



ten atoms is an artist mgmt  
company in austin, texas! 🤘

# artist performance analytics for informed decision-making.



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## objective.

leverage data analytics  
techniques to analyze past  
artist performances and  
provide actionable insights  
for optimizing future tour  
planning

## processes.

1. data gathering + cleaning
2. exploratory data analysis
3. feature engineering
4. statistical modeling

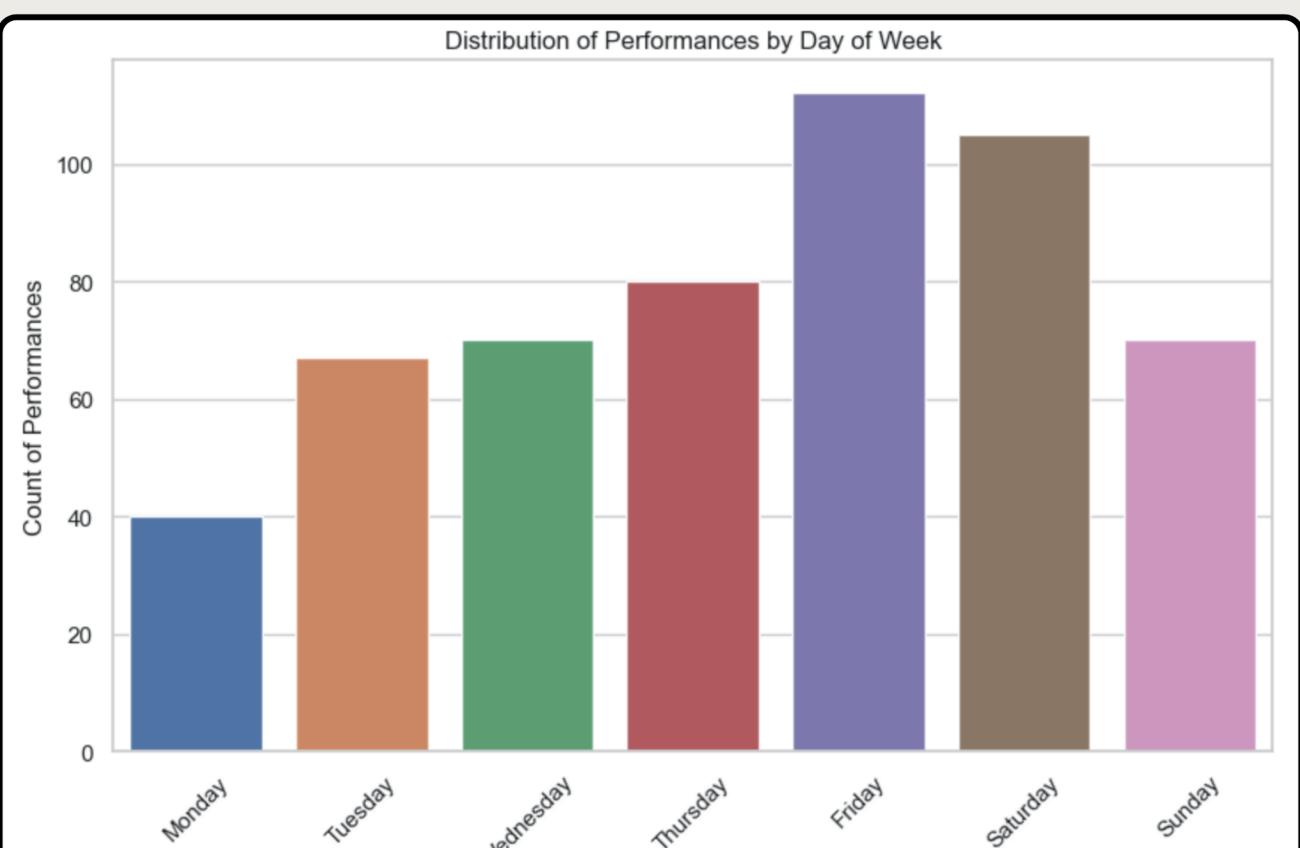
## data cleaning.

