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Bike Share in the Bay Area

MAP

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OVERVIEW OF DATA

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DATA AND ANALYSIS

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LIMITATIONS AND NEXT STEPS

BIKE SHARE

Can we predict daily bike
ridership?



THE DATA



WEATHER

3,665 observations of
24 variables
438KB



TRIPS

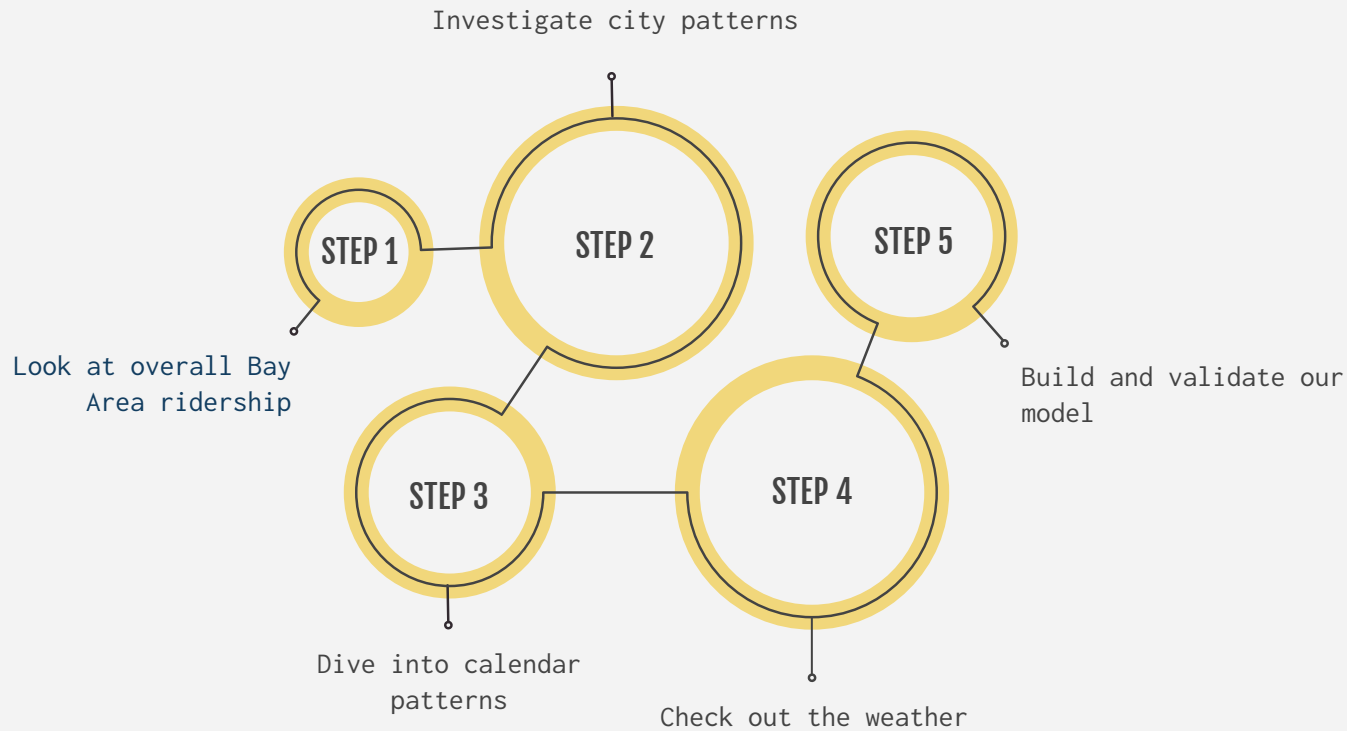
669,959 observations of
11 variables
80MB



