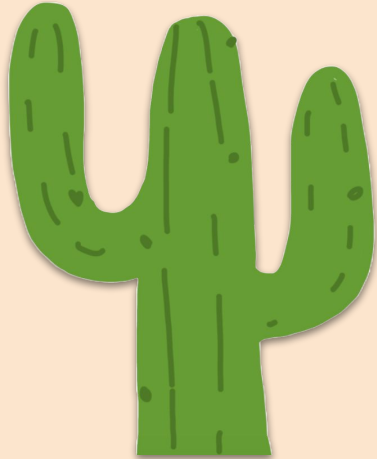
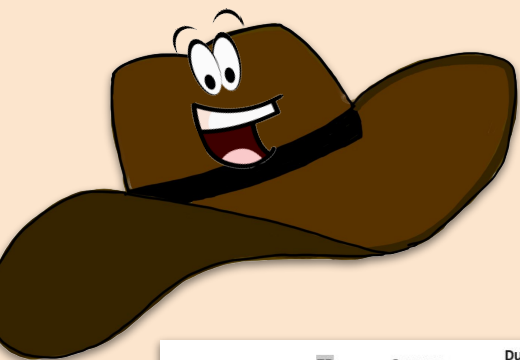


# What in tarnation?



- Help users find less crowded parking located near engaging activities of their choice, whether bustling hotspots or hidden gems.
- Uses historical data to predict congestion trends of real-time parking availability for locations in Austin, Texas.

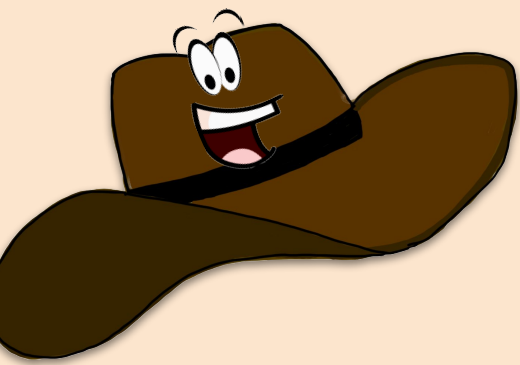




# First Look at the Frontier

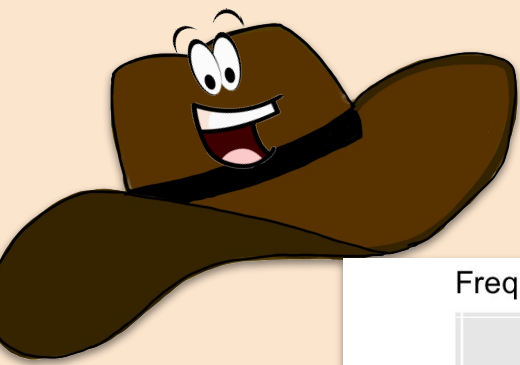


	ID	Source	Duration in Minutes	Start Time	End Time	Amount	Kiosk ID	App Zone ID	App Zone Group	Payment Method	Location Group	Last Updated
0	358997715	Passport - app	180.0	03/31/2022 09:34:00 AM	03/31/2022 12:34:00 PM	7.30	NaN	39491.0	Non-Core	App - Wallet	Non-Core	05/04/2023 10:26:29 PM
1	358997748	Passport - app	14.7	03/31/2022 09:34:00 AM	03/31/2022 09:48:42 AM	0.80	NaN	39104.0	CORE	App - Wallet	Core	05/04/2023 10:26:29 PM
2	358997768	Passport - app	390.0	03/31/2022 09:34:00 AM	03/31/2022 04:04:00 PM	21.05	NaN	39141.0	CORE	App - Wallet	Core	05/04/2023 10:26:29 PM
3	358997894	Passport - app	135.0	03/31/2022 09:35:00 AM	03/31/2022 11:50:00 AM	4.80	NaN	39567.0	Non-Core (Toomey)	App - Wallet	Toomey	05/04/2023 10:26:29 PM
4	358997981	Passport - app	15.0	03/31/2022 09:35:00 AM	03/31/2022 09:50:00 AM	0.80	NaN	39603.0	West Campus PBD	App - Wallet	West Campus	05/04/2023 10:26:29 PM
...	...	...	...	...	...	...	...	...	...	...	...	...
2241387	633460299	Passport - app	105.0	01/24/2025 10:25:00 AM	01/24/2025 12:10:00 PM	3.90	NaN	39246.0	CORE	App - Credit Card	Core	02/08/2025 03:46:25 PM
2241388	633460241	Passport - app	30.0	01/24/2025 10:24:00 AM	01/24/2025 10:54:00 AM	1.40	NaN	39236.0	CORE	Apple Pay	Core	02/08/2025 03:46:25 PM
2241389	633460168	Passport - app	75.0	01/24/2025 10:25:00 AM	01/24/2025 11:40:00 AM	2.90	NaN	39461.0	Non-Core	App - Credit Card	Non-Core	02/08/2025 03:46:25 PM
2241390	633460063	Passport - app	75.0	01/24/2025 10:25:00 AM	01/24/2025 11:40:00 AM	2.90	NaN	39602.0	West Campus PBD	App - Credit Card	West Campus	02/08/2025 03:46:25 PM



