

# Mining Consumer Complaints

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# Questions Sought to Answer

How can we flag certain problem areas by correlating the credit card company used by the customer, what issue they were having, and where they experienced this problem?



# Data Preparation Work

- Data Cleaning:
  - Inconsistent quotations
  - Blank cells filled with 0s or empty strings for consistency.
- Data Reduction: We deleted the attribute “tags”

# Pandas fillna()

Date received	Product	Sub-product	Issue	Sub-issue	Consumer info	Company info	Company pu	Company	State
3/12/14	Mortgage	Other mortg	Loan modification, collection, foreclosure			M&T BANK C	M		
10/1/16	Credit reporting		Incorrect info	Account stat	I have outdated	Company has:	TRANSUNION AL		
10/17/16	Consumer Lc	Vehicle loan	Managing the loan or lease	I purchased a new car on		CITIZENS FIN PA			
6/8/14	Credit card		Bankruptcy			AMERICAN E ID			
9/13/14	Debt collecti	Credit card	Communication	Frequent or repeated calls		CITIBANK, N. VA			
11/13/13	Mortgage	Conventional	Loan servicing, payments, escrow account	For account		U.S. BANCOF MN			
6/15/15	Credit reporting		Credit report	Inadequate information	on my	Company ch	Experian Inc	VA	
11/13/15	Mortgage	Other mortg	Loan modification, collection, foreclosure	Company be	Aldridge Pite CA				
10/21/14	Mortgage	Conventional	Loan modification, collection, foreclosure			OCWEN LOA FL			
4/14/17	Mortgage	Other mortg	Loan modification, collection, foreclosure	Company be	Shellpoint Pa CA				
3/30/12	Student loan	Non-federal	Repaying your loan			Student Loar MN			
2/3/16	Debt collecti	Other (i.e. pf)	Disclosure ve	Not given en	This company refuses to p	The CBE Gro	TX		
1/7/15	Credit reporting		Incorrect info	Account status		Experian Inc	NV		
3/15/13	Credit card		Closing/Cancelling account			FIRST NATIO	NY		
7/18/16	Credit reporting		Incorrect info	Account status		EQUIFAX, INC	FL		
2/17/16	Debt collecti	Credit card	Improper col	Talked to a t	This	Company ha:	SQUARETWC NE		
11/7/14	Mortgage	Conventional	Loan modification, collection, foreclosure			U.S. BANCOF MT			
4/17/15	Mortgage	FHA mortgag	Application, originator, mortgage broker			WELLS FARG ME			
3/9/16	Credit reporting		Incorrect info	Information is not mine	Company ha:	Experian Inc	CA		
2/4/15	Debt collecti	Mortgage	Cont'd attem	Debt was paid		PHH Mortgag	CA		
3/17/17	Bank account	Checking acc	Making/receiving payments, sending m	Company be	UNITED SERV WI				
3/8/12	Mortgage	Other mortg	Loan servicing, payments, escrow account			Ditech Finan	CA		
3/27/13	Mortgage	Conventional	Loan servicing, payments, escrow account			NATIONSTAF WA			
2/25/14	Debt collecti	Other (i.e. pf)	Cont'd attem	Debt is not mine		Navient Solu	RI		
11/18/16	Mortgage	Conventional	Settlement process and cc	Started the refinanc	of hi	AMERICAN N NJ			
7/16/15	Mortgage	Conventional	Application, originator, m	In XXXX, I and my ex-husb	HSBC NORTH IL				
11/3/15	Debt collecti	Medical	Disclosure ve	Right to dispute notice no	Company ch	Revenue Rec	FL		
8/9/16	Credit reporting		Credit report	Problem with	I have disputed several ac	EQUIFAX, INC MS			



