

# Tourism and Hospitality Management System

## **Project Authors:**

1. Naman Gupta: 002729751
2. Rahul GR: 002767096
3. Dipika Mohanty: 002770528

## Contents

1.	Overview .....	3
2.	Data Gathering and Scraping .....	3
A.	Destinations: .....	3
B.	Hotels: .....	4
C.	Attractions: .....	5
D.	Restaurant:.....	6
3.	Data Munging.....	6
A.	Destinations: .....	7
B.	Attractions: .....	7
C.	Restaurant:.....	8
D.	Hotels: .....	8
4.	Data Visualizations .....	8
A.	Destinations: .....	9
B.	Attractions: .....	10
C.	Restaurant:.....	12
D.	Hotels: .....	12
E.	Distinct restaurants with geographical data.....	14
F.	Distinct Hotels with geographical Data.....	15
G.	Distinct Attractions with city geographical data.....	16
5.	Database .....	17
A.	Entity Relationship Diagram: .....	17
B.	Target - Azure SQL Database.....	17
C.	DDL Commands for Tables:.....	17
D.	List of Tables created in SQL Database: .....	18
	Used Cases from Database .....	23

## 1. Overview

As an industry, Tourism, and Hospitality are important for the country's economic growth. However, from a tourist's point of view, planning out travel has always been a hassle and a time taking process. Through this project, we would like to build a Database Management System that would suffice all the challenges that a tourist faces in planning a trip and finding accommodation. This project aims to develop a database consisting of tourist attractions, hotels, restaurants, tour guides, tour packages, etc

## 2. Data Gathering and Scraping

We listed out the required data components to achieve the expected database. Then, looked to gather the data from multiple websites, and further used feasible options to scrape the data through BeautifulSoup, SelectorLib, etc.

### A. Destinations:

```

1 import requests
2 from bs4 import BeautifulSoup as soup
3 import pandas as pd

1 def get_bs_objects(url):
2     html = requests.get(url)
3     if html.status_code == 200:
4         bsobj = soup(html.content,'lxml')
5         return bsobj
6     else:
7         return None

1 def get_bs_object_df(bsobj,destinations,ratings,tourist_attractions_count,tourist_attractions_rank,
2                     best_time,descriptions,dict_values):
3
4     for title in bsobj.findAll('h3',{'class':'card-heading'}):
5         destinations.append(title.text.strip())
6
7     for rating in bsobj.findAll('span',{'class':'rating-badge'}):
8         ratings.append(rating.b.text.strip() + rating.span.text.strip())
9     for i in range(len(destinations)-len(ratings)):
10        ratings.append('Not known')
11
12    for count in bsobj.findAll('div',{'class':'card-body'}):
13        try:
14            tourist_attractions_count.append(count.p.text.strip().split('\n')[-1].strip())
15        except:
16            pass
17
18    for count in bsobj.findAll('div',{'class':'card-body'}):
19        try:
20            tourist_attractions_rank.append(count.p.text.strip().split('\n')[0].strip())
21        except:
22            pass
23
24    for best in bsobj.findAll('p',{'class':'mb-3'}):
25        best_time.append(best.text.split(':')[1].strip())
26
27    for i in range(len(destinations)-len(best_time)):
```

```

30     for desc in bsobj.findAll('p',{'class':'card-text'}):
31         descriptions.append(desc.text.strip())
32
33     df_destinations = pd.DataFrame.from_dict(dict_values)
34
35     return df_destinations

```

```

1 list_urls = ['https://www.holidify.com/country/usa/places-to-visit.html',
2 'https://www.holidify.com/country/usa/places-to-visit.html?pageNum=1',
3     'https://www.holidify.com/country/usa/places-to-visit.html?pageNum=2']
4
5 destinations,ratings,tourist_attractions_count,tourist_attractions_rank,best_time,descriptions = ([] for i in range(6))
6 dict_values = {'destination':destinations,'rating':ratings,'rank':tourist_attractions_rank,'description':descriptions,
7     'tourist_attractions_count':tourist_attractions_count,'best_time_to_go':best_time}
8
9 for url in list_urls:
10     print(url)
11     bsobj = get_bs_objects(url)
12     df_destinations = get_bs_object_df(bsobj,destinations,ratings,tourist_attractions_count,tourist_attractions_rank,
13     best_time,descriptions,dict_values)