# Roulette



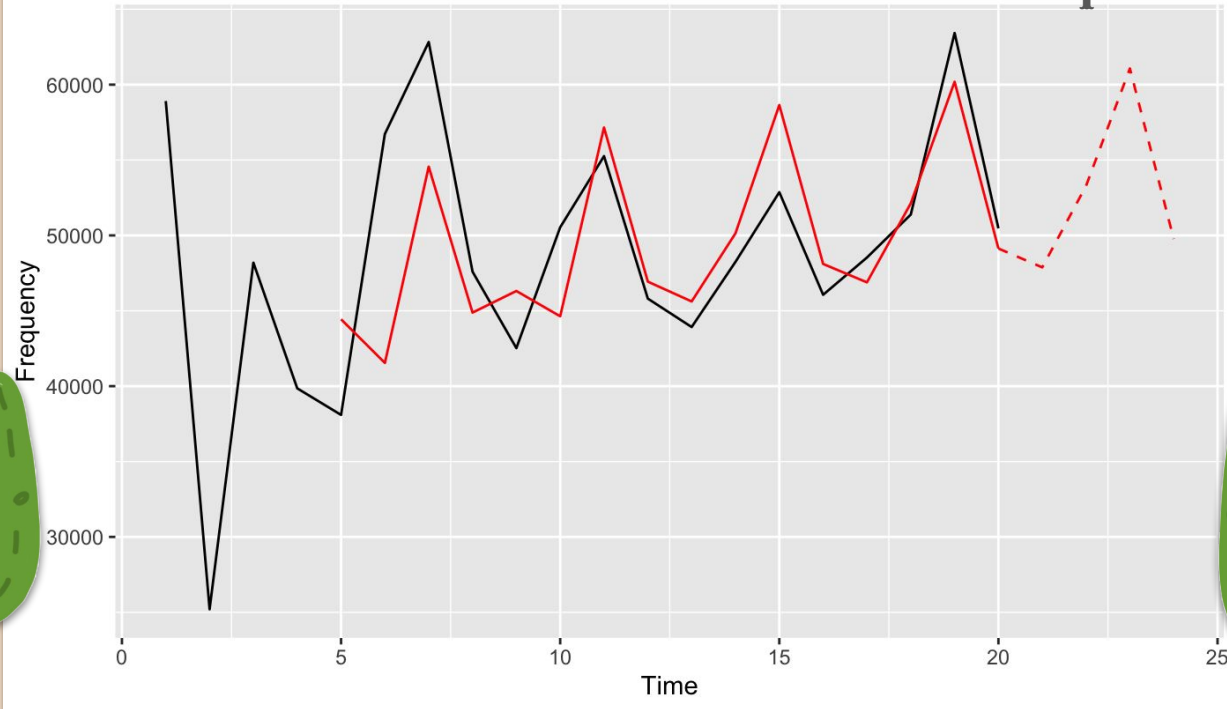


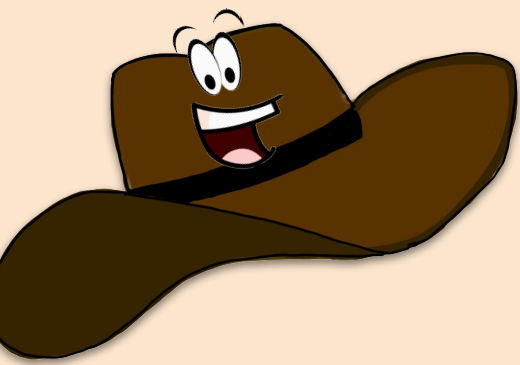
# Tumbleweed Trends



Frequency vs. Time with forecasts

