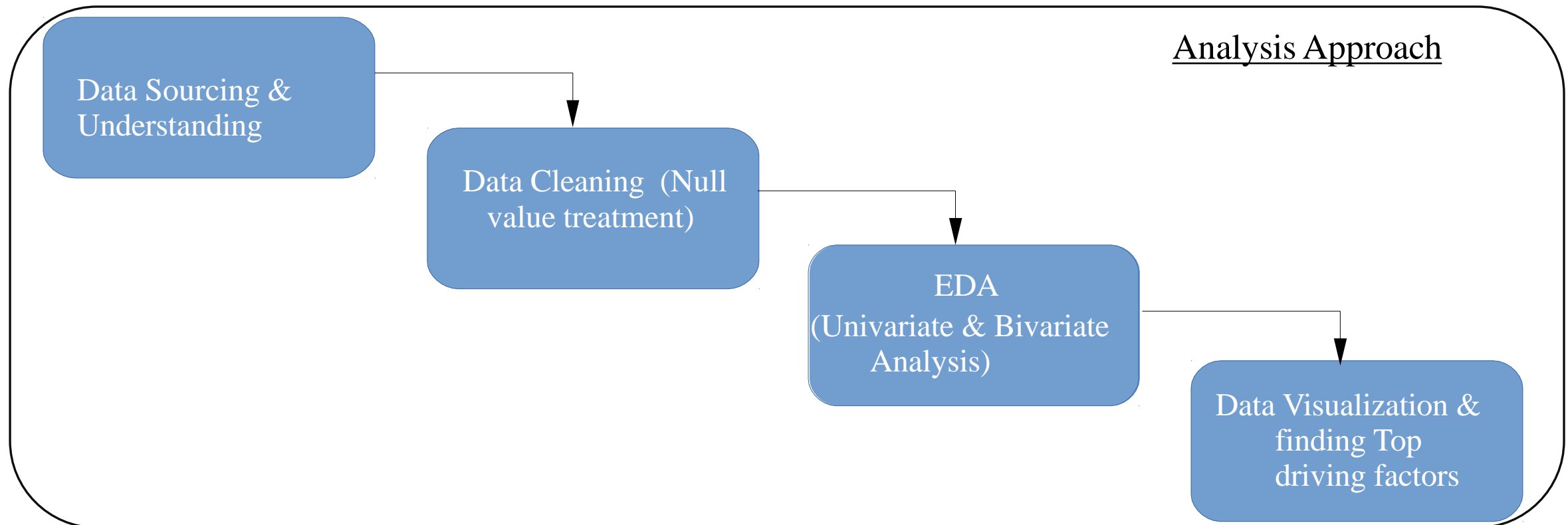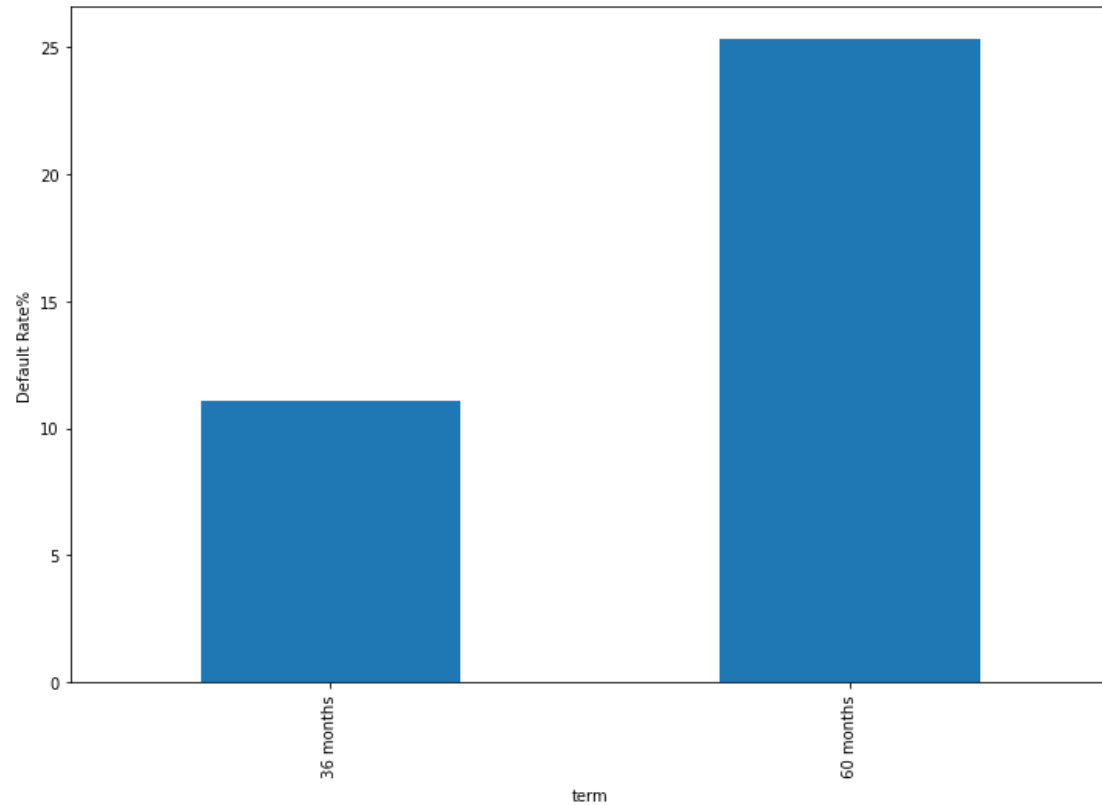# GROUP CLUB CASE STUDY SUBMISSION

