

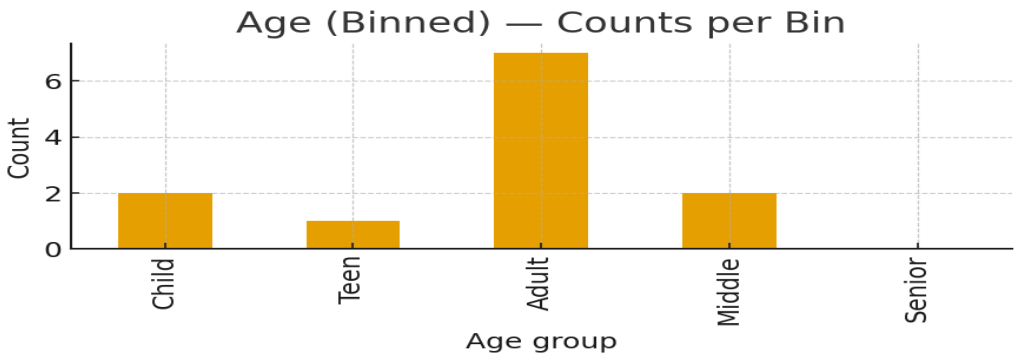
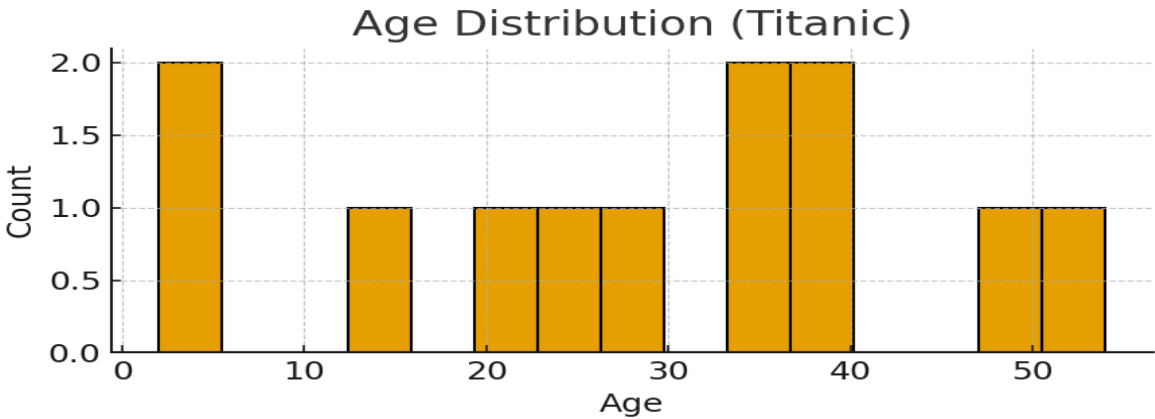
Feature Selection — Regenerated with Executed Outputs (v2)

This PDF includes plots and selection outputs generated programmatically in a safe execution environment.

Binning / Discretization

Age group counts:

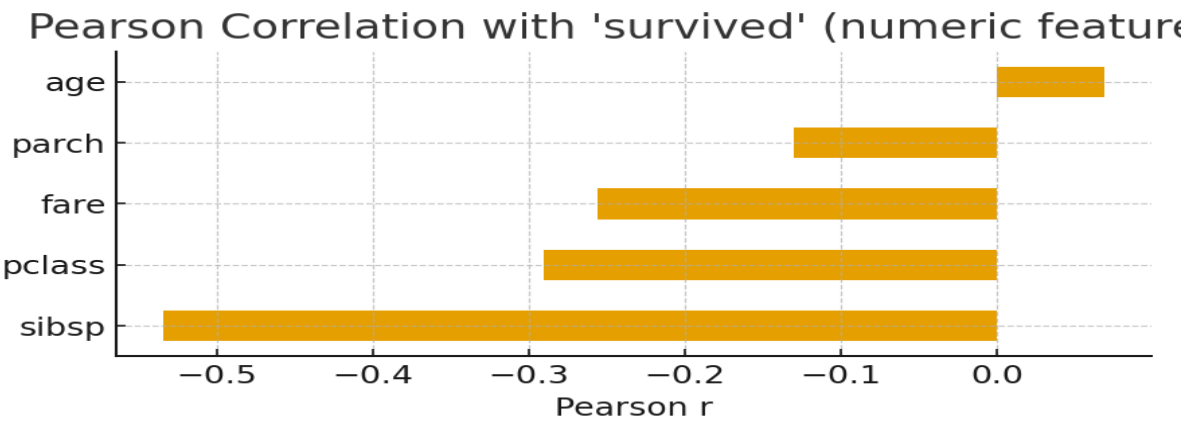
Age group	Count
Child	2
Teen	1
Adult	7
Middle	2
Senior	0