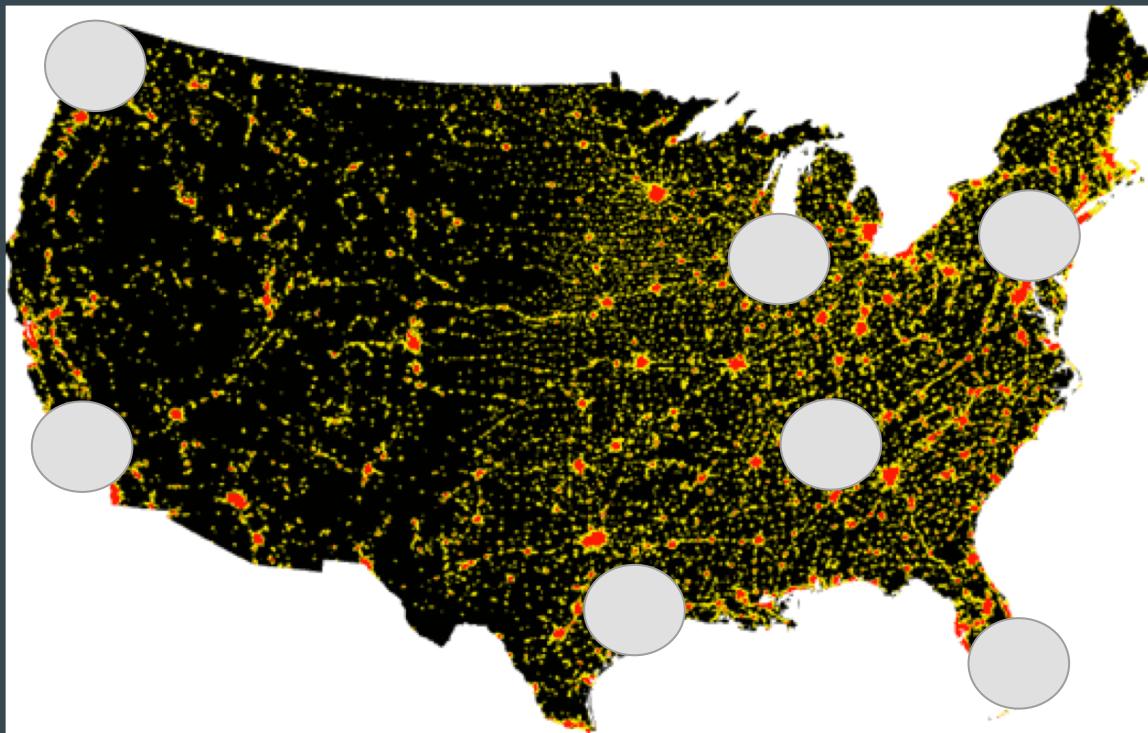
Date receive	Product	Sub-product	Issue	Sub-issue	Consumer info	Company info	Company pu	Company	State
3/12/14	Mortgage	Other mortg	Loan modific	empty	empty	empty		M&T BANK C	M
10/1/16	Credit report	empty	Incorrect inf	Account stat	I have outda	Company ha:	TRANSUNION AL		
10/17/16	Consumer Lc	Vehicle loan	Managing th	empty	I purchased a	empty		CITIZENS FIN PA	
6/8/14	Credit card	empty	Bankruptcy	empty	empty	empty		AMERICAN E ID	
9/13/14	Debt collecti	Credit card	Communication	Frequent or	empty	empty		CITIBANK, N. VA	
11/13/13	Mortgage	Conventional	Loan servicin	empty	empty	empty		U.S. BANCOF MN	
6/16/15	Debt collecti	Medical	Improper col	Contacted er	empty	Company be	California Ac	CA	
6/15/15	Credit report	empty	Credit report	Inadequate h	An account	Company ch	Experian Inc	VA	
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# Tools Used

- Matplotlib
- Pandas
- Excel functions



# Methods Used - Clustering



# Knowledge Gained → Knowledge Application

- Issues centered around dense populations
- Mortgage issues mostly occurred in the suburbs
- Security must be a high priority for large companies
- Small companies can strategically locate clientele