```

<https://www.holidify.com/country/usa/places-to-visit.html>  
<https://www.holidify.com/country/usa/places-to-visit.html?pageNum=1>  
<https://www.holidify.com/country/usa/places-to-visit.html?pageNum=2>

## B. Hotels:

1. Search for Hotels on Booking.com on the conditions like Location, Check In Date, Room Type, Number of People, etc.
2. Copy the Search Result URL, download the URLs using python requests and pass it to hotel scraper python code.
3. Parse HTML using Selectorlib Template to extract the fields like Name, Location, Room Type, etc from the website.
4. Scraper will then save the data to a CSV file

Hotels data scraper will extract the following data Hotel Name, Hotel Location, Type of Room, Price, Price For (eg: 1 night, 2 Adults), Bed Type, Overall Rating, Rating Tile, Number of Reviews, Link

*Code:*

```

from selectorlib import Extractor
import requests
from time import sleep
import csv

# Create an Extractor by reading from the YAML file
e = Extractor.from_yaml_file('booking.yml')

def scrape(url):
    headers = {
        'Connection': 'keep-alive',
        'Pragma': 'no-cache',
        'Cache-Control': 'no-cache',
        'DNT': '1',
        'Upgrade-Insecure-Requests': '1',
        # You may want to change the user agent if you get blocked
        'User-Agent': 'Mozilla/5.0 (Windows NT 10.0; WOW64) AppleWebKit/537.36 (KHTML,
like Gecko) Chrome/107.0.0.0 Safari/537.36',
        'Accept':
'text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8
,application/signed-exchange;v=b3;q=0.9',

```

```

'Referer': 'https://www.booking.com/index.en-gb.html',
'Accept-Language': 'en-GB,en-US;q=0.9,en;q=0.8',
}

# Download the page using requests
print("Downloading %s"%url)
r = requests.get(url, headers=headers)
# Pass the HTML of the page and create
return e.extract(r.text,base_url=url)

with open("urls.txt",'r') as urllist, open('data.csv','w') as outfile:
    fieldnames = [
        "name",
        "location",
        "beds",
        "rating",
        "rating_title",
        "number_of_ratings",
        "price",
        "price_for",
        "image",
        "url"
    ]
    writer = csv.DictWriter(outfile, fieldnames=fieldnames,quoting=csv.QUOTE_ALL)
    writer.writeheader()
    for url in urllist.readlines():
        data = scrape(url)
        if data:
            for h in data['hotel']:
                writer.writerow(h)

```

### C. Attractions:

1. Search for attractions in Google with conditions like Location, city, state etc.
2. Copy the Search Result URL, download the Url's using python requests and pass it to attraction scraper python code.
3. Parse HTML using Selectorlib Template to extract the fields like Attraction Name, Location, rating, number of reviews, etc from the website.
4. Scraper will then save the data to a CSV file

Attractions data scraper will extract the following data name, rating, reviews\_count, description, city, and state

#### *Code:*

```

from selectorlib import Extractor
import requests
from time import sleep
import csv

# Create an Extractor by reading from the YAML file
e = Extractor.from_yaml_file('booking.yml')

def scrape(url):
    headers = {
        'Connection': 'keep-alive',
        'Pragma': 'no-cache',

```

```

'Cache-Control': 'no-cache',
'DNT': '1',
'Upgrade-Insecure-Requests': '1',
# You may want to change the user agent if you get blocked
'User-Agent': 'Mozilla/5.0 (Windows NT 10.0; WOW64) AppleWebKit/537.36 (KHTML,
like Gecko) Chrome/107.0.0.0 Safari/537.36',
'Accept':
'text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8
,application/signed-exchange;v=b3;q=0.9',

'Referer':'https://www.google.com',
'Accept-Language': 'en-GB,en-US;q=0.9,en;q=0.8',
}

# Download the page using requests
print("Downloading %s"%url)
r = requests.get(url, headers=headers)
# Pass the HTML of the page and create
return e.extract(r.text,base_url=url)

with open("urls.txt",'r') as urllist, open('data.csv','w') as outfile:
    fieldnames =
        [
            "name",
            "rating",
            "reviews_count",
            "description",
            "image"
        ]
    writer = csv.DictWriter(outfile, fieldnames=fieldnames,quoting=csv.QUOTE_ALL)
    writer.writeheader()
    for url in urllist.readlines():
        data = scrape(url)
        if data:
            for h in data['attraction_list']:
                writer.writerow(h)

```

#### D. Restaurant:

Restaurant data from USA cities are extracted and cleansed from the below dataset source from Kaggle.