Group Members

Parikshit Singh Tomar – Group Facilatator
Gunjan Bhogal

Objective :

- Understanding risk Analysis for financial and banking services.
- How to minimize the risk of losing money while lending money to customers.
- Identify pattern in defaulters(applicants) those are not likely to pay the loan.
- Understand the driving factors (or driver variables) behind loan default, i.e. the variables which are strong indicators of default.
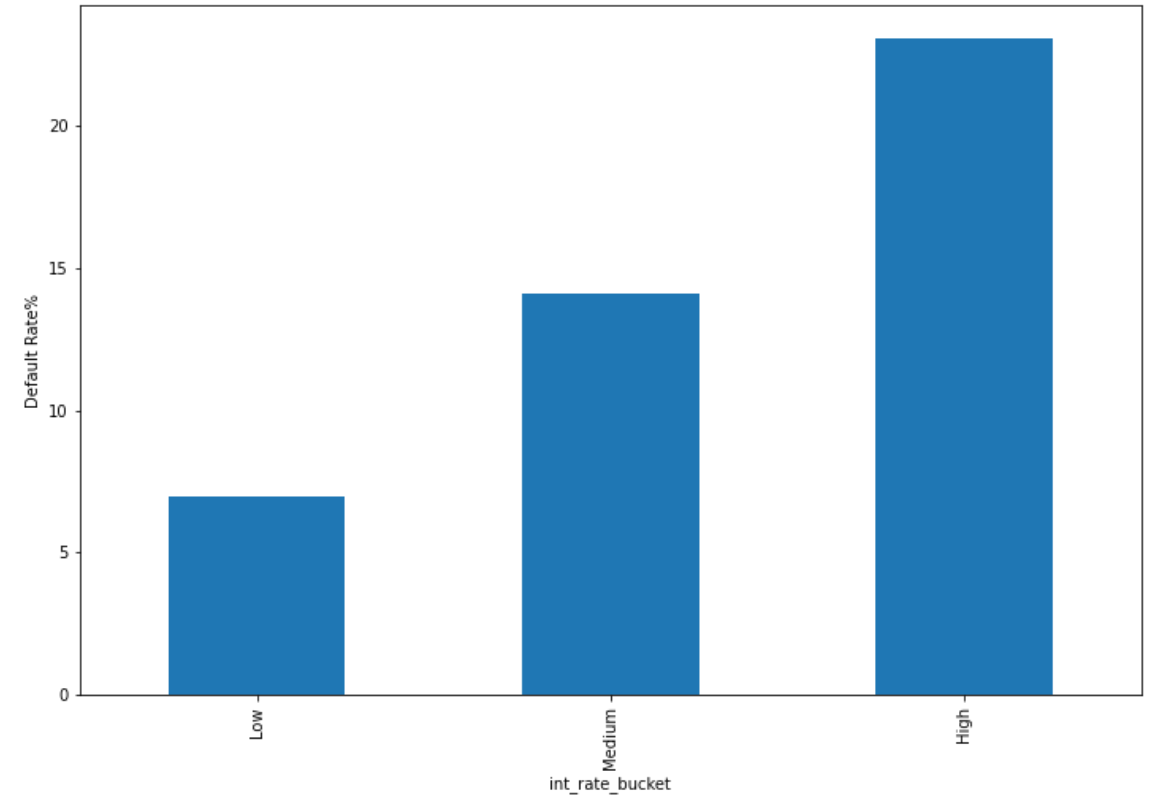

Analysis Approach

Data Sourcing & Understanding

Data Cleaning (Null value treatment)

EDA (Univariate & Bivariate Analysis)

