

# Q4 2018 United States Loan Data (Lending Club)

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TEAM GRYFFINDOR:

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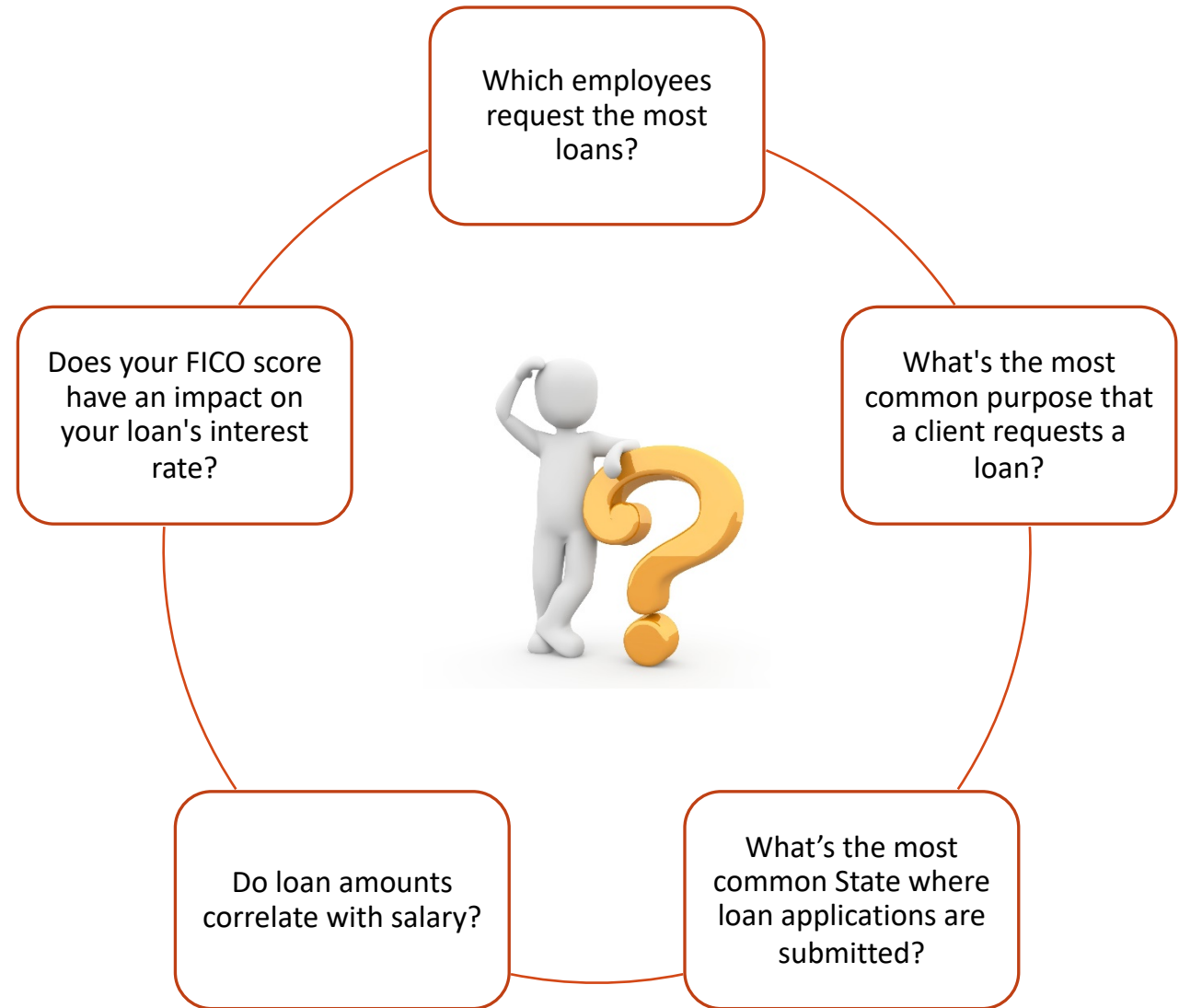
## Background



Founded in 1998, Lending Club is the largest marketplace connecting borrowers with investors and helping them with personal loans, business loans, financing for medical procedures, and K-12 education. It's a win-win situation because they (borrowers) may achieve cheaper lending rates and more significant investment returns for investors.