<https://www.kaggle.com/datasets/siddharthmandgi/tripadvisor-restaurant-recommendation-data-usa>

### 3. Data Munging

Data cleaning and preparation for SQL DB is done through python by reading the files in CSV format and transforming them based on the requirement.

### A. Destinations:

```

1 # reading the CSV raw data thorough pandas
2 df_dest = pd.read_csv(r'C:\Users\naman\Downloads\DMDDA3\DMDDA3\Top Destinations\Input_US_Destinations.csv')
3 df_dest.head(2)
4
5 # data cleaning for tourist attractions
6 df_dest['destination'] = df_dest.apply(lambda row: row['destination'].split('.')[1],axis=1)
7 df_dest['rating'] = df_dest.apply(lambda row: row['rating'].split('/')[0],axis=1)
8 df_dest['rank'] = df_dest.apply(lambda row: row['rank'].split(' ')[0],axis=1)
9 df_dest['tourist_attractions_count'] = df_dest.apply(lambda row: row['tourist_attractions_count'].split(' ')[0],axis=1)
10 df_dest['rating'] = df_dest['rating'].replace('Not known', 0)
11 df_dest['best_time_to_go'] = df_dest['best_time_to_go'].replace('Not known','Best time not available')
12
13 # dictionary for data type modifications
14 dict_dtype = {
15     'destination':str,
16     'rating':float,
17     'rank':int,
18     'description':str,
19     'tourist_attractions_count':int,
20     'best_time_to_go':str,
21 }
22 # iterating the dictionary keys to change datatypes as per the required format
23 for key in dict_dtype.keys():
24     df_dest[key] = df_dest[key].astype(dict_dtype[key])

```

### B. Attractions:

```

#Data Source from python scraper
df_attr = pd.read_csv(r'C:\Users\naman\PycharmProjects\DMDDA3\US_Attractions.csv')
df_attr.head()

#Data Wrangling
df_attr['reviews_count'] = df_attr['reviews_count'].str[1:-1].str.replace(',','')
df_attr = df_attr.drop(columns = 'image')
df_attr['rating'] = df_attr['rating'].fillna(0)
df_attr['reviews_count'] = df_attr['reviews_count'].fillna(0)
df_attr.drop_duplicates(subset=['name'])

# Conversion of Data types
dict_dtype = {
    'name':str,
    'rating':float,
    'reviews_count':int,
    'description':str,
    'city':str,
}
for key in dict_dtype.keys():
    print(key)
    df_attr[key] = df_attr[key].astype(dict_dtype[key])

```

### C. Restaurant:

```
#Data Source
df_rest = pd.read_csv(r'/Users/dipikam/Desktop/Input_US_Restaurants.csv')
df_rest.head()

#Data Wrangling
df_rest['City'] = df_rest.apply(lambda row: row['Location'].split(',')[0],axis=1)
df_rest['State'] = df_rest.apply(lambda row: row['Location'].split(',')[1],axis=1)
df_rest['Reviews'] = df_rest.apply(lambda row: row['Reviews'].split('of')[0],axis=1)
df_rest['No of Reviews'] = df_rest.apply(lambda row: row['No of Reviews'].split(' ')[0],axis=1)

df_rest['Comments'] = df_rest['Comments'].fillna('No comments')
print(df_rest['Comments'].unique())
print(df_rest['Menu'].unique())
df_rest['Menu'] = df_rest['Menu'].fillna('Check The Website for a Menu')

#Data type conversions
dict_dtype = {
    'Name':str,
    'Street Address':str,
    'Type':str,
    'Reviews':float,
    'No of Reviews':int,
    'Comments':str,
    'Contact Number':str,
    'Trip_advisor Url':str,
    'Menu':str,
    'City':str,
    'State':str
}

for key in dict_dtype.keys():
    print(key)
    df_rest[key] = df_rest[key].astype(dict_dtype[key])
```