Data Visualization & finding Top driving factors

Defaulters Analysis w.r.t one variable at a time
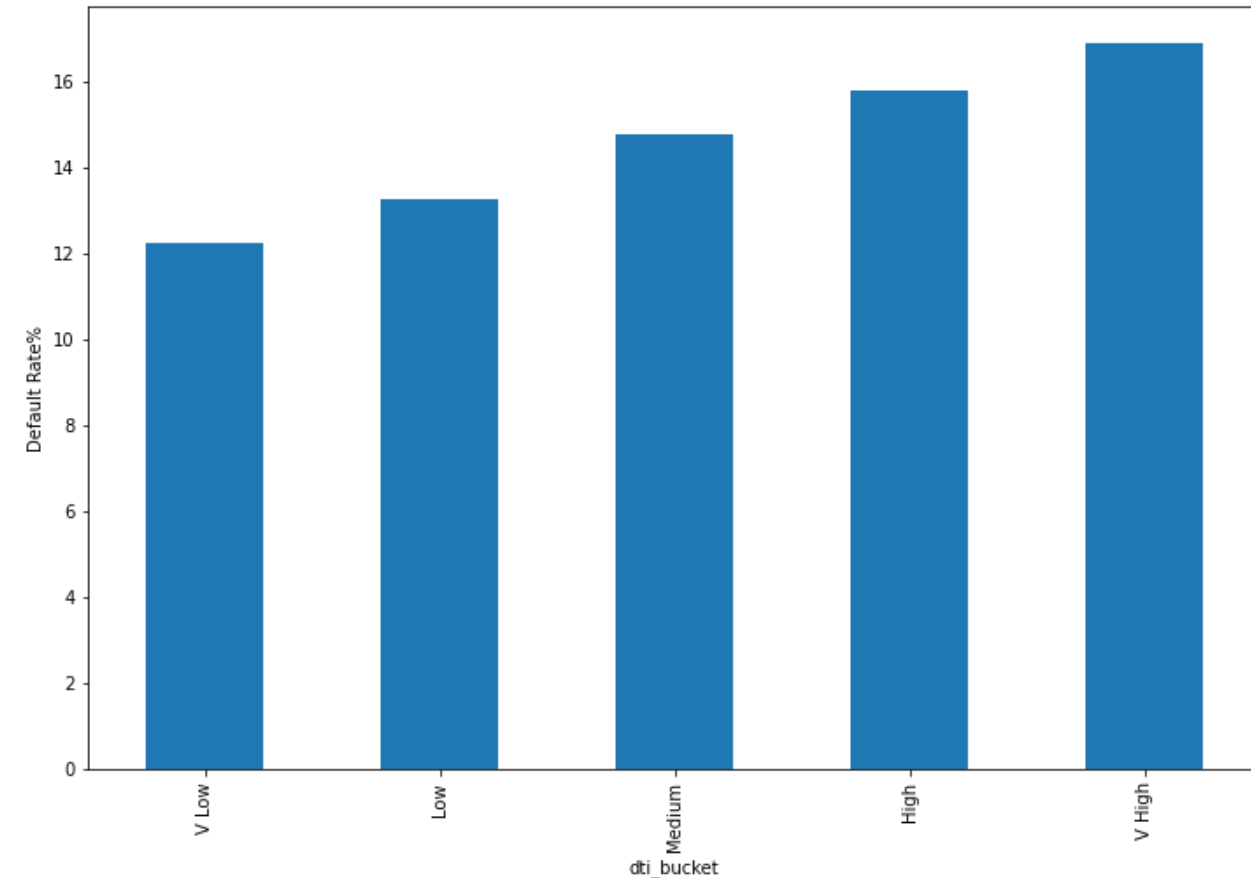

Graph 1 shows the Default Rate% w.r.t 'Term'