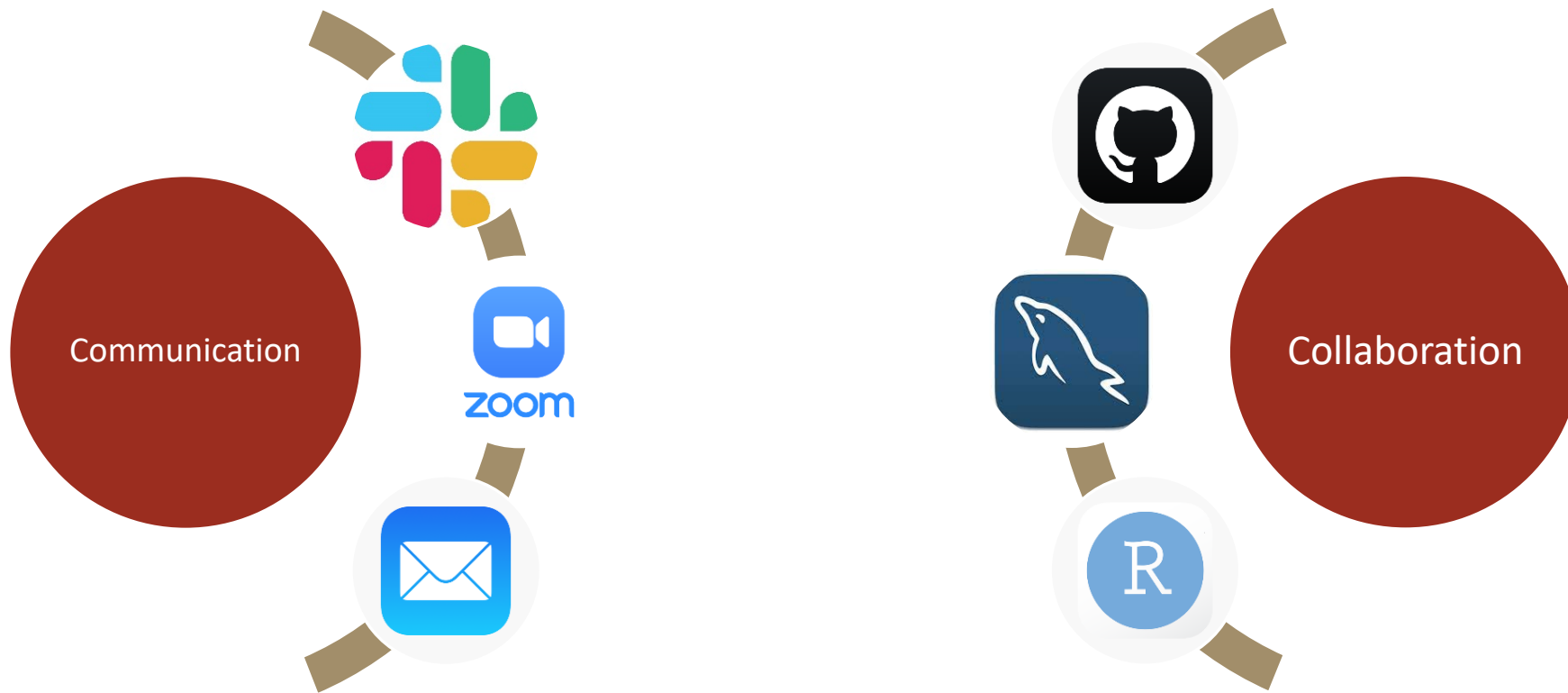
# Scope

*Q4 2018 Accepted Loans*



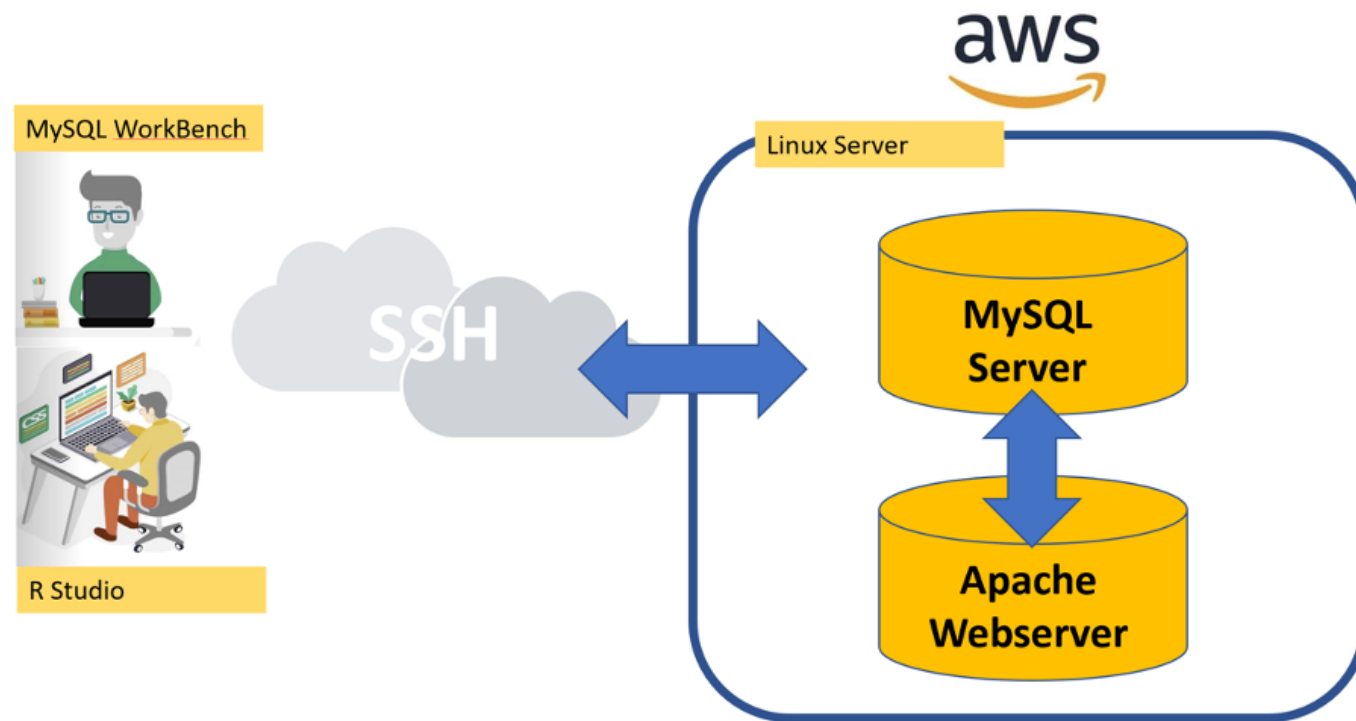
# Communication & Collaboration

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# General Setup

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# Data

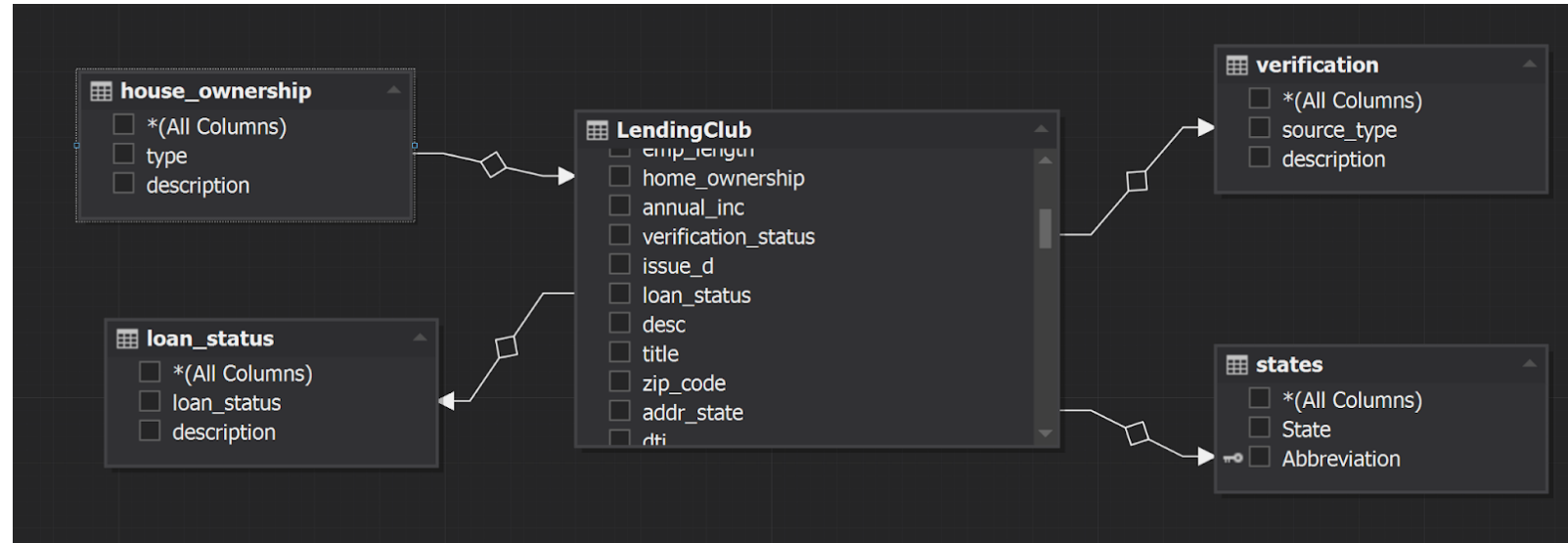
	id	member_id	loan_amnt	funded_amnt	funded_amnt_inv	term	int_rate	installment	grade	sub_gra
1	68407277	NA	3600	3600	3600	36 months	13.99	123.03	C	C4
2	68355089	NA	24700	24700	24700	36 months	11.99	820.28	C	C1
3	68341763	NA	20000	20000	20000	60 months	10.78	432.66	B	B4
4	66310712	NA	35000	35000	35000	60 months	14.85	829.90	C	C5
5	68476807	NA	10400	10400	10400	60 months	22.45	289.91	F	F1
6	68426831	NA	11950	11950	11950	36 months	13.44	405.18	C	C3
7	68476668	NA	20000	20000	20000	36 months	9.17	637.58	B	B2
8	67275481	NA	20000	20000	20000	36 months	8.49	631.26	B	B1
9	68466926	NA	10000	10000	10000	36 months	6.49	306.45	A	A2
10	68616873	NA	8000	8000	8000	36 months	11.48	263.74	B	B5
11	68356421	NA	22400	22400	22400	60 months	12.88	508.30	C	C2
12	68426545	NA	16000	16000	16000	60 months	12.88	363.07	C	C2
13	68338832	NA	1400	1400	1400	36 months	12.88	47.10	C	C2
14	66624733	NA	18000	18000	18000	60 months	19.48	471.70	E	E2
15	68466961	NA	28000	28000	28000	36 months	6.49	858.05	A	A2
16	68354783	NA	9600	9600	9600	36 months	7.49	298.58	A	A4
17	68466916	NA	25000	25000	25000	36 months	7.49	777.55	A	A4