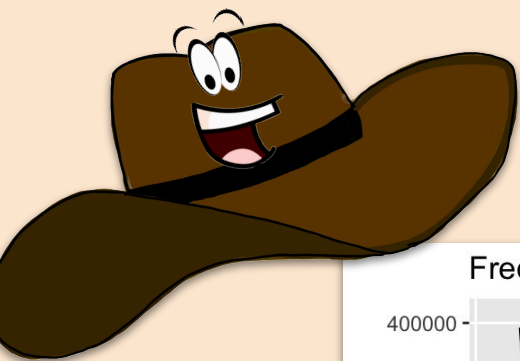
West Campus



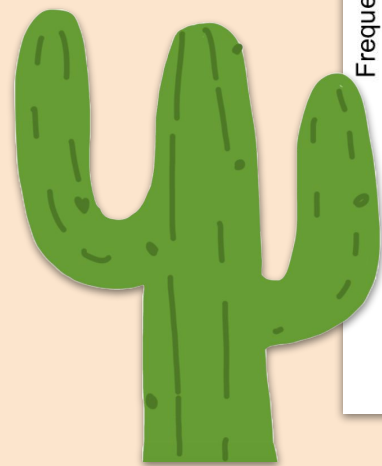
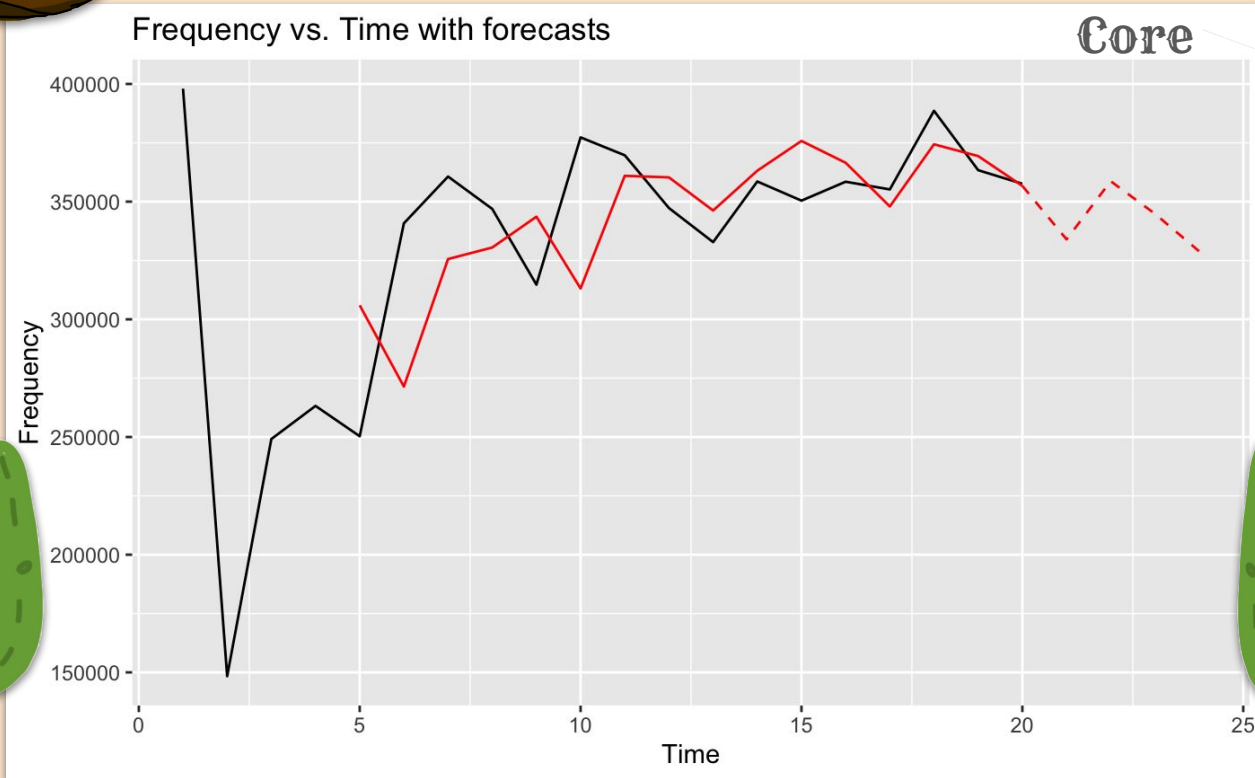