### D. Hotels:

```
#Data Source from python scraper
df_hotels = pd.read_csv(r'C:\Users\DELL\Desktop\DMDD_Assignment3\US_Hotels.csv')
df_hotels.head()

#Data Wrangling
df_hotels['rating'] = df_hotels.apply(lambda row: row['rating'].split(' ')[0],axis=1)
df_hotels['price'] = df_hotels['price'].str.replace('D', '')
df_hotels[['Duration', 'Number of Occupants']] = df_hotels['price_for'].str.split(",", expand = True)
df_hotels['number_of_ratings'] = df_hotels['number_of_ratings'].str.replace('reviews','')
df_hotels['number_of_ratings'] = df_hotels['number_of_ratings'].str.replace('review','')
df_hotels['number_of_ratings'] = df_hotels['number_of_ratings'].str.replace(',','')
df_hotels['number_of_ratings'] = df_hotels['number_of_ratings'].fillna(0)
df_hotels['rating'] = df_hotels['rating'].str.strip().replace('','0')
df_hotels['rating_title'] = df_hotels['rating_title'].str.replace('Review score','Not Available')
df_hotels['location'] = df_hotels.apply(lambda row: row['location'].split(',')[-1],axis=1)
df_hotels['location']=df_hotels['location'].str.strip()

# Rename column names
df_hotels.columns = ["name","city","beds","rating","rating_title","number_of_ratings","price","price_for","image","url","duration"]

# Delete Column
del df_hotels['price_for']

# Conversion of Data types
dict_dtype = {
    'name':str,
    'city':str,
    'beds':str,
    'rating':float,
    'rating_title':str,
    'number_of_ratings':int,
    'price':int,
    'image':str,
    'url':str,
    'duration':str,
    'number_of_occupants':str
}

for key in dict_dtype.keys():
    print(key)
    df_hotels[key] = df_hotels[key].astype(dict_dtype[key])
```

## 4. Data Visualizations

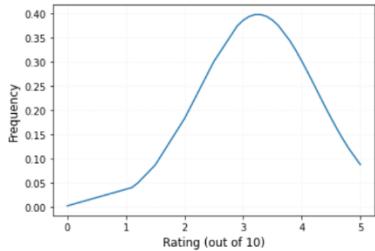
Data visualizations are conducted through python modules like matplotlib, seaborn and scipy. Additionally, various charts have been built on PowerBI specific to locations.

### A. Destinations:

```

1 # Distribution plot
2 # mean review count from dataframe
3 mu = np.mean(df_dest["rating"])
4 # standard deviation review count from dataframe
5 sigma = np.std(df_dest["rating"])
6 # numpy random normalizing
7 s = np.random.normal(mu, sigma, 1000)
8 # Calculating probability density function (PDF)
9 pdf = stats.norm.pdf(df_dest["rating"].sort_values(), mu, sigma)
10 # Drawing a graph
11 plt.plot(df_dest["rating"].sort_values(), pdf)
12 plt.xlabel("Rating (out of 10)", size=12)
13 plt.ylabel("Frequency", size=12)
14 plt.grid(True, alpha=0.1, linestyle="--")
15 # show plots
16 plt.show()

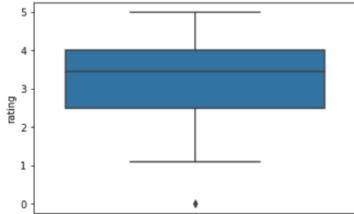
```



```

1 # box plot for rating in data
2 sns.boxplot(y="rating", data=df_dest);

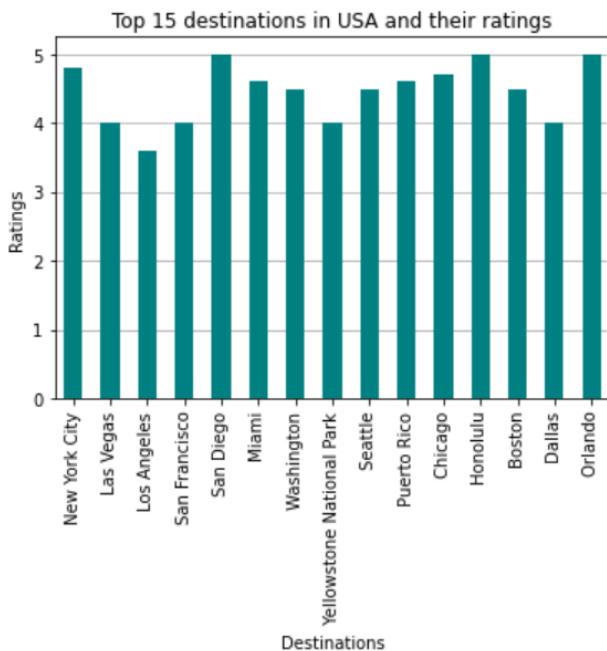
```



```

1 # top 15 destinations based on rank
2 top_destinations=df_dest.sort_values(by=['rank'], ascending=True).iloc[:15,:]
3 city_bar = top_destinations.plot.bar(x="destination", y="rating", rot=90, legend=None, color="teal", zorder=3)
4 # formatting the graph plot
5 plt.grid(which="major", axis="y", zorder=0)
6 plt.xticks(rotation=90)
7 plt.title("Top 15 destinations in USA and their ratings")
8 plt.ylabel("Ratings")
9 plt.xlabel("Destinations")