Filter Methods

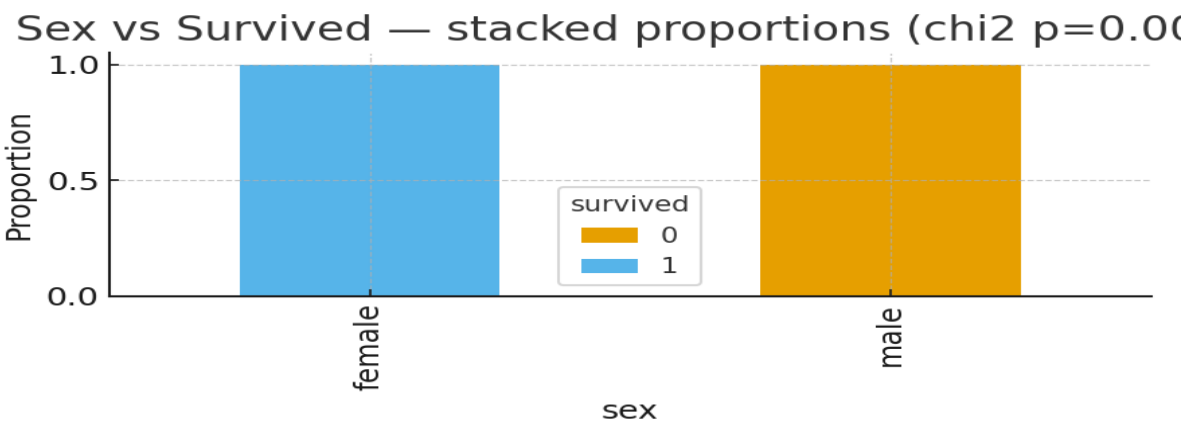
Pearson correlation with 'survived':

sibsp: $r = -0.535$
pclass: $r = -0.290$
fare: $r = -0.256$
parch: $r = -0.130$
age: $r = 0.069$



Chi-square test (sex vs survived):

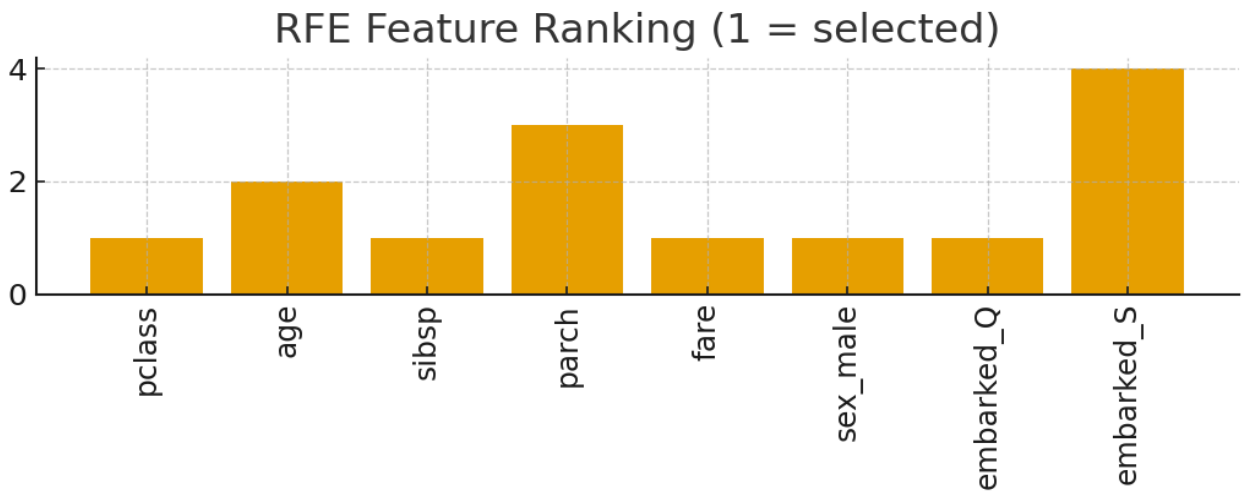
chi2 = 8.333, p = 0.0039



Wrapper Methods — RFE

RFE selected features:

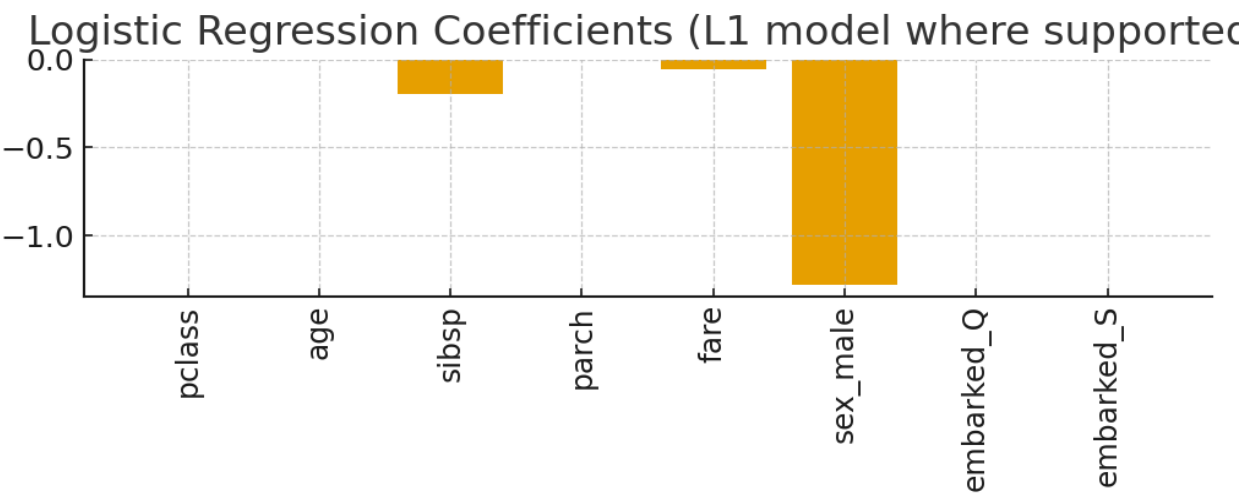
pclass, sibsp, fare, sex_male, embarked_Q



Embedded Methods — L1 & Tree-based

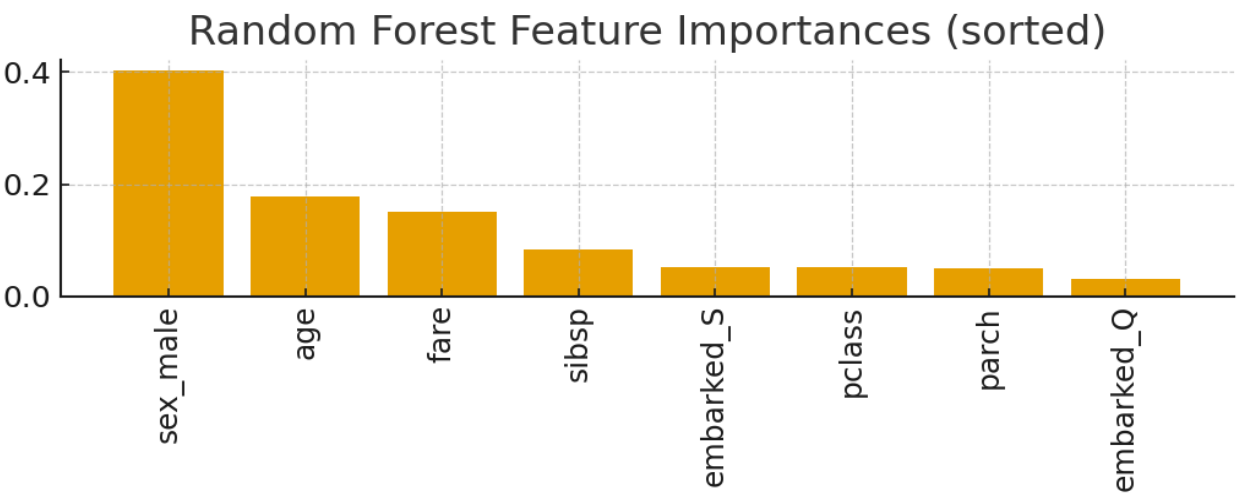
L1-selected (non-zero coefficients):

sibsp, fare, sex_male



RandomForest top features:

sex_male, age, fare, sibsp, embarked_S



Appendix

Notebook (original): /mnt/data/Feature_Selection_Tutorial_Notebook.ipynb

Generated images are saved in /mnt/data/ with prefix v2_