- People opting for long terms(60 months) are more likely to be defaulters

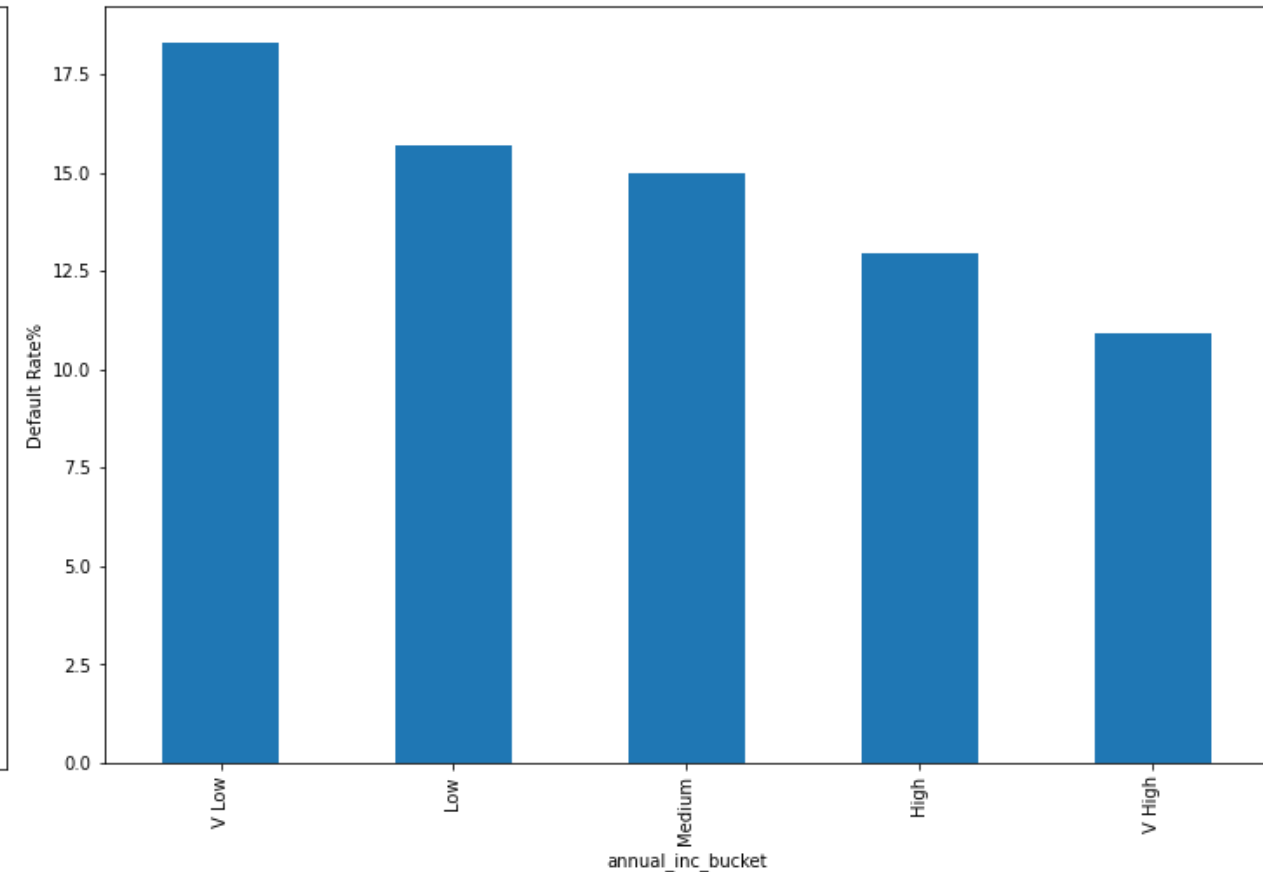**Graph 2** shows the Default Rate% w.r.t 'Interest Rate'
- People with High Interest Rates are more likely to be defaulters