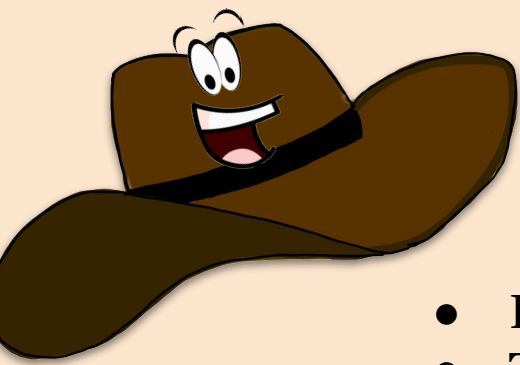
# Roulette





# Tumbleweed Trends

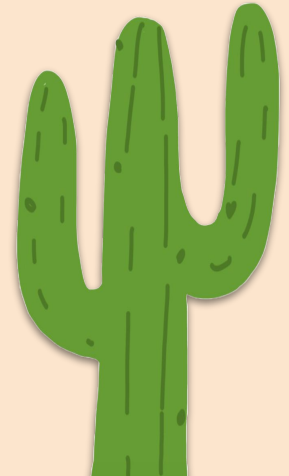




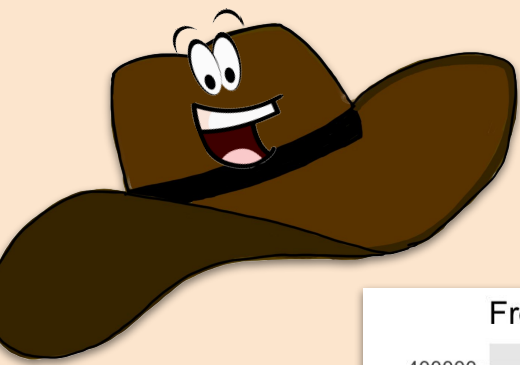
# Technology



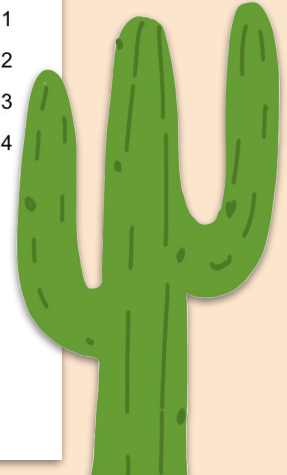
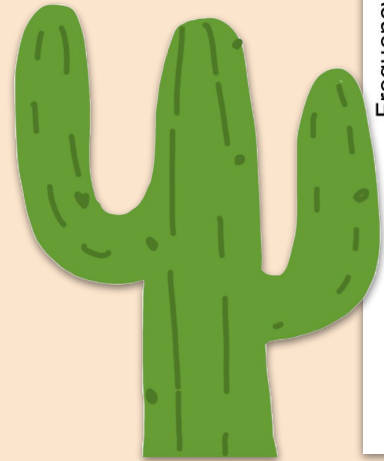