Showing 1 to 16 of 2,260,701 entries, 151 total columns



# Database

- Data tables were related in MySQL Workbench into one parent table, LendingClub:



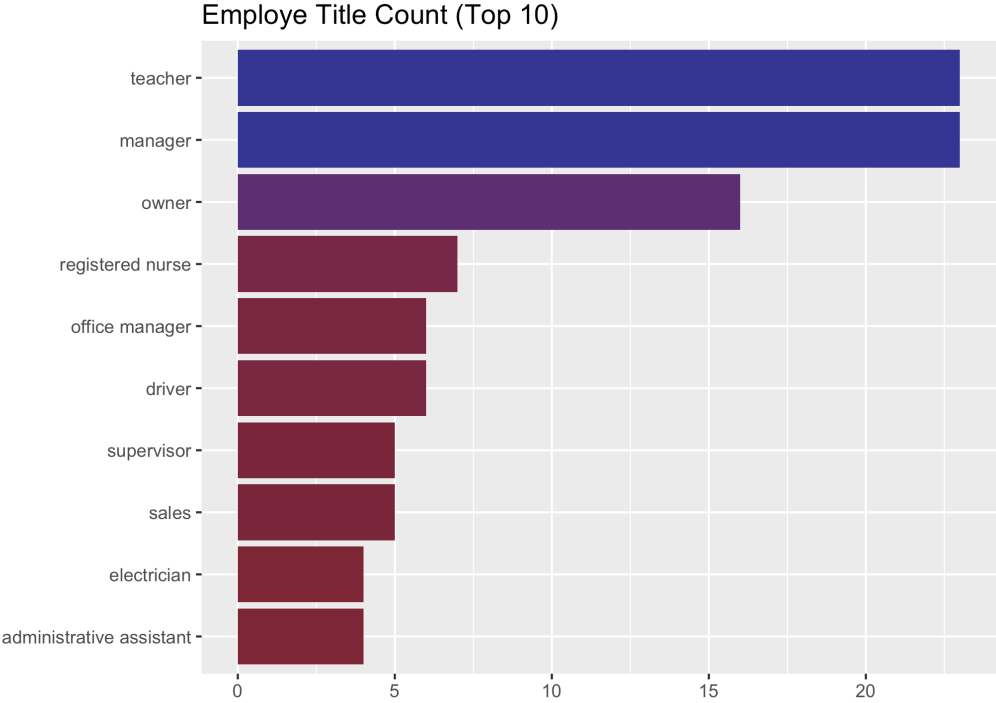
- The database was hosted on a server and accessed by the team via a private key

The screenshot shows the 'Manage Server Connections' dialog box in MySQL Workbench. The 'Connection Name' is 'database\_607\_project3'. The 'Connection Method' is 'Standard TCP/IP over SSH'. The 'Parameters' tab is selected, showing the following fields:

- SSH Hostname: 34.203.220.215
- SSH Username: data607user
- SSH Password: (with 'Store in Keychain ...' and 'Clear' buttons)
- SSH Key File: /Users/briansingh/Desktop/CUNY/D: (with a file selection button)