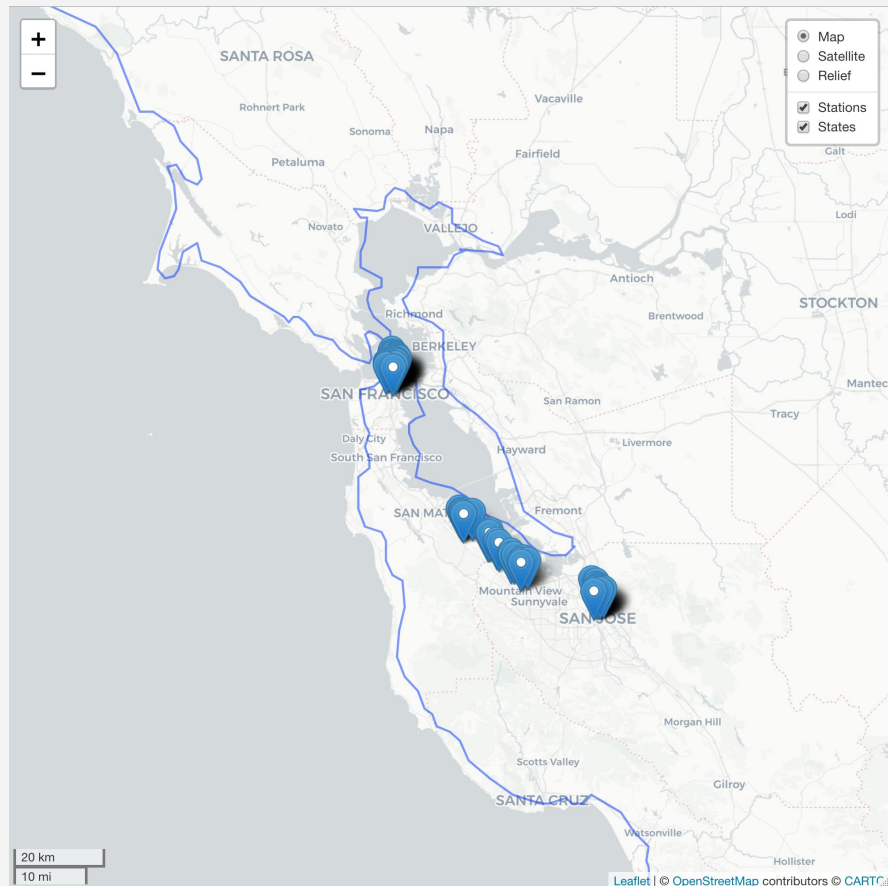
STATIONS

70 observations of 7
variables
57KB