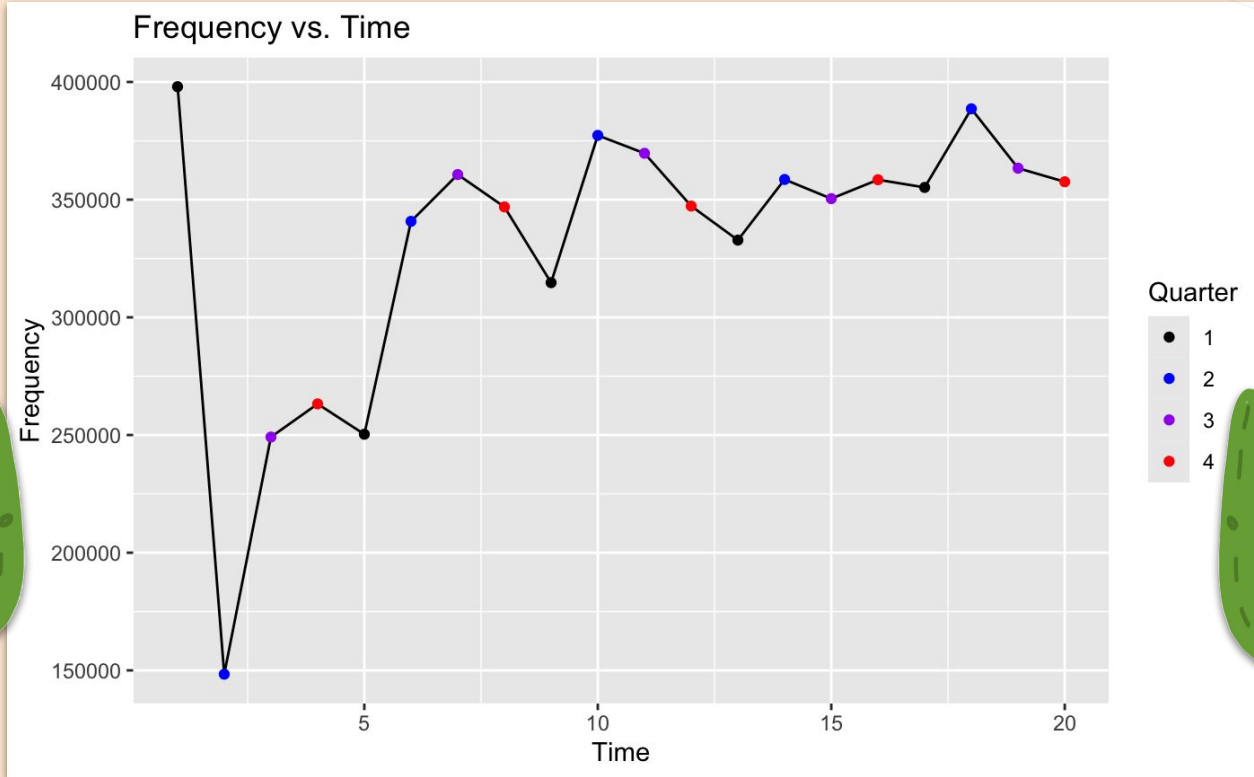
- Python, R
- Time Series Deterministic Model
- Methodology
  - Data engineering
  - STL decomposition
  - Adjust seasonality
  - Time Series Linear Model
  - Compute Ou-Sample Forecast
  - Validate assumptions