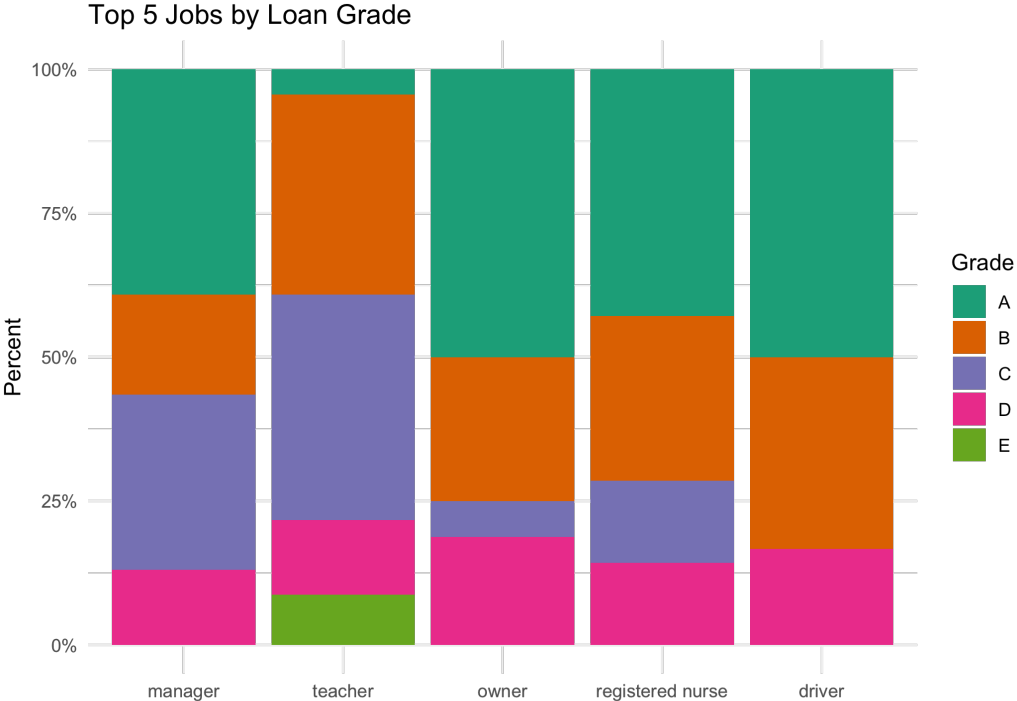
Each field has a descriptive tooltip on the right side of the dialog.

Which employees request the most loans?



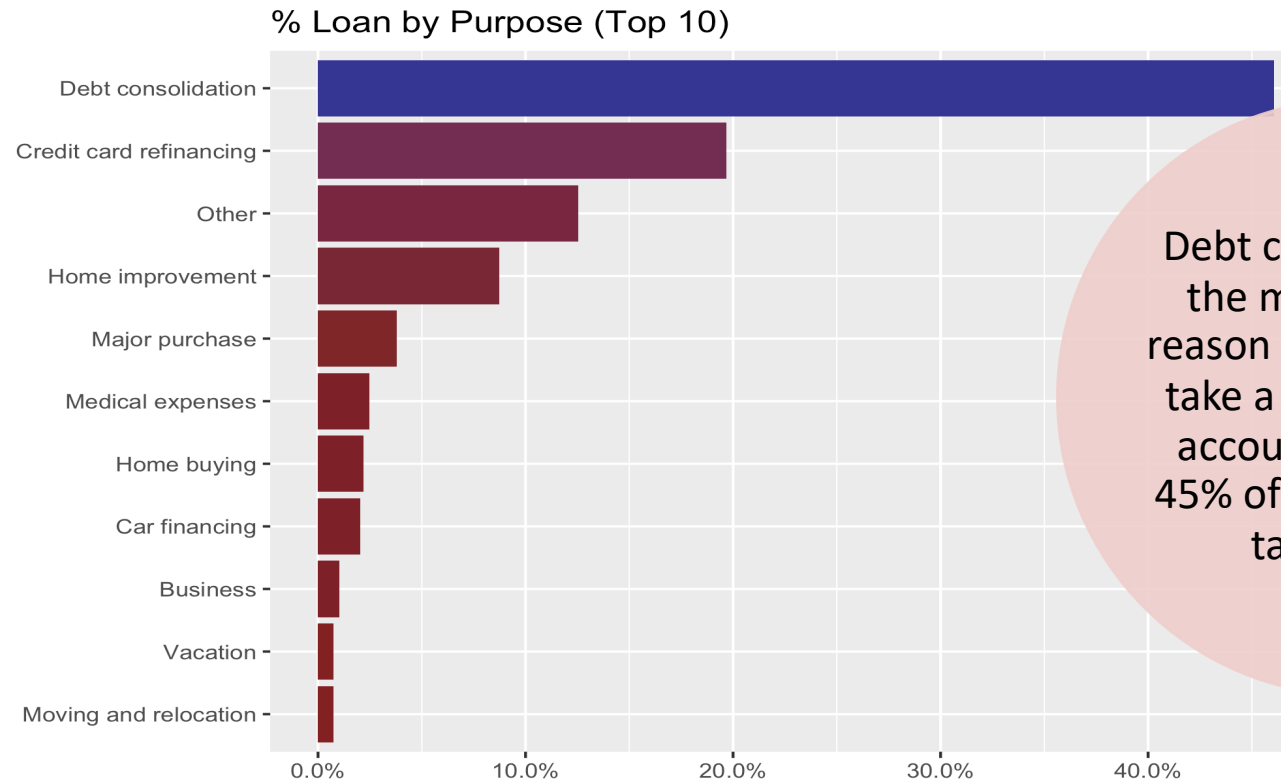
The data returned 61 applicants who did not disclose their employment title (excluded)