- duplicated()
- is null().sum()

## columns dictionary.

- date: date of show
- artist name of artist
- city: city of show
- region/state/province: region/state/province of show
- country: country of show
- venue: venue name of show
- capacity: max # of seats
- tickets sold: # of sold tickets
- tickets left: # of unsold tickets

## feature engineering.



day of week feature + sold out column

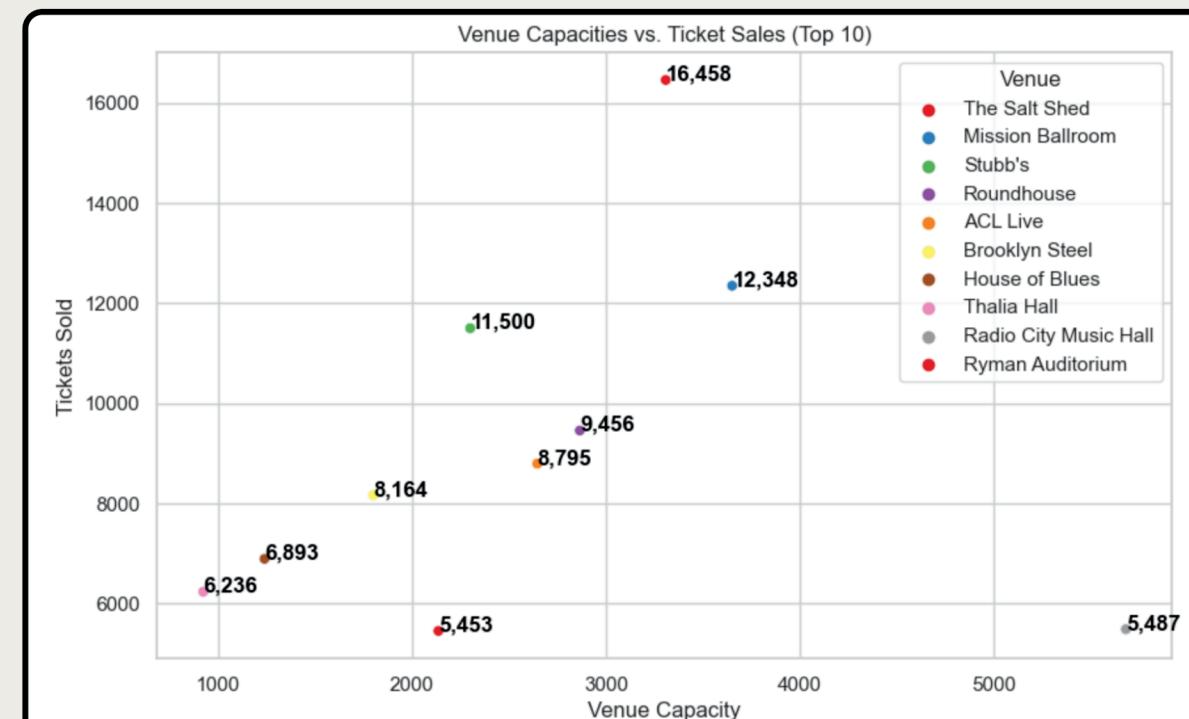
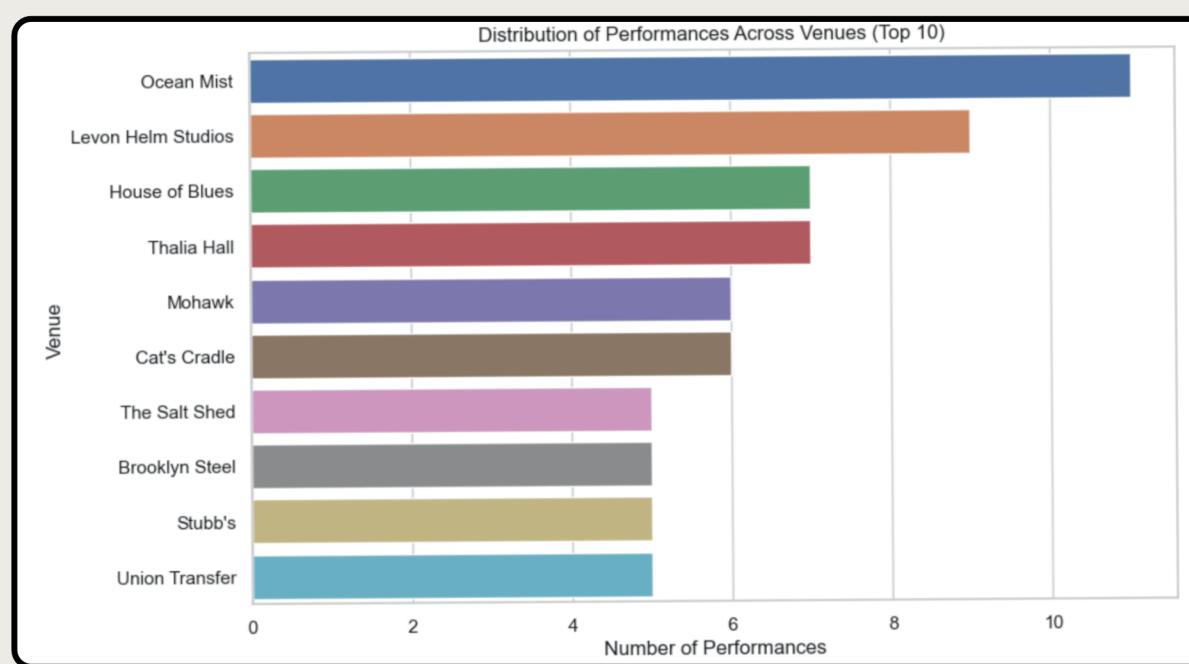
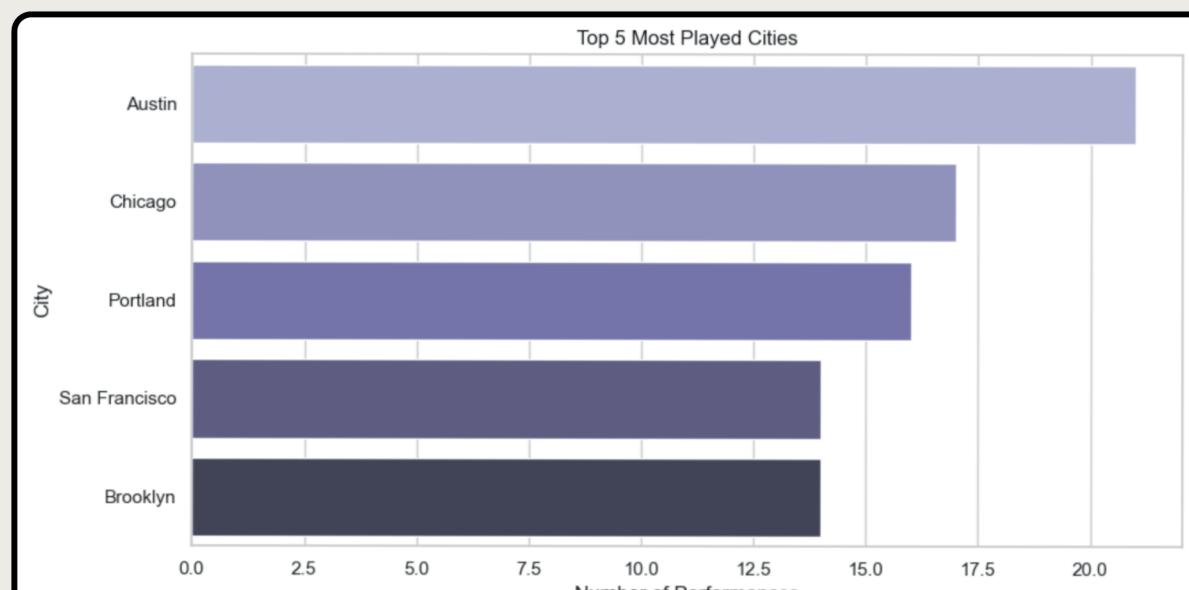
```
# Calculate the number of tickets left
artists['Tickets Left'] = artists['Capacity'] - artists['Tickets Sold']

# Create a new binary column indicating sold-out status
artists['Sold Out'] = (artists['Tickets Left'] == 0).astype(int)

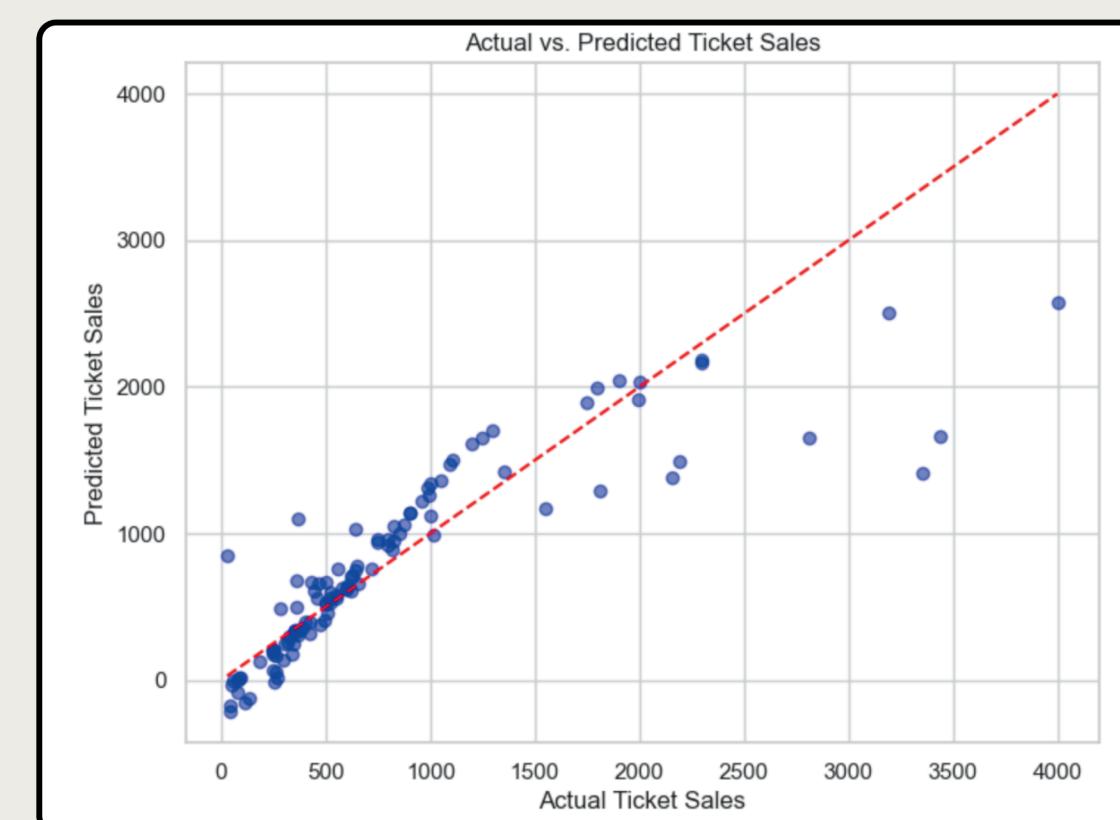
artists.head()
```