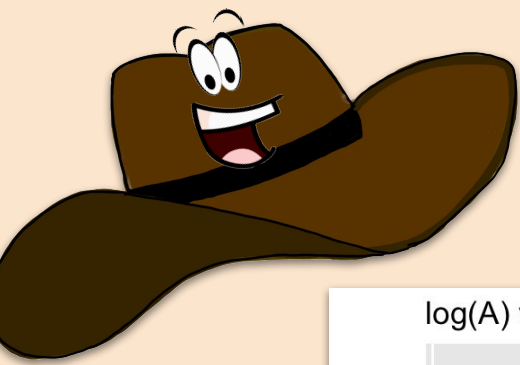




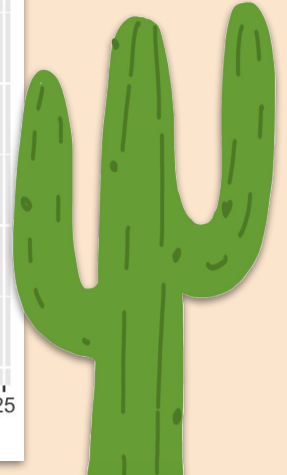
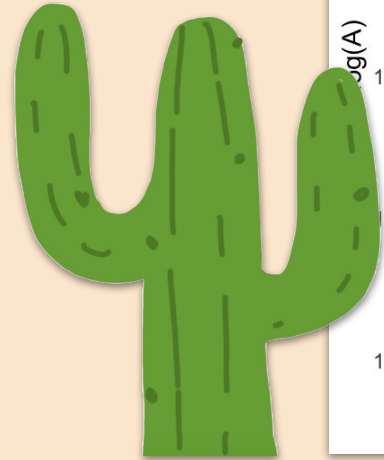
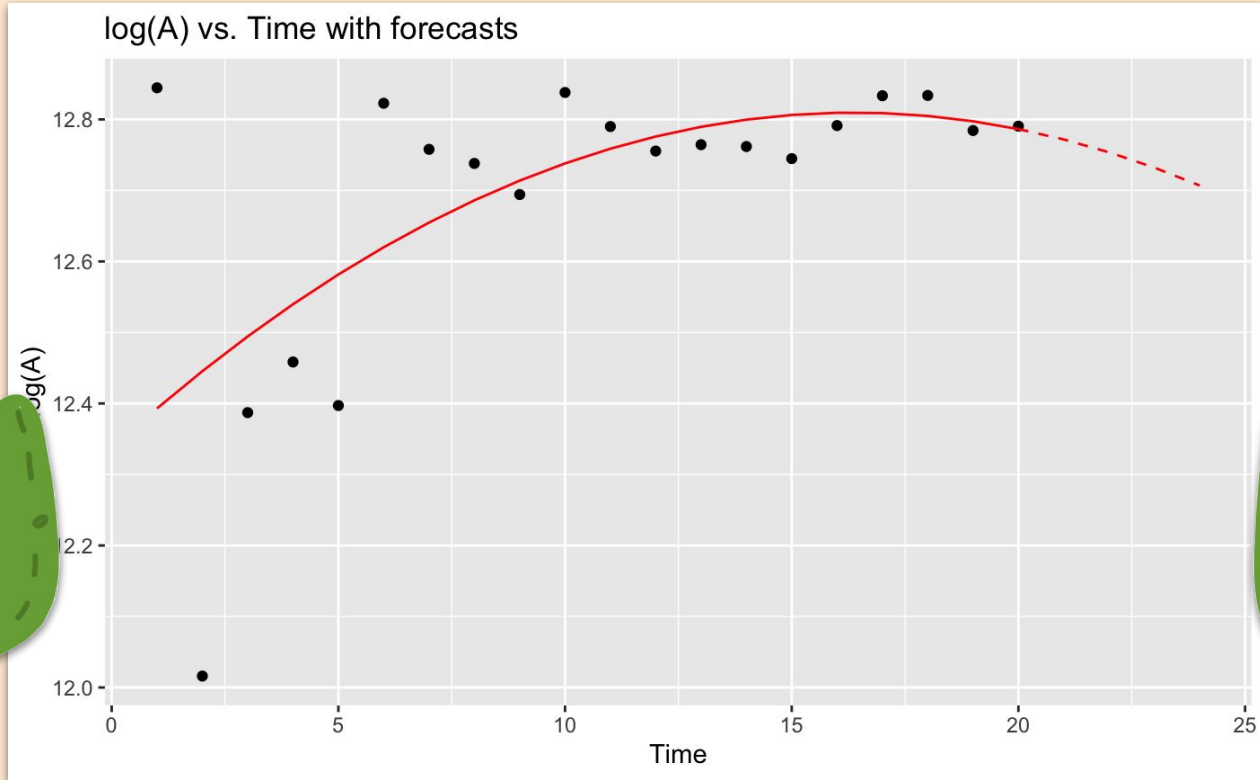