Teachers were the only group to receive loan grades of “E”, which denote the riskiest loans. “Manager” is a generic title if attempting to conduct further research on the results





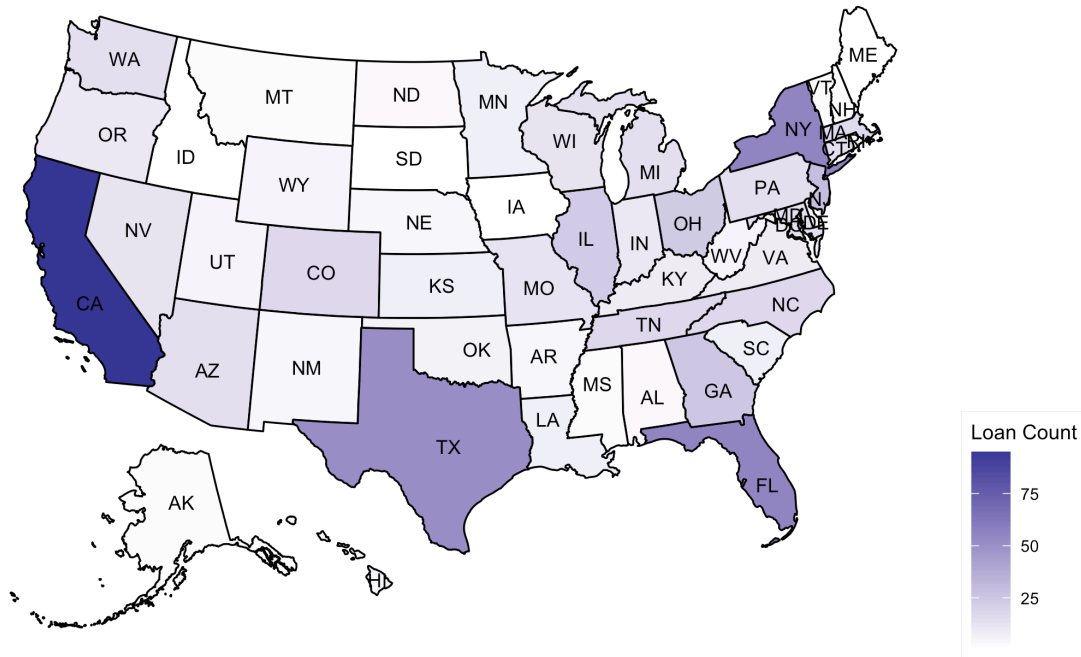
What's the most common purpose that a client requests a loan?



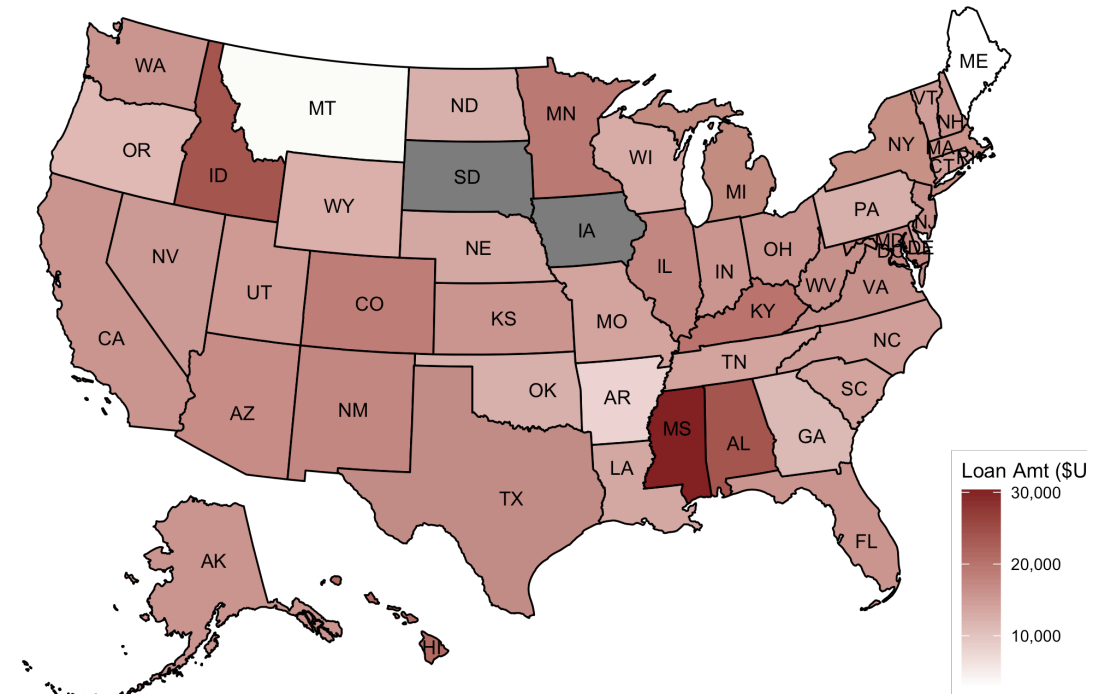
Debt consolidation is the most common reason that individuals take a personal loan, accounting for over 45% of the total loans taken out.\*