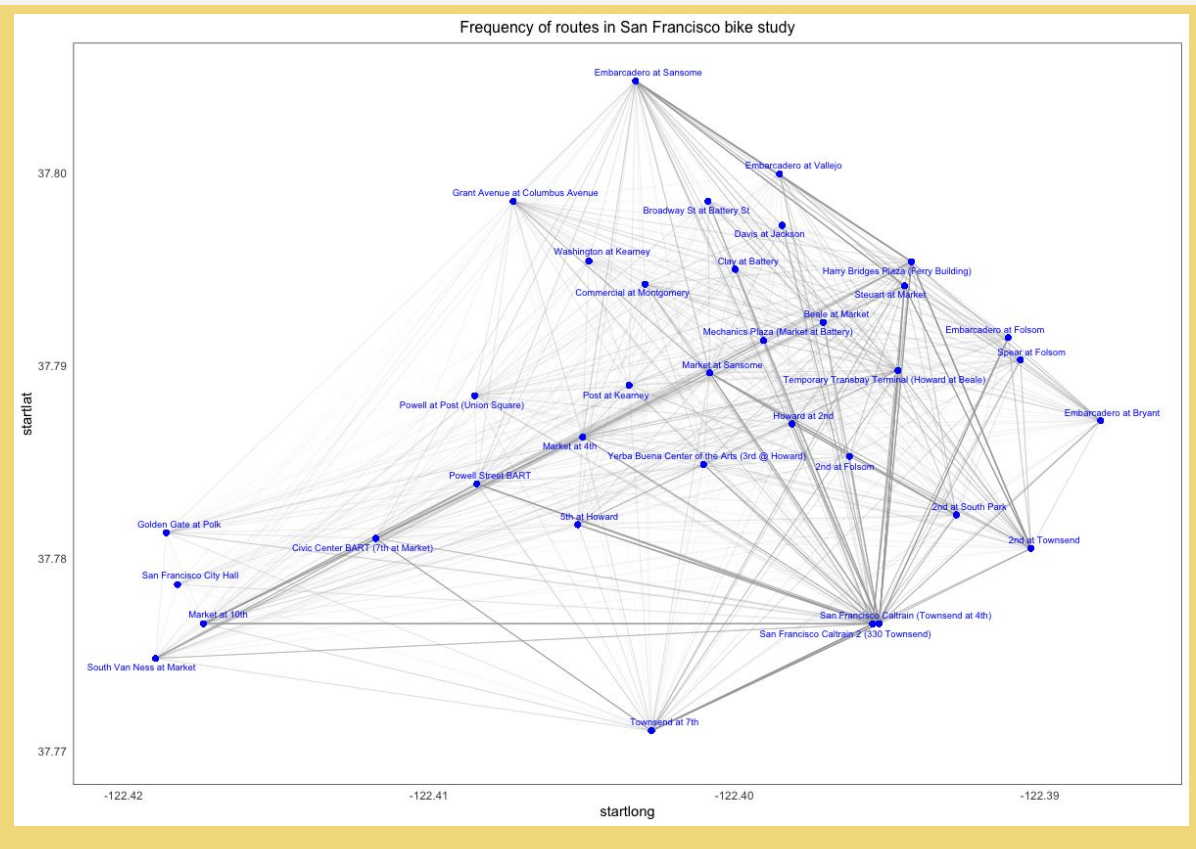
OUR PROCESS



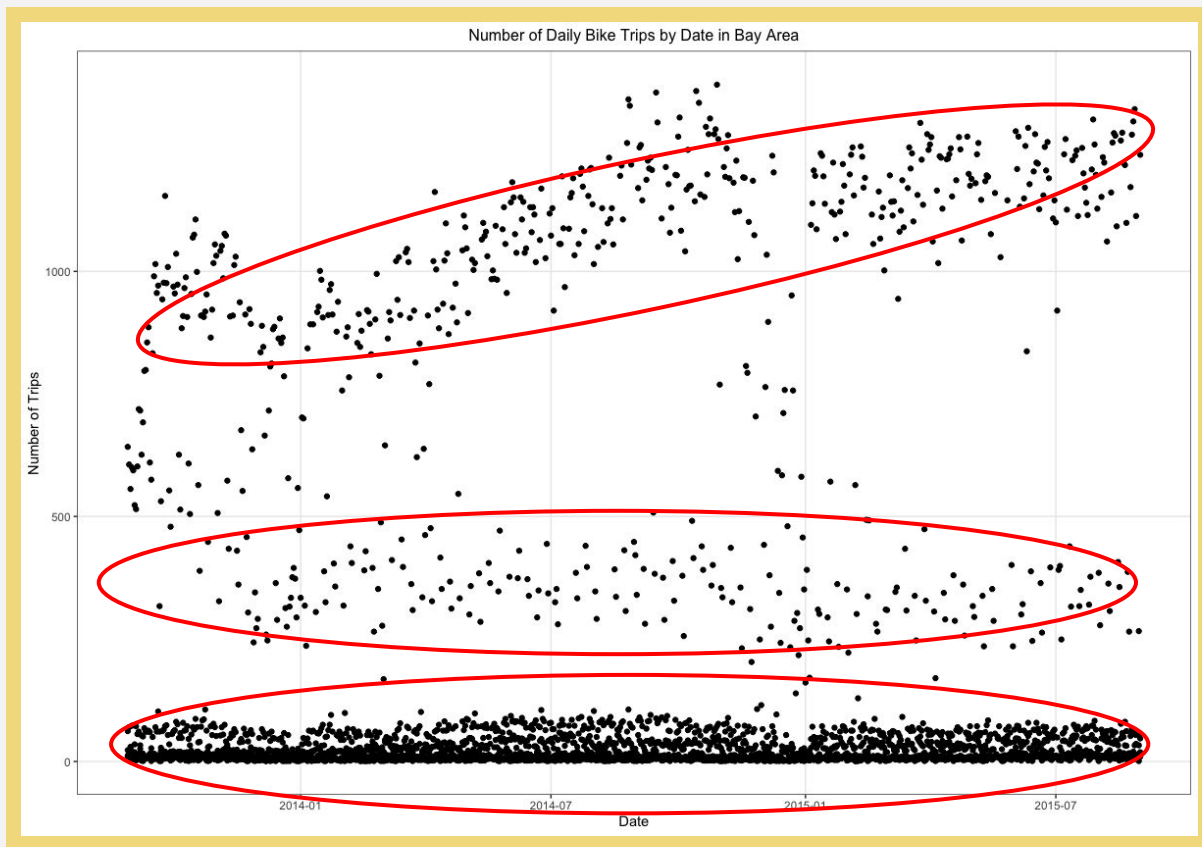
THE STATIONS



