

# Denver Housing Affordability

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# The Issue We Explored

- Housing prices have been on the rise for the last decade in CO
- Median income hasn't seen a proportional increase.
- Will prices continue to rise to a point of unaffordability?



# Data Sources

- Income and population data from US Census Bureau (2014 - 2018)\*
- Housing data from City of Denver (2014-2018)



# Housing Market Trends & Affordability

- How have house **prices** in Denver **trended** over the last decade?
- How much house can someone in Denver **afford**?
- How do city residents stack up against these **market conditions**?



# Data Exploration and Analysis

- **Wrangle** messy and massive government data
- **Merge** 5 annual datasets
- **Plug** and play



# Database-AWS

- RDS

RDS > Databases

Databases

Group resources Modify Actions Restore from S3 Create database

Filter by databases

DB identifier	Role	Engine	Region & AZ	Size	Status	CPU	Current activity	Maintenance	VPC
corealestatedb	Instance	PostgreSQL	us-east-1f	db.t2.micro	Available	11.15%	0.00 sessions	none	vpc-060

- S3



gonbri-corealestate info

Objects Properties Permissions Metrics Management Access Points

Objects (3)

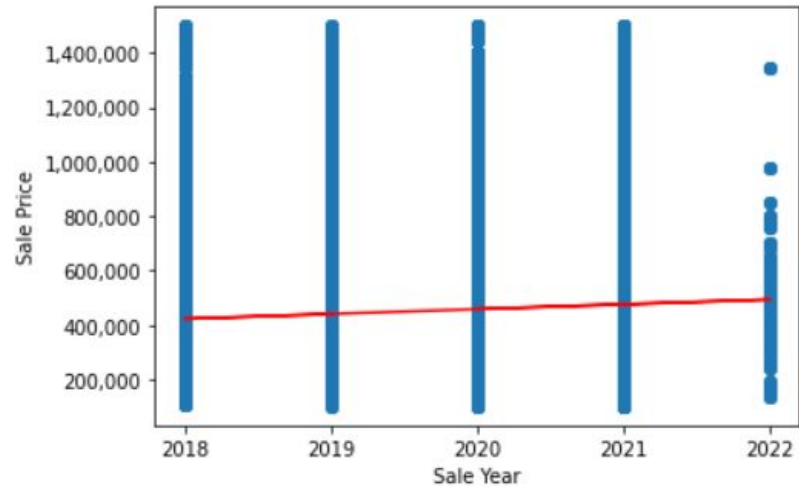
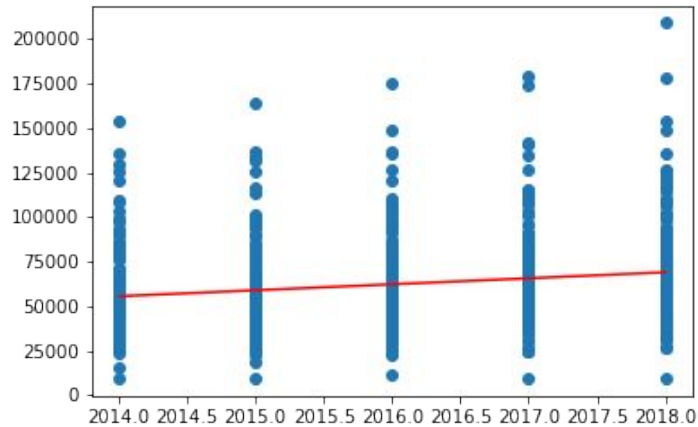
Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Copy S3 URI Copy URL Download Open Delete Actions Create folder Upload

Find objects by prefix

Name	Type	Last modified	Size	Storage class
clean_Denver_Population.csv	csv	February 26, 2022, 11:54:54 (UTC-07:00)	4.5 KB	Standard
clean_housing_v2.csv	csv	February 23, 2022, 20:09:39 (UTC-07:00)	1.5 MB	Standard
income_final.csv	csv	February 26, 2022, 11:57:21 (UTC-07:00)	61.0 KB	Standard

# Machine Learning Results



- Affordability - 28/36 Rule
- Logistic Regression Model Accuracy = 1.000

# Results Visualization



Tableau Demo



# Future analysis?

- Breaking out Median Income by Year in the comparison to Household Sales by year would provide even more accurate results
- Calculating a more realistic monthly mortgage cost (including interest, HOA, property tax, etc.) would yield more accurate number of households that can truly safely afford to own a home

# Questions?