Defaulters Analysis w.r.t one variable at a time

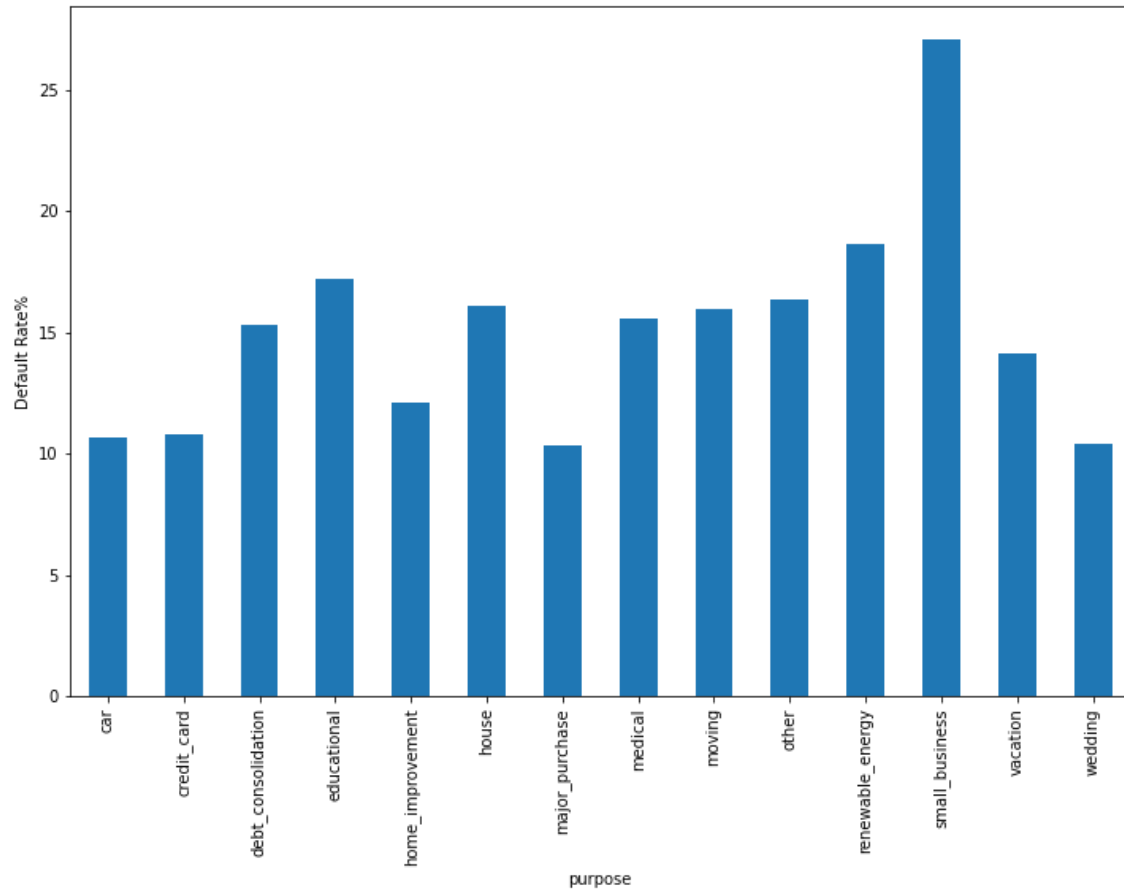**Graph 3** shows the Default Rate% w.r.t 'Debt to Income'
- People with very High/High 'Debt to Income' are more likely to be defaulters.
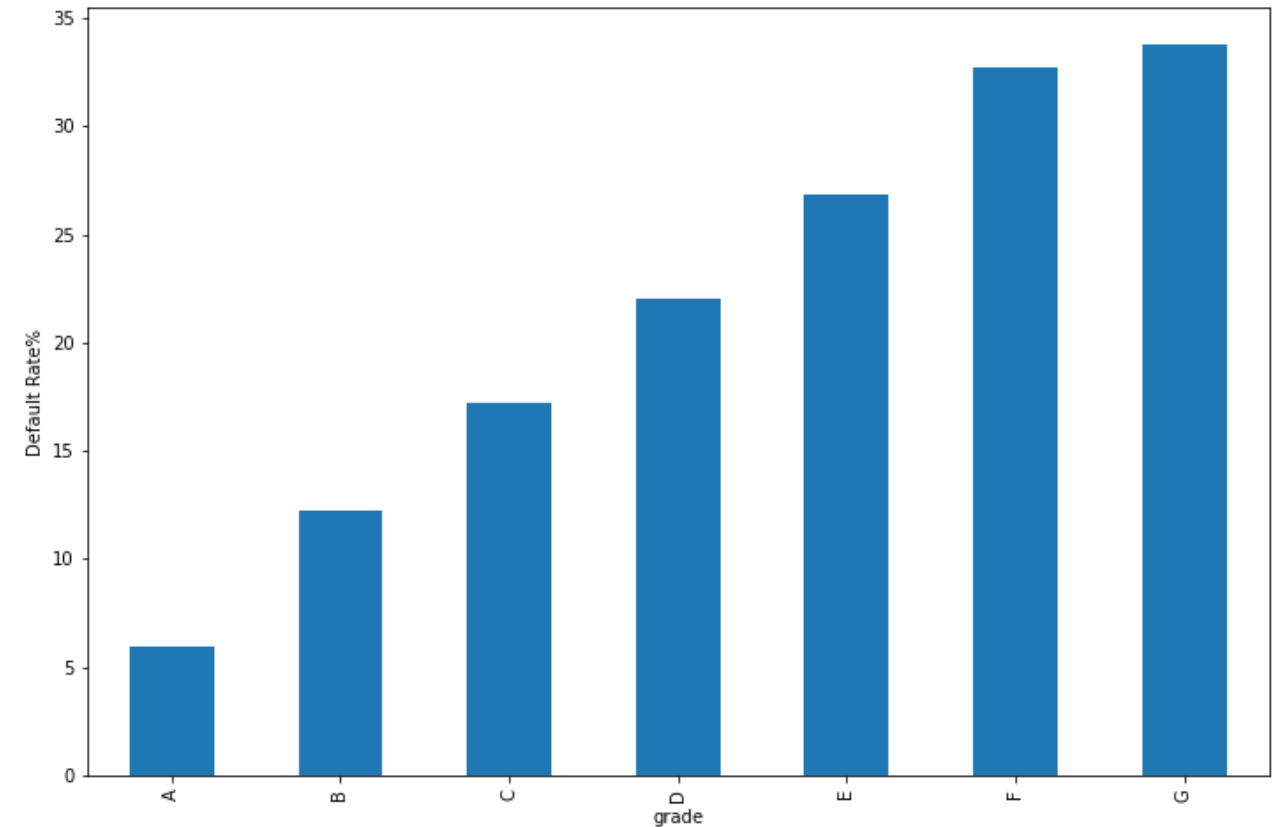
Graph 4 shows the Default Rate% w.r.t 'Grade'
- People with very Low/Low 'Income' are more likely to be defaulters.