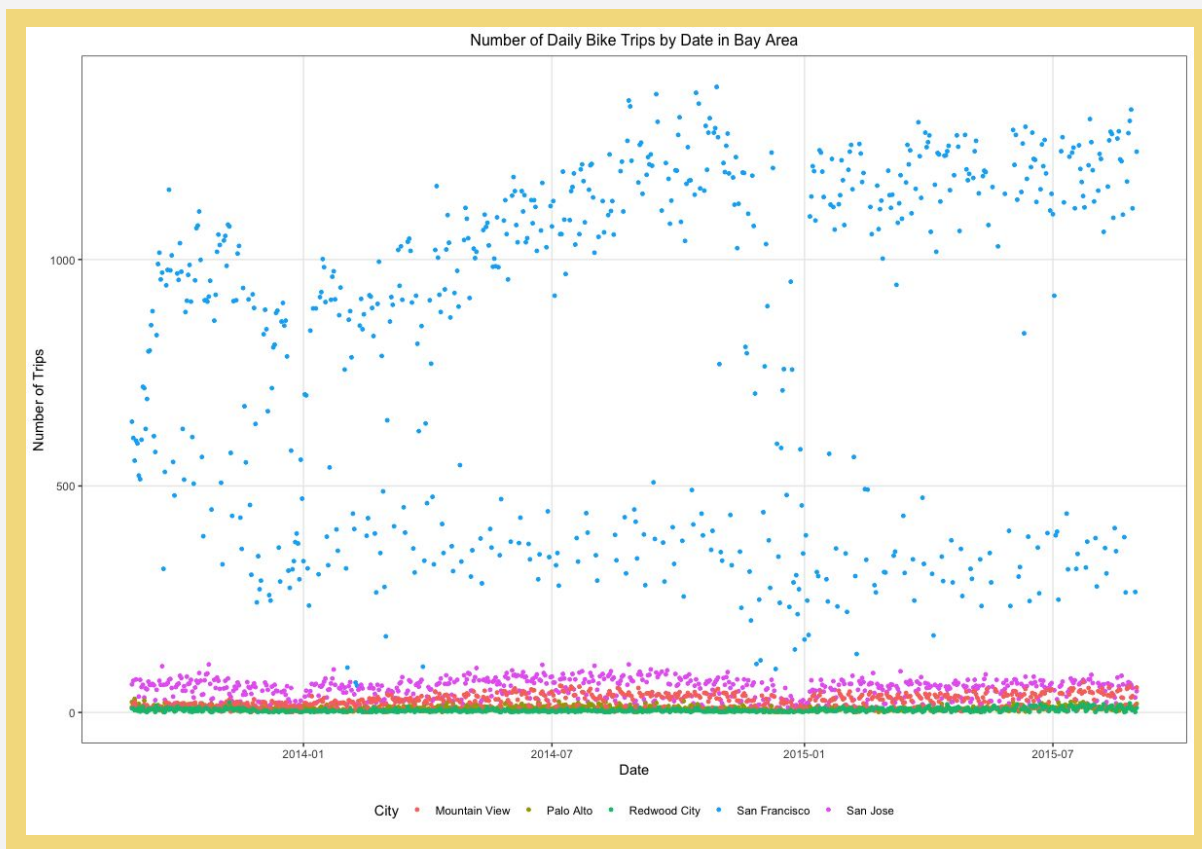
THE TRIPS



THE DATA



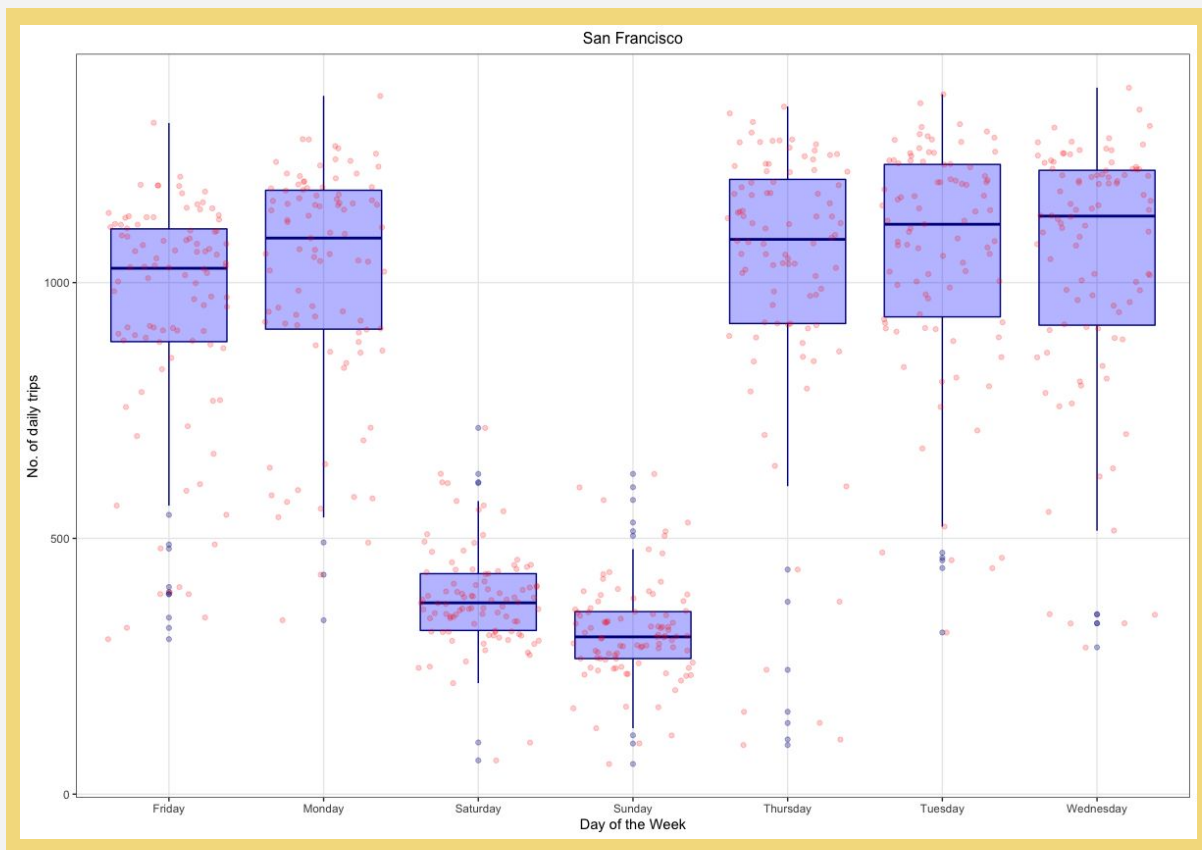
THE DATA