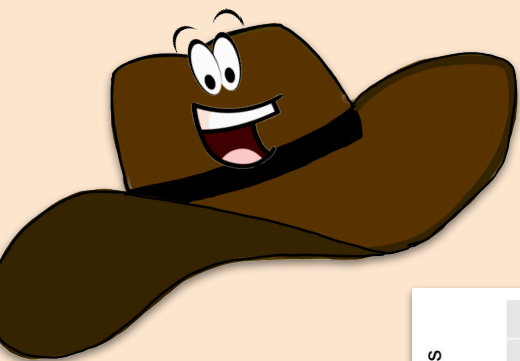
# Data Engineering



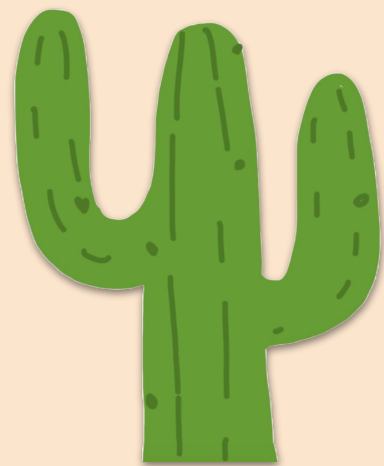
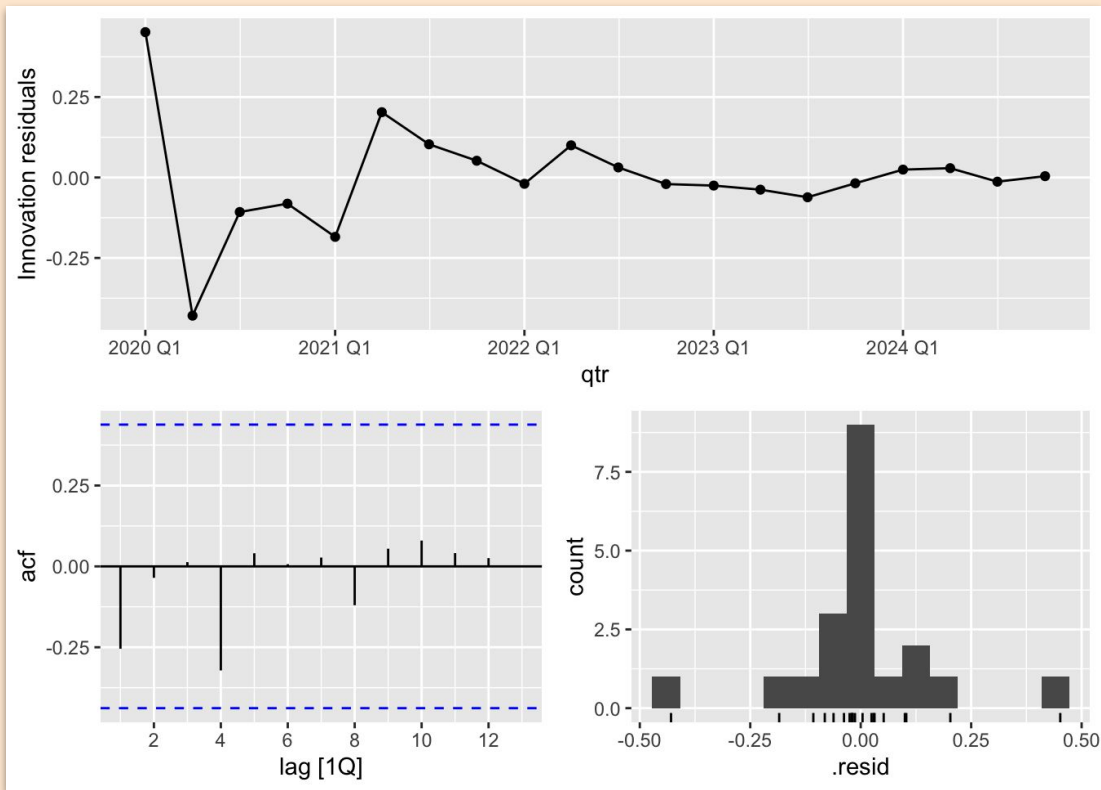


