

# Lending Club Case Study

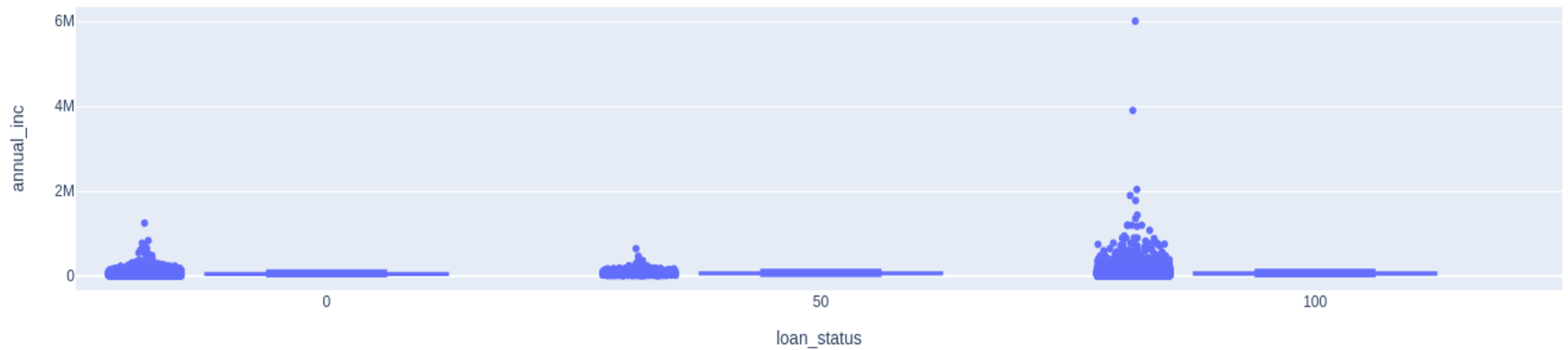
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# Correlation Matrix between different variables.