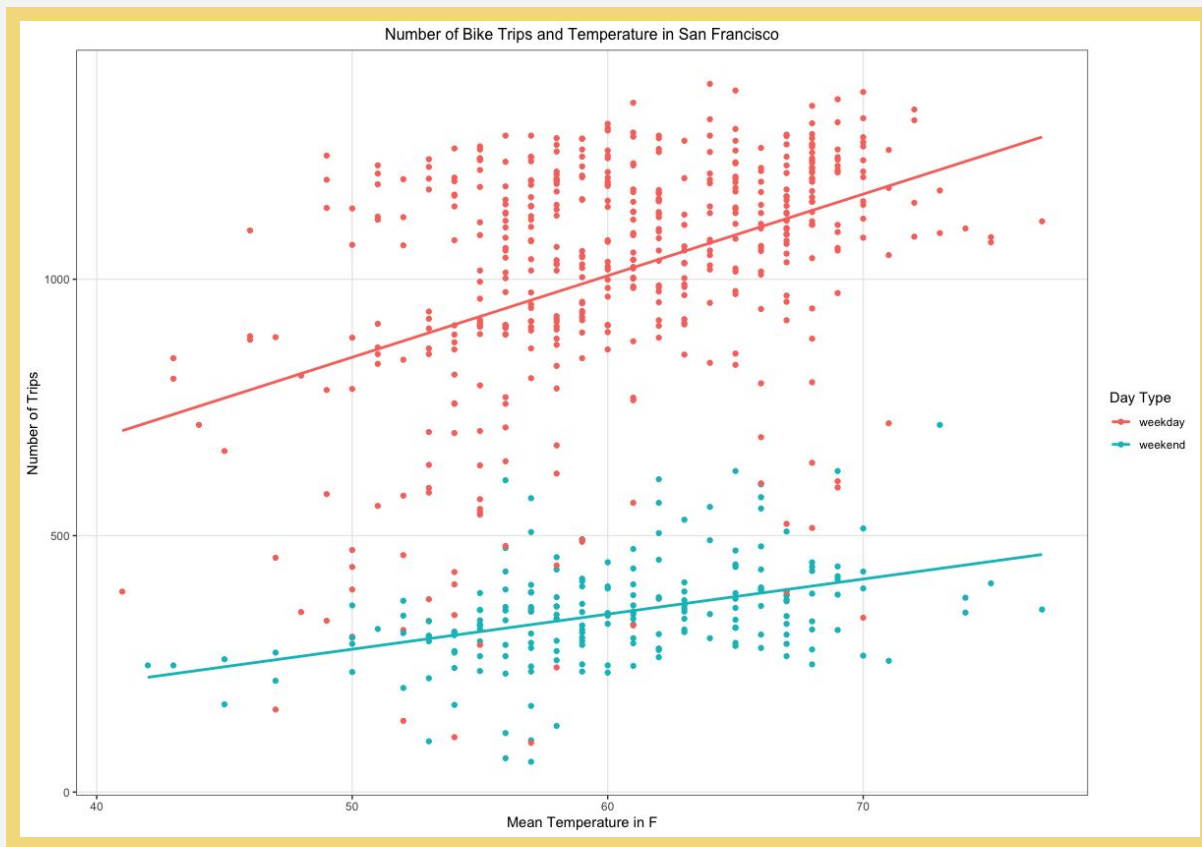
THE DATA



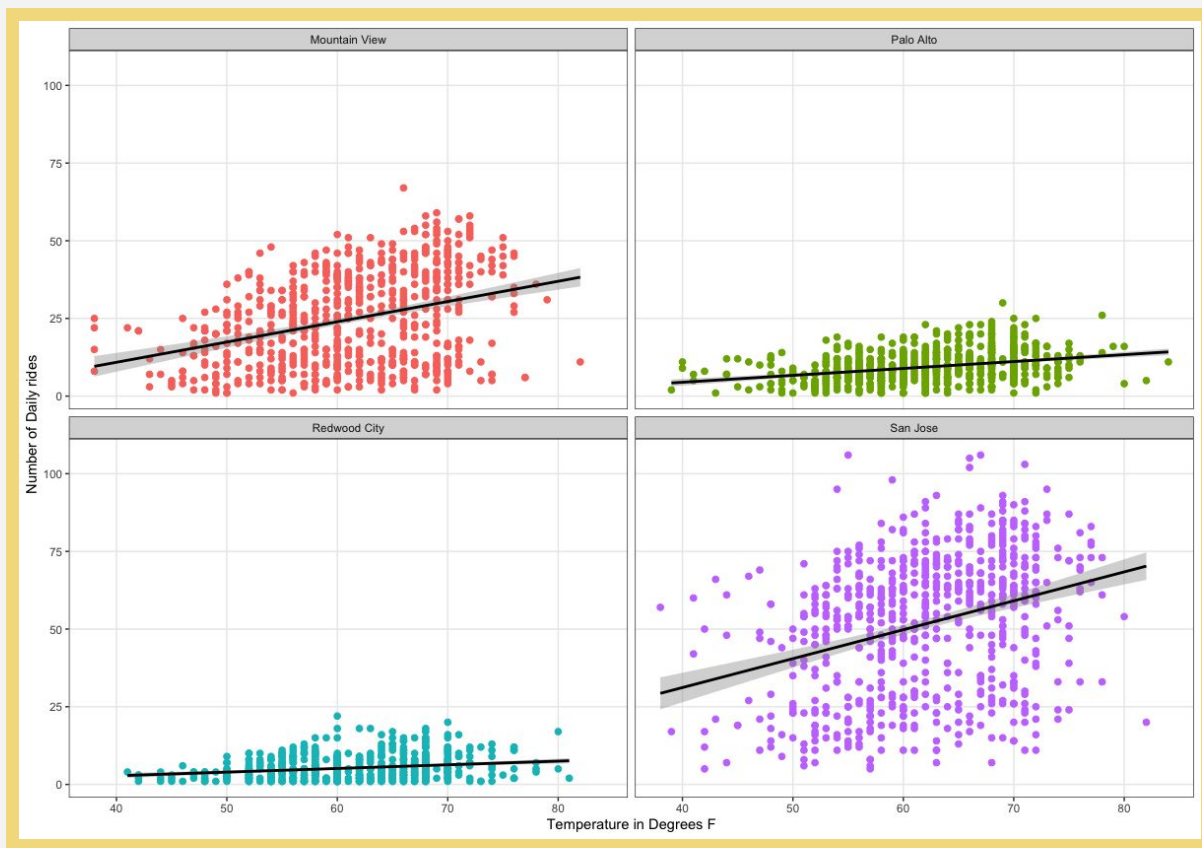
THE DATA