|   | Date       | Artist | City        | Region/State/Province | Country       | Venue               | Capacity | Tickets Sold | Tickets Left | DayOfWeek | Month | Year | Sold Out |
|---|------------|--------|-------------|-----------------------|---------------|---------------------|----------|--------------|--------------|-----------|-------|------|----------|
| 0 | 2019-05-15 | Band A | Brooklyn    | New York              | United States | Knitting Factory    | 325.0    | 325.0        | 0.0          | Wednesday | May   | 2019 | 1        |
| 1 | 2019-06-21 | Band A | Austin      | Texas                 | United States | Antone's            | 400.0    | 400.0        | 0.0          | Friday    | June  | 2019 | 1        |
| 2 | 2019-06-28 | Band A | Dallas      | Texas                 | United States | The Kessler Theater | 600.0    | 508.0        | 92.0         | Friday    | June  | 2019 | 0        |
| 3 | 2019-06-29 | Band A | Bentonville | Arkansas              | United States | Crystal Bridges     | 2000.0   | 1870.0       | 1813.0       | Saturday  | June  | 2019 | 0        |
| 4 | 2019-07-04 | Band A | Toronto     | Ontario               | Canada        | Drake Hotel         | 200.0    | 170.0        | 30.0         | Thursday  | July  | 2019 | 0        |

## exploratory analysis insights.



## statistical modeling.



features used

- venue
- capacity
- city
- tickets left

random forest  
regressor

## recommendations.

- cont. booking in austin!
- the salt shed is the best venue!
- capacity ≠ ticket sales!
- research ocean mist venue!
- band c needs more traction!