	id	member_id	loan_amnt	funded_amnt	funded_amnt_inv	installment	home_ownership	annual_inc	verification_status	loan_status	...	collection_recovery_fee	last_pymnt_amnt	collections
recoveries	0.033426	0.031565	0.135446	0.136284	0.123759	0.118152	0.017924	0.021589	0.066688	-0.330683	...	0.796816	-0.069955	
collection_recovery_fee	-0.013359	-0.015155	0.072853	0.074676	0.060358	0.075467	0.008174	0.015604	0.028297	-0.199591	...	1.000000	-0.041874	
total_rec_late_fee	-0.055082	-0.057750	0.044706	0.046705	0.027172	0.056709	-0.023694	0.006243	0.007465	-0.160246	...	0.093178	-0.060600	
out_prncp	0.180619	0.170743	0.192937	0.194941	0.203688	0.125082	0.040620	0.033573	0.103616	-0.133108	...	-0.011394	-0.066393	
out_prncp_inv	0.180591	0.170706	0.192623	0.194675	0.203693	0.124932	0.040368	0.033472	0.103509	-0.132967	...	-0.011382	-0.066324	
loan_amnt	0.141919	0.140710	1.000000	0.981578	0.940034	0.930288	0.174495	0.271149	0.416186	-0.079476	...	0.072853	0.448742	
funded_amnt	0.152286	0.150322	0.981578	1.000000	0.958422	0.956159	0.169203	0.266965	0.409789	-0.076350	...	0.074676	0.453133	
id	1.000000	0.993650	0.141919	0.152286	0.249547	0.086587	0.045792	0.008731	0.214196	-0.072152	...	-0.013359	0.122365	
member_id	0.993650	1.000000	0.140710	0.150322	0.257887	0.081025	0.049853	0.009380	0.218618	-0.068501	...	-0.015155	0.123627	
inq_last_6mths	-0.042378	-0.047086	0.009229	0.009259	-0.005712	0.009722	0.077478	0.033908	0.013343	-0.067612	...	0.012420	0.028514	
total_rec_int	0.172856	0.173234	0.729726	0.737469	0.730914	0.634725	0.113363	0.185476	0.348731	-0.065559	...	0.033289	0.191990	
verification_status	0.214196	0.218618	0.416186	0.409789	0.423062	0.361562	0.079529	0.125413	1.000000	-0.061355	...	0.028297	0.202436	
funded_amnt_inv	0.249547	0.257887	0.940034	0.958422	1.000000	0.905039	0.167651	0.254375	0.423062	-0.060091	...	0.060358	0.442604	
dti	0.095983	0.096963	0.066439	0.066283	0.074689	0.054186	-0.020851	-0.122732	0.074530	-0.049951	...	0.011033	0.005212	
pub_rec	-0.019440	-0.018721	-0.051236	-0.052169	-0.053214	-0.046532	0.028281	-0.018689	-0.011440	-0.048212	...	-0.005536	-0.032214	
pub_rec_bankruptcies	-0.009505	-0.008769	-0.037180	-0.038502	-0.042746	-0.034103	0.030827	-0.016801	-0.009235	-0.045384	...	-0.005208	-0.022585	
installment	0.086587	0.081025	0.930288	0.956159	0.905039	1.000000	0.136323	0.270874	0.361562	-0.036132	...	0.075467	0.401688	
delinq_2yrs	-0.008644	-0.008119	-0.031864	-0.032355	-0.038501	-0.019657	0.016839	0.023083	0.006404	-0.019234	...	0.013912	-0.012149	
employment_years	0.094812	0.098221	0.161924	0.161475	0.169808	0.134766	0.247425	0.122239	0.083390	-0.015400	...	0.006479	0.081967	
revol_bal	0.008763	0.005113	0.317597	0.310392	0.290797	0.312679	0.215671	0.279961	0.149675	-0.011391	...	0.022400	0.120371	
open_acc	0.020388	0.017928	0.177168	0.175530	0.163027	0.172812	0.205044	0.158200	0.084698	0.004678	...	0.006219	0.078865	
home_ownership	0.045792	0.049853	0.174495	0.169203	0.167651	0.136323	1.000000	0.195270	0.079529	0.015850	...	0.008174	0.106221	
total_acc	0.042149	0.044374	0.256442	0.250589	0.242854	0.230824	0.330807	0.235771	0.118289	0.018919	...	0.010551	0.162841	
annual_inc	0.008731	0.009380	0.271149	0.266965	0.254375	0.270874	0.195270	1.000000	0.125413	0.037053	...	0.015604	0.140401	
total_pymnt_inv	0.220838	0.229307	0.854243	0.870799	0.913257	0.817416	0.157742	0.247119	0.388133	0.187913	...	0.015016	0.462255	
total_pymnt	0.140045	0.139975	0.886613	0.903160	0.881228	0.856928	0.158081	0.257980	0.377106	0.192413	...	0.024555	0.474624	
last_pymnt_amnt	0.122365	0.123627	0.448742	0.453133	0.442604	0.401688	0.106221	0.140401	0.202436	0.233293	...	-0.041874	1.000000	
total_rec_prncp	0.112213	0.112168	0.852021	0.870255	0.845848	0.850773	0.158734	0.259571	0.347362	0.302839	...	-0.058634	0.543408	
loan_status	-0.072152	-0.068501	-0.079476	-0.076350	-0.060091	-0.036132	0.015850	0.037053	-0.061355	1.000000	...	-0.199591	0.233293	
collections_12_mths_ex_med	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	
policy_code	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	

# Relationship between loan\_status and annual\_income.



# Relationship between employment years and loan status.



# Relationship between verification status and loan status.



# Relationship between home ownership and loan status.



# Conclusion

**Loan Status is affected by multiple factors in many different ways.**

**But mostly it is affected by annual income and verification status of a person.**

**A person with good verification status and annual income always succeed paying the loans.**