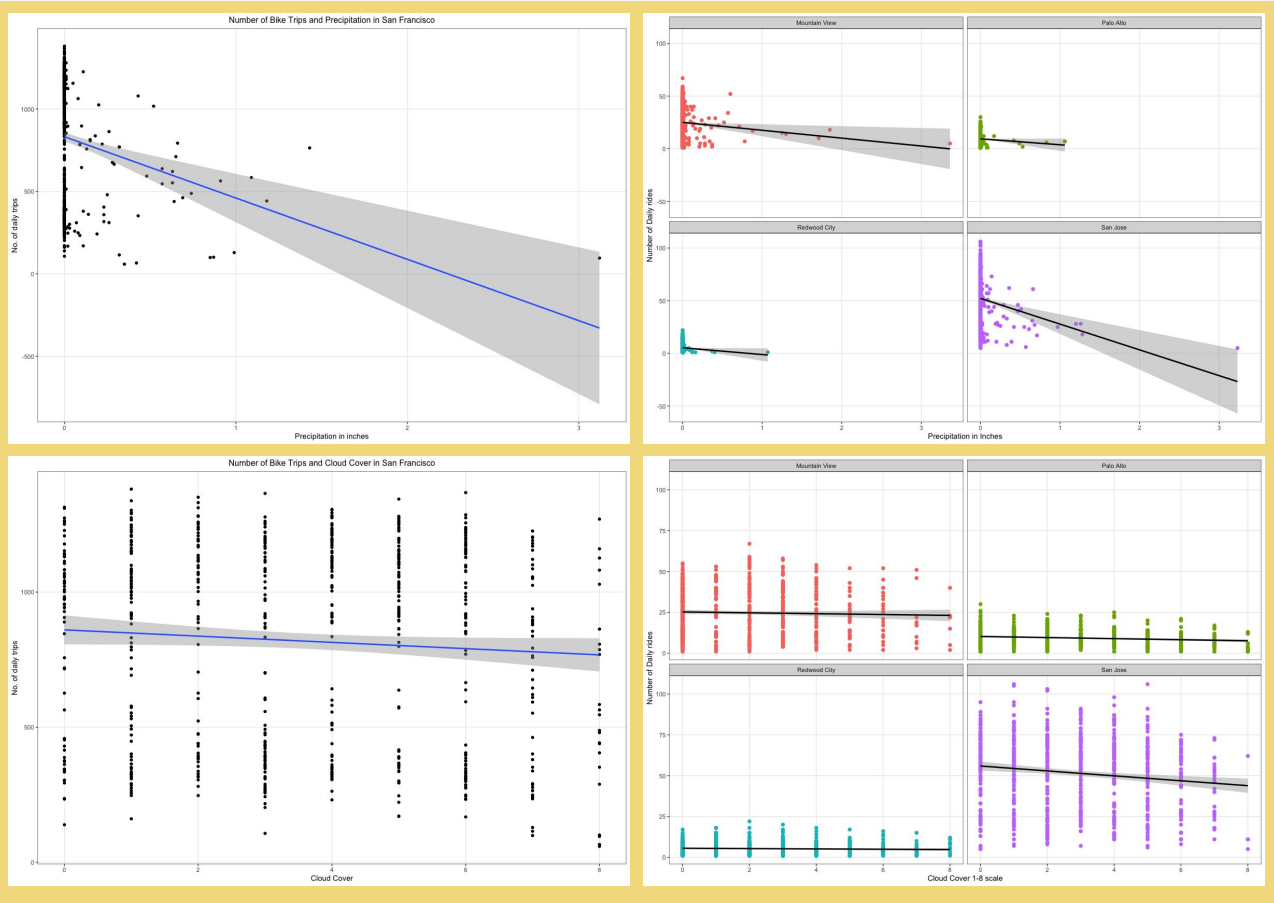
THE DATA



THE DATA



THE DATA



THE DATA

```
mod1_formula<-formula(n ~ date + day + holiday + cloud_cover +  
precipitation_inches + mean_temperature_f )
```