Defaulters Analysis w.r.t one variable at a time
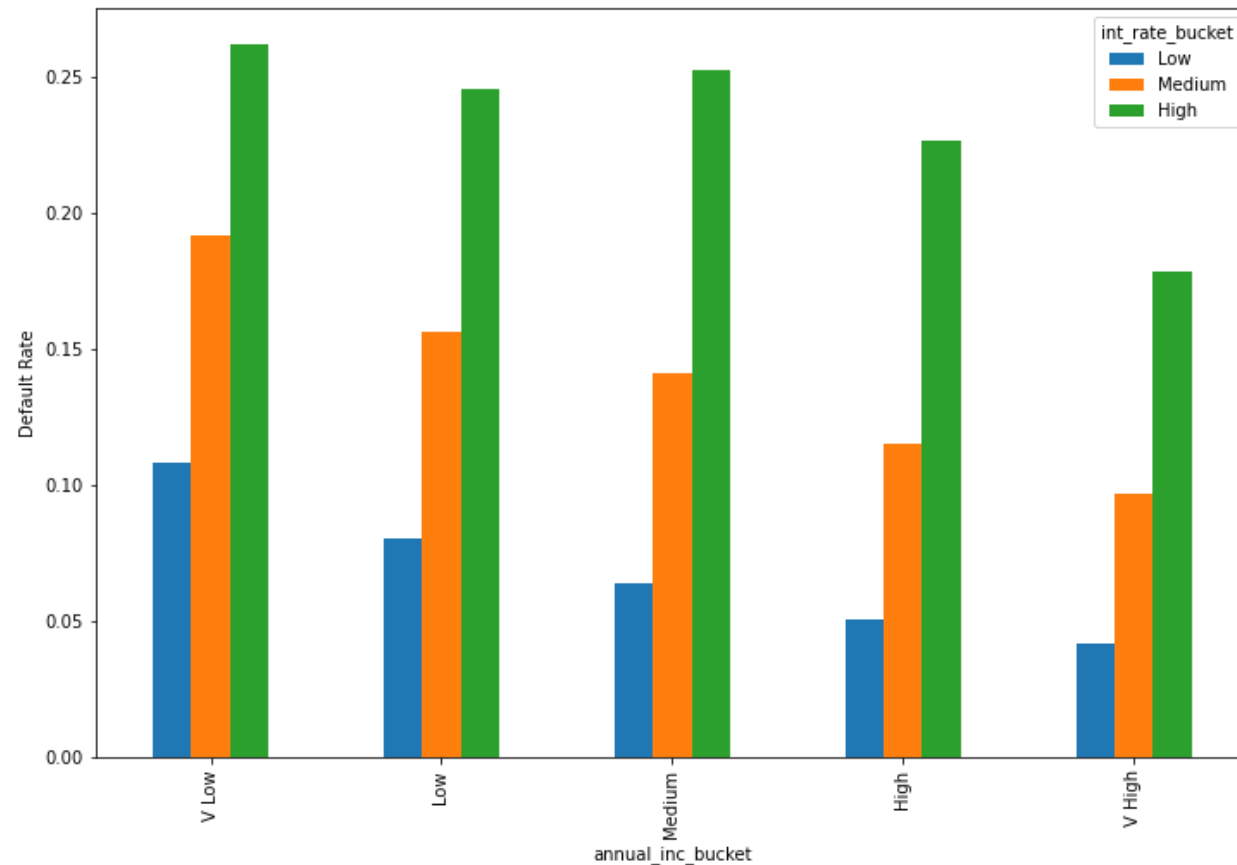

Graph 5 shows the Default Rate% w.r.t 'Purpose of Loan'
- Found that people opting loan for 'small_business' are more likely to be defaulters
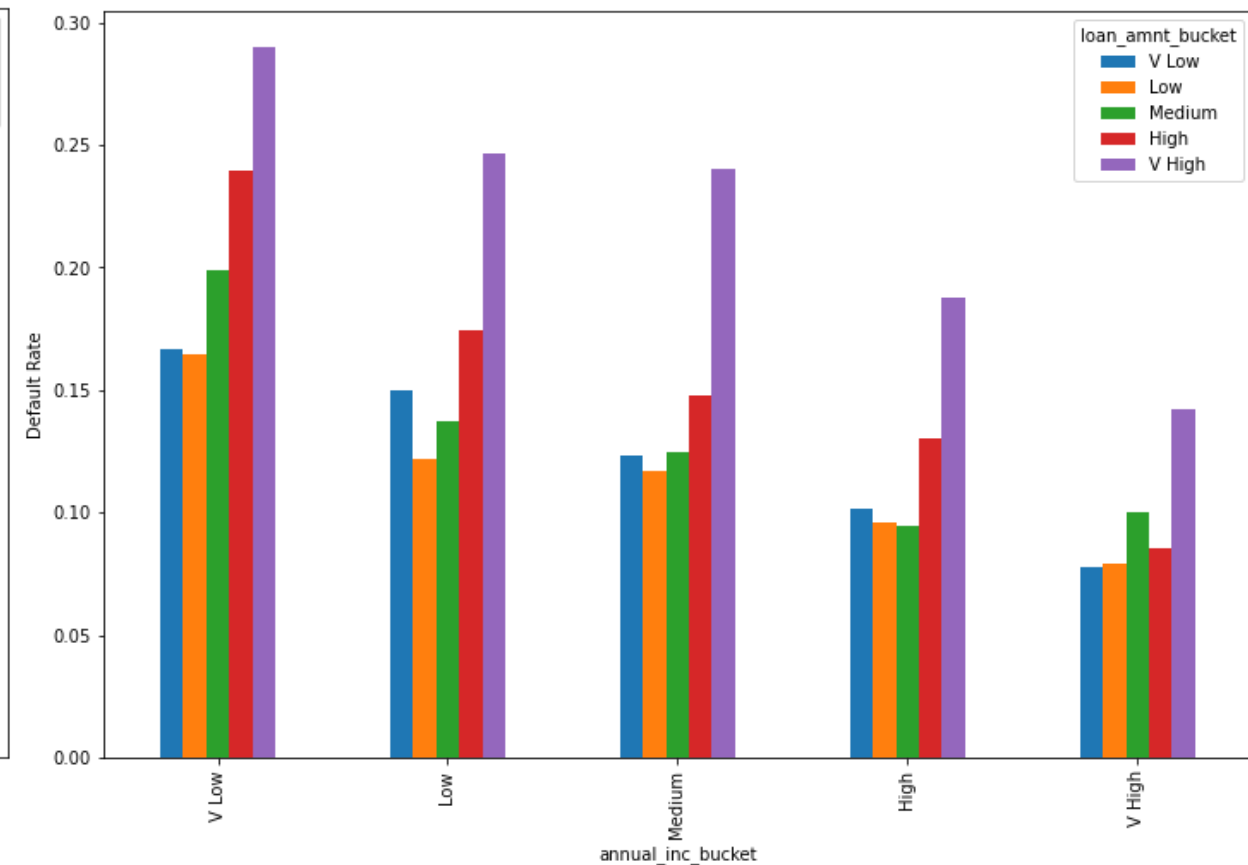
Graph 6 shows the Default Rate% w.r.t 'Grade'
- Found that people with 'F' and 'G' grades are more likely to be defaulters