```

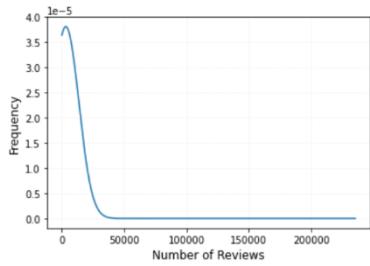


## B. Attractions:

```

1 # mean review count from dataframe
2 mu = np.mean(df_attr["reviews_count"])
3 # standard deviation review count from dataframe
4 sigma = np.std(df_attr["reviews_count"])
5
6 # numpy random normalizing
7 s = np.random.normal(mu, sigma, 1000)
8
9 # Calculating probability density function (PDF)
10 pdf = stats.norm.pdf(df_attr["reviews_count"].sort_values(), mu, sigma)
11
12 # Drawing a graph
13 plt.plot(df_attr["reviews_count"].sort_values(), pdf)
14 plt.xlabel("Price (in USD)", size=12)
15 plt.ylabel("Frequency", size=12)
16 plt.grid(True, alpha=0.1, linestyle="--")
17 # show plots
18 plt.show()

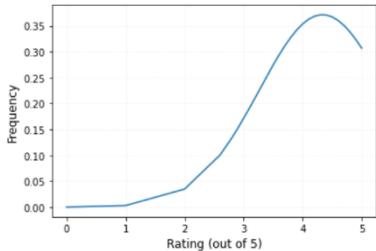
```



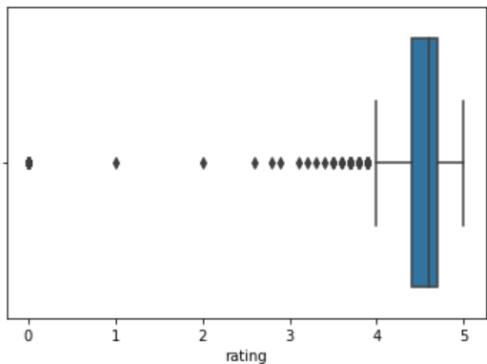
```

1 # mean rating from dataframe
2 mu = np.mean(df_attr["rating"])
3 # standard deviation rating from dataframe
4 sigma = np.std(df_attr["rating"])
5
6 # numpy random normalizing
7 s = np.random.normal(mu, sigma, 1000)
8
9 # Calculating probability density function (PDF)
10 pdf = stats.norm.pdf(df_attr["rating"].sort_values(), mu, sigma)
11
12 # Drawing a graph
13 plt.plot(df_attr["rating"].sort_values(), pdf)
14 plt.xlabel("Rating (out of 5)", size=12)
15 plt.ylabel("Frequency", size=12)
16 plt.grid(True, alpha=0.1, linestyle="--")
17 # show plots
18 plt.show()

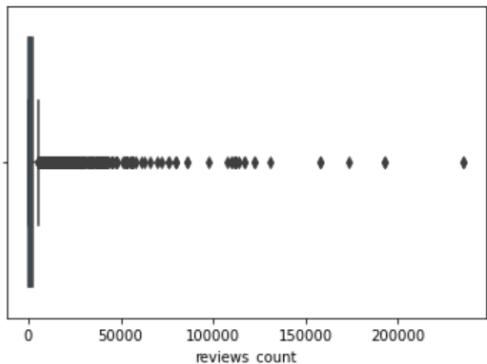
```