Call:

```
lm(formula = mod1_formula, data = sf_tidy)
```

Residuals:

Min	1Q	Median	3Q	Max
-734.92	-62.00	13.30	92.86	550.22

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-4.246e+03	4.707e+02	-9.022	< 2e-16 ***
date	2.857e-01	2.934e-02	9.738	< 2e-16 ***
dayMonday	8.463e+01	2.258e+01	3.748	0.000194 ***
daySaturday	-5.792e+02	2.214e+01	-26.161	< 2e-16 ***
daySunday	-6.440e+02	2.208e+01	-29.163	< 2e-16 ***
dayThursday	8.040e+01	2.244e+01	3.583	0.000365 ***
dayTuesday	1.099e+02	2.248e+01	4.887	1.29e-06 ***
dayWednesday	9.527e+01	2.217e+01	4.296	2.00e-05 ***
holidayTRUE	-5.208e+02	4.231e+01	-12.310	< 2e-16 ***
cloud_cover	-7.858e+00	2.900e+00	-2.710	0.006914 **
precipitation_inches	-3.629e+02	3.464e+01	-10.478	< 2e-16 ***
mean_temperature_f	9.707e+00	9.836e-01	9.869	< 2e-16 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

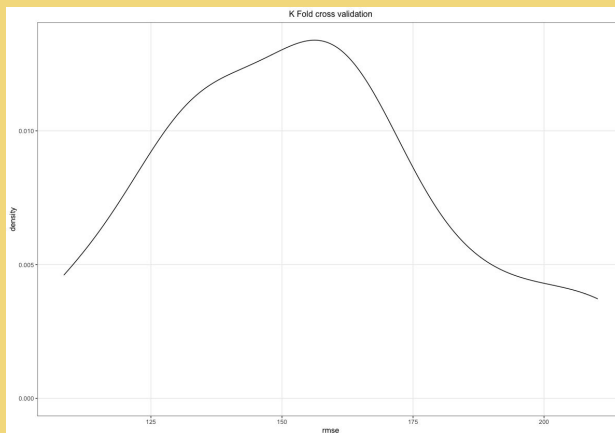
Residual standard error: 154.4 on 651 degrees of freedom

Multiple R-squared: 0.8292, Adjusted R-squared: 0.8264

F-statistic: 287.4 on 11 and 651 DF, p-value: < 2.2e-16

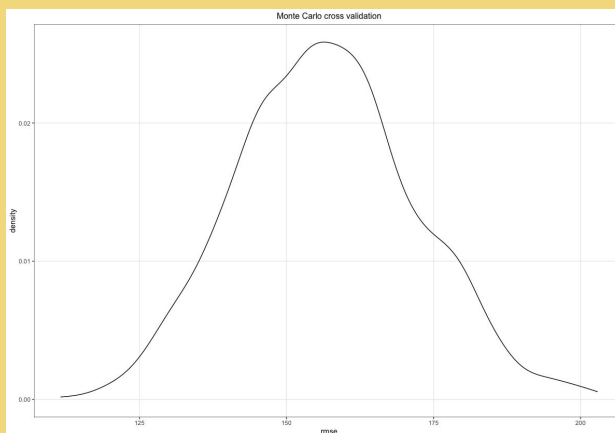
82.64%

THE DATA



Mean ridership = 818 per day

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
128.1	135.4	155.4	155.9	166.1	197.8



Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
114.8	146.3	156.3	156.8	167.0	204.1

LIMITATIONS



RAINFALL

79% of days had no rain, only 0.5% of days had more than 1 inch of rain



CALENDAR

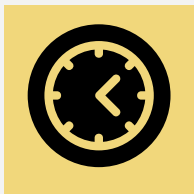
Rider usage increased significantly as the study progressed. We might expect the rate of increase to slow in future.



STATIONS

Certain stations are significantly more popular than others. The results of this study are only applicable to this mix.

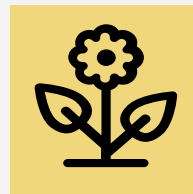
NEXT STEPS



Extend pilot by adding
more bikes and more
stations



Extend research to
social sciences - What
did the bike share
replace?



Consider other
transportation
reduction options

ONE MORE
THING





THANKS

Does anyone have any questions?

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