Defaulters Analysis w.r.t two variables at a time

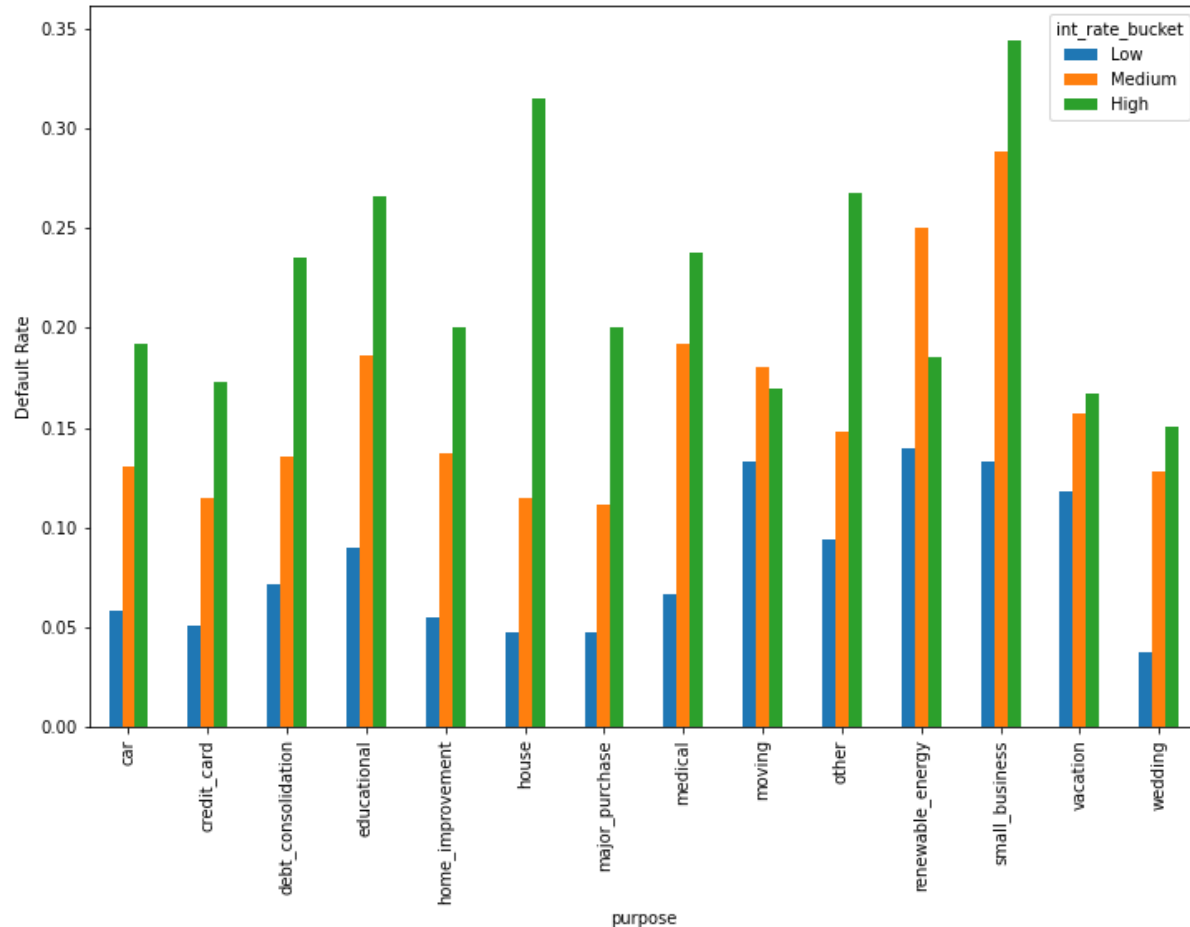**Graph 1** shows the Default Rate w.r.t 'annual_inc' & 'int_rate'
- People with **Low** Annual Income & **High** Interest Rates are more likely to be defaulters