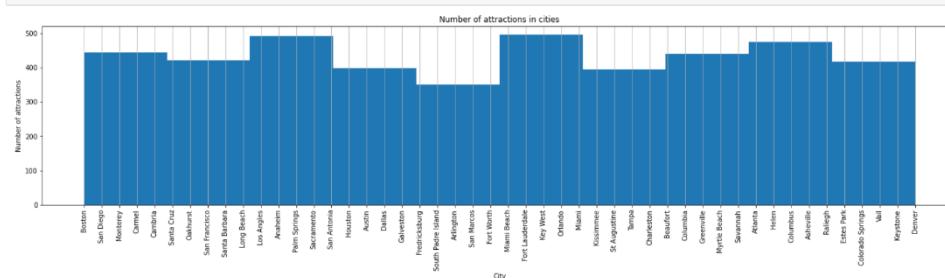
```
▶ sns.boxplot(x ='rating', data=df_attr)
]: <AxesSubplot:xlabel='rating'>
```



```
▶ sns.boxplot(x ='reviews_count', data=df_attr)
]: <AxesSubplot:xlabel='reviews_count'>
```

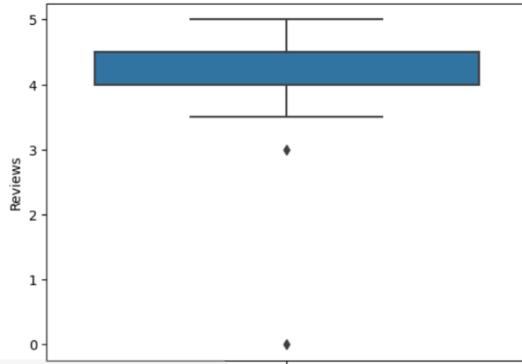


```
fig = plt.figure(figsize = (25,5))
ax = fig.gca()
df_attr['city'].hist(ax=ax)
plt.title('Number of attractions in cities')
plt.xlabel('City')
plt.ylabel('Number of attractions')
plt.xticks(rotation=90)
plt.grid(axis='y', alpha=0.5)
```

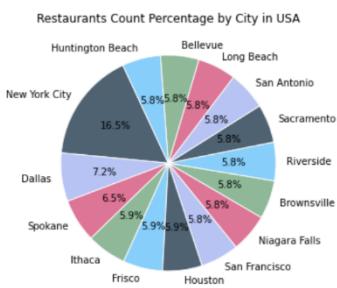


### C. Restaurant:

```
1 # box plot for ratings in data
2 sns.boxplot(y="Reviews", data=df_rest);
```

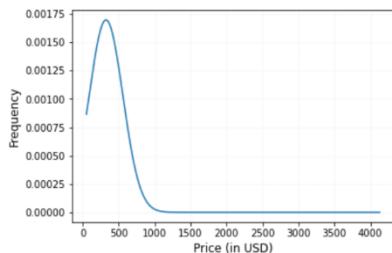


```
1 # Get restaurants count for each city
2 city_group = df_rest.groupby("City").count()
3 # Reset index
4 city_group = city_group.reset_index()
5 # Create new dataframe for city name and restaurant count
6 city_group = city_group[["City", "Name"]]
7 # Rename columns
8 city_group.rename(columns={"Name": "Restaurants Count"}, inplace=True)
9 restaurants_by_city = city_group.sort_values(by=['Restaurants Count'], ascending=False).iloc[:15,:]
10 |
11 # Create pie chart for hotel count by city
12 restaurants_count = restaurants_by_city["Restaurants Count"]
13 colors = ['#4F6272', '#B7C3F3', '#D07596', '#8EB897', '#87CEFA']
14 city_labels = restaurants_by_city["City"]
15 plt.figure(figsize=(12,9))
16 plt.pie(restaurants_count, labels=city_labels, wedgeprops = { 'linewidth' : 1, 'edgecolor' : 'white' }, colors=colors, start
17 plt.title("Restaurants Count Percentage by City in USA")
```