# Adjust Seasonality

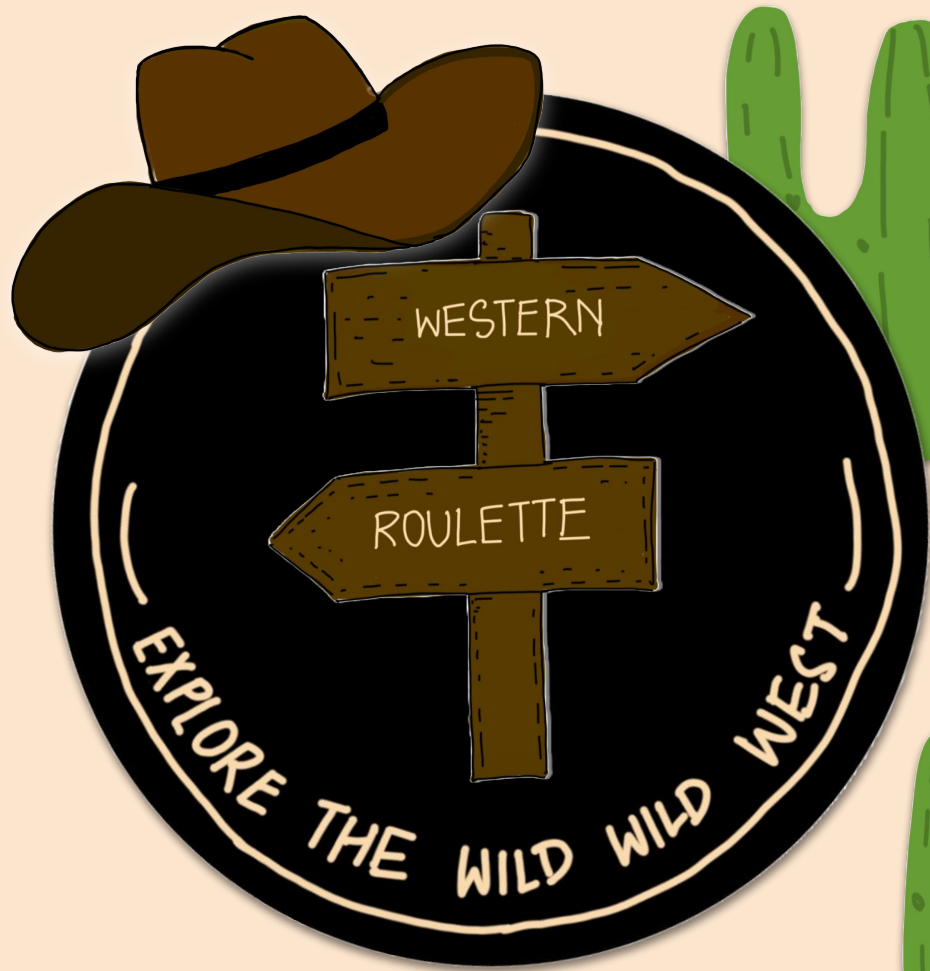


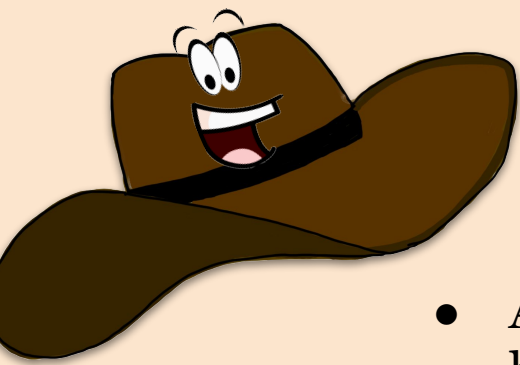


# I.I.D.



DESIGN

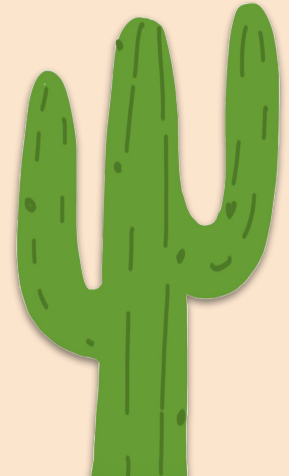




# Best Use of Data



- Anticipates future congestion based on historical data
- User customizable
- Trustworthy results
- Improves over time



T  
H  
A  
N  
K  
S



Y  
A  
L  
L