\*This appears to be confirmed by [bankrate.com](https://www.bankrate.com)

Accepted Loan Applications by State

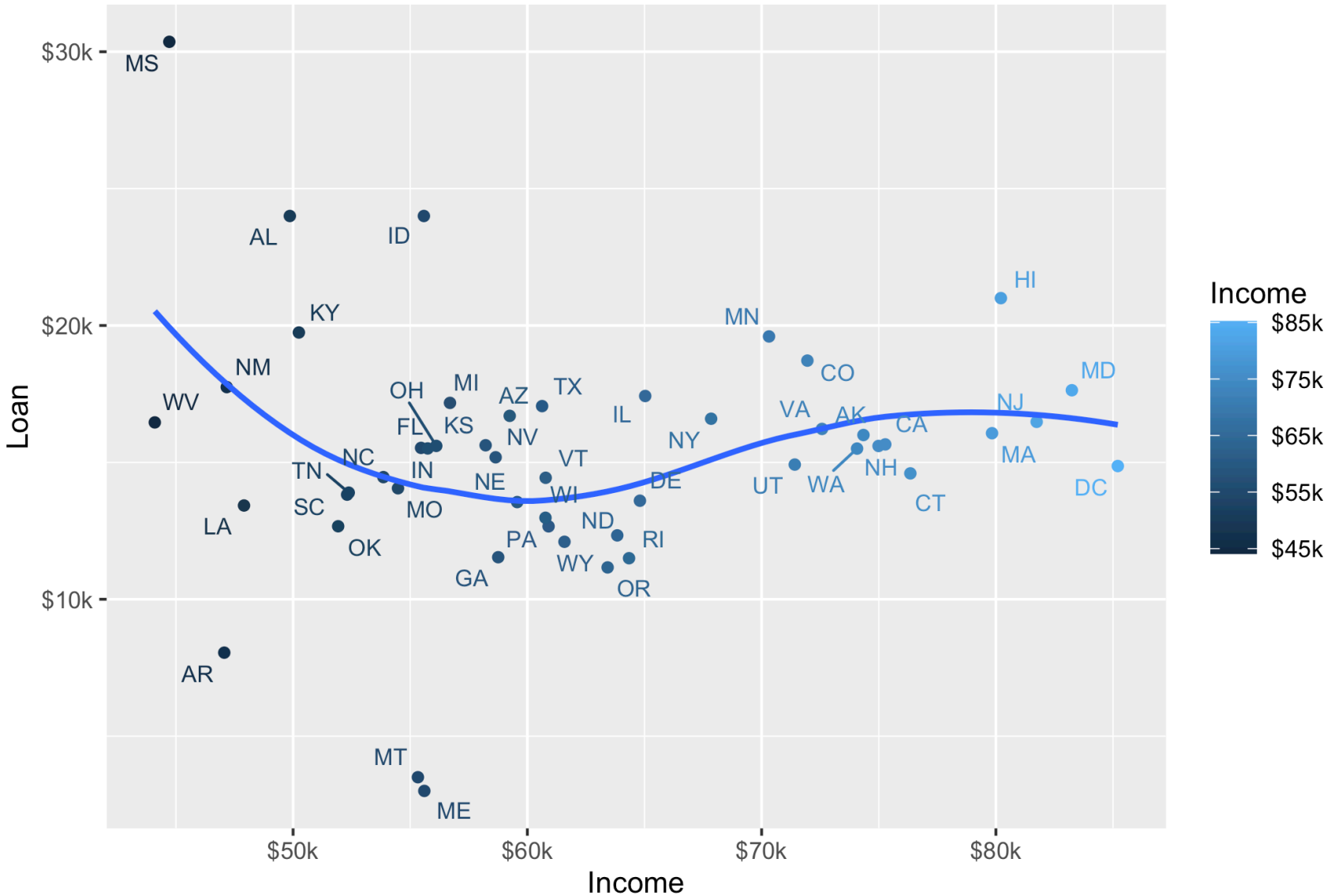


Avg Loan Amount (\$USD) by State



What's the most common State where loan applications are submitted?