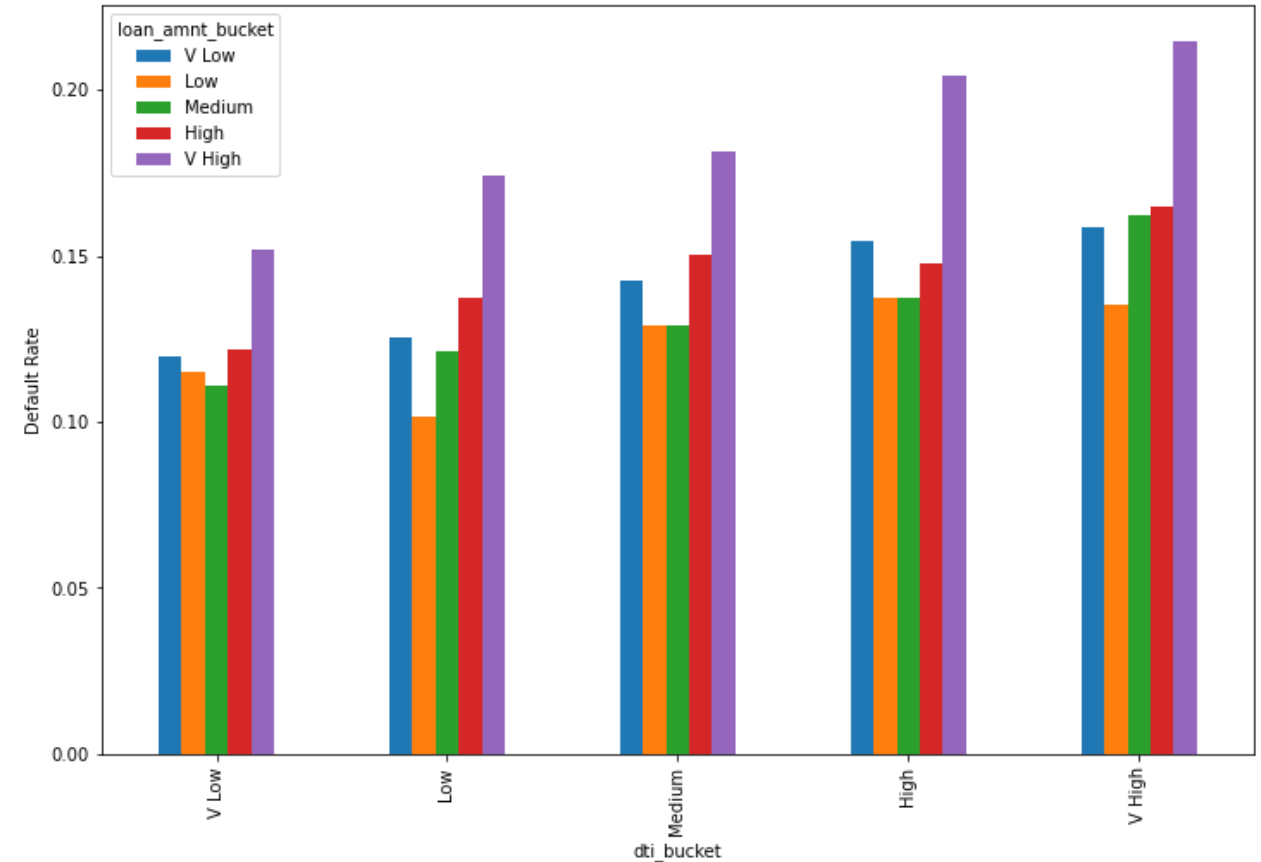**Graph 2** shows the Default Rate w.r.t 'annual_inc' and 'loan_amnt'
- People with **Low** Annual Income opting for **High** loan amount are more likely to be defaulters

Defaulters Analysis w.r.t two variables at a time

Graph 3 shows the Default Rate w.r.t 'Purpose' & 'int_rate'
- People opting loan for 'small_business' & 'house' with High Interest Rates are more likely to be defaulters

Graph 4 shows the Default Rate w.r.t 'loan_amnt' and 'dti'
- People with High-very High 'Debt to Income' opting for Higher loan amount are likely to default

Conclusion

With our analysis we found out the most driving factors that can let Lending Club know the applicants at the time of application submission that are not likely to pay the loan.

These driving factors are **Interest Rate, Debt to Income, Loan Amount, Annual Income, Purpose**.

Some of the insights are:

- People with Low Income applying for High Loan Amount are more likely to Default. Lending Club should put some cap on loan amounts according to annual salary earned by the applicant.

- People opting loan for '**House**' or **'Small Business**' with high Interest Rates are more likely to be defaulters.

- People with High Debt to Income are more likely to be Charged-Off.