Mean Income vs. Mean Loan by State (2018)

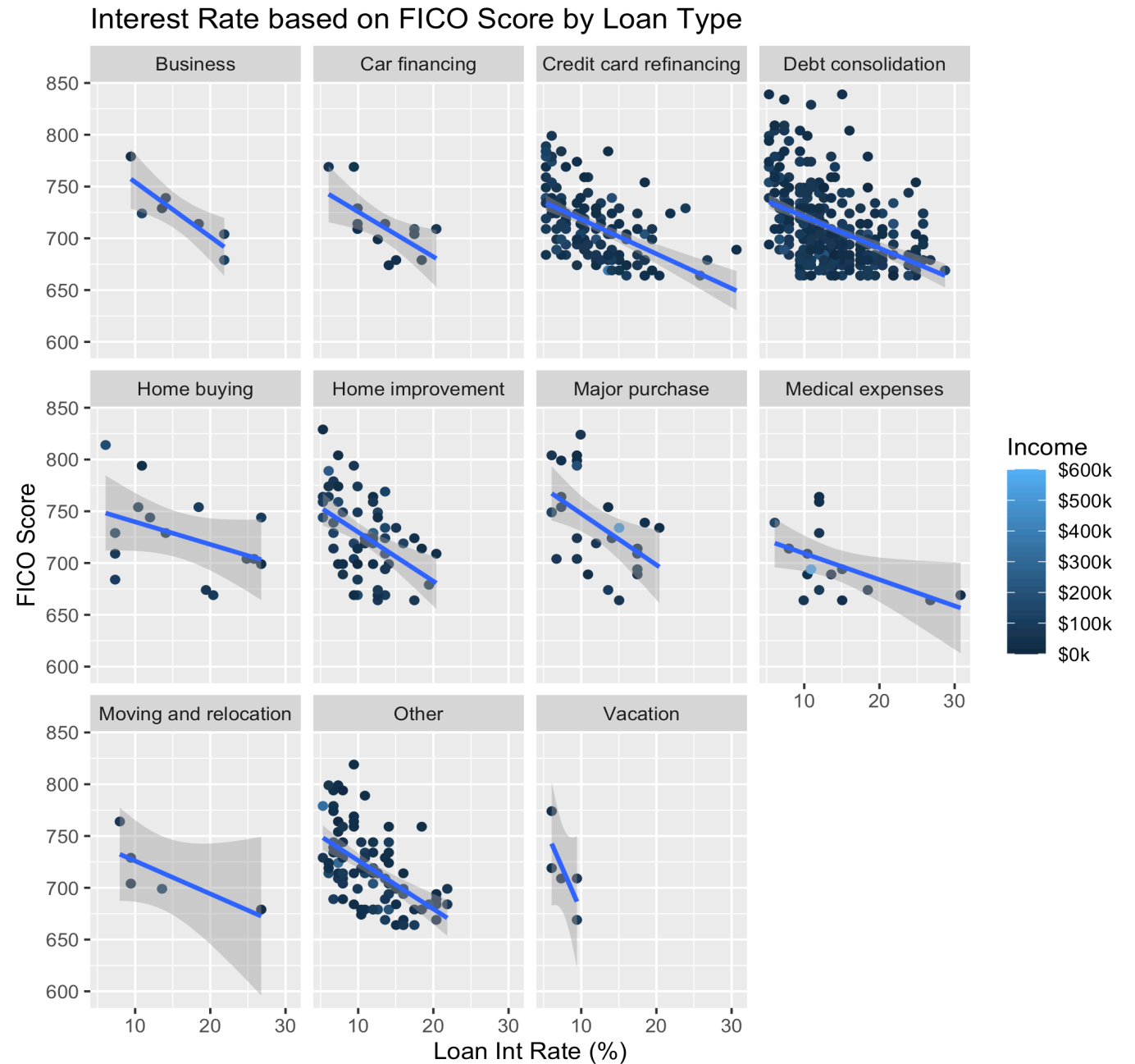


Mississippi has one of the lowest average incomes in 2018\* with the highest loan average (\$)

\*[https://en.wikipedia.org/wiki/List\\_of\\_U.S.\\_states\\_and\\_territories\\_by\\_income](https://en.wikipedia.org/wiki/List_of_U.S._states_and_territories_by_income)

Do loan amounts correlate with salary?

Does your FICO score have an impact on your loan's interest rate?



# Conclusion

Most common employee types taking loans - NA (61), teachers, managers, owners.

- Teachers had the highest proportion of E graded loans (riskiest), while owners had the highest proportion of A graded loans.

Loan purposes were dominated by Debt consolidation and Credit Card refinancing

- FICO scores had a clearly negative linear relationship with loan rates.

States with the most loan requests California, NY and Florida.

- Mississippi and Idaho had the highest mean loan amount. Strikingly, Missouri also had one of the lowest mean annual incomes, while states such as Maryland/DC, Boston, New Jersey and Massachusetts, had the highest salaries and relatively modest loan rates.

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## **Potential Next Steps**

Merge demographic data from the census API to conduct an analysis of how this all relates to different aspects such as income, race, sex and more focused geographical boundaries.

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# Links

- Project 3 - Team Gryffindor Homepage

<http://data607project3.com/>

- Github

<https://github.com/justinm0rgan/project3data607>

Questions?