### D. Hotels:

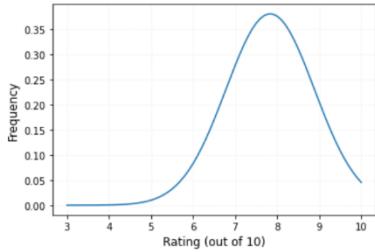
```
1 # mean price from dataframe
2 mu = np.mean(df_hotels["price"])
3 # standard deviation price from dataframe
4 sigma = np.std(df_hotels["price"])
5
6 # numpy random normalizing
7 s = np.random.normal(mu, sigma, 1000)
8
9 # Calculating probability density function (PDF)
10 pdf = stats.norm.pdf(df_hotels["price"].sort_values(), mu, sigma)
11
12 # Drawing a graph
13 plt.plot(df_hotels["price"].sort_values(), pdf)
14 plt.xlabel("Price (in USD)", size=12)
15 plt.ylabel("Frequency", size=12)
16 plt.grid(True, alpha=0.1, linestyle="--")
17 # show plots
18 plt.show()
```



```

1 # mean rating from dataframe
2 mu = np.mean(df_hotels["rating"])
3 # standard deviation rating from dataframe
4 sigma = np.std(df_hotels["rating"])
5
6 # numpy random normalizing
7 s = np.random.normal(mu, sigma, 1000)
8
9 # Calculating probability density function (PDF)
10 pdf = stats.norm.pdf(df_hotels["rating"].sort_values(), mu, sigma)
11
12 # Drawing a graph
13 plt.plot(df_hotels["rating"].sort_values(), pdf)
14 plt.xlabel("Rating (out of 10)", size=12)
15 plt.ylabel("Frequency", size=12)
16 plt.grid(True, alpha=0.1, linestyle="--")
17 # show plots
18 plt.show()

```



```

1 # Get hotel count for each city
2 city_group = df_hotels.groupby("city").count()
3 # Reset index
4 city_group = city_group.reset_index()
5 # Create new dataframe for city name and hotel count
6 city_group = city_group[["city", "name"]]
7 # Rename columns
8 city_group.rename(columns={"name": "Hotels Count"}, inplace=True)
9 hotels_by_city=city_group.sort_values(by=['Hotels Count'], ascending=False).iloc[:15,:]
10
11 # Create bar chart for hotel count by city
12 city_bar = hotels_by_city.plot.bar(x="city", y="Hotels Count", rot=90, legend=None, color="teal", zorder=3)
13 plt.grid(which="major", axis="y", zorder=0)
14 plt.xticks(rotation=45)
15 plt.title("Hotels Count by City in USA")
16 plt.ylabel("# of Hotels")

```



```

1 # Create pie chart for hotel count by city
2 hotels_count = hotels_by_city["Hotels Count"]
3 # colors = ["aqua", "lightblue", "gold", "olive", "turquoise"]
4 city_labels = hotels_by_city["city"]
5 plt.figure(figsize=(5,9))
6 plt.pie(hotels_count, labels=city_labels, startangle=115, autopct="%1.1f%%")
7 plt.title("Hotels Count Percentage by City in USA")

```

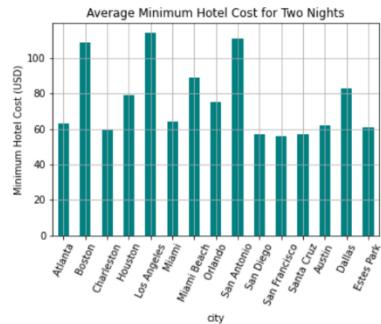
Text(0.5, 1.0, 'Hotels Count Percentage by City in USA')



```

1 # Get hotel count for each city
2 city_group = df_hotels.groupby("city").count()
3 # Reset index
4 city_group = city_group.reset_index()
5 # Create new dataframe for city name and hotel count
6 city_group = city_group[["city", "price"]]
7 hotels_by_city=city_group.sort_values(by=['price'], ascending=False).iloc[:15,:]
8
9
10 # Obtain the mean and standard deviation (STD)
11 price_mean = hotels_by_city.groupby(["city"]).mean()["price"]
12 price_std = hotels_by_city.groupby(["city"])["price"].std()
13 # Create new dataframe for mean values
14 mean_df = pd.DataFrame({"city":price_mean.index, "Price Mean (USD)":price_mean.values})
15 mean_df = mean_df.set_index("city")
16 # Create bar chart with y error bar
17 mean_df.plot(kind="bar", yerr=price_std.values, color="teal", legend=None)
18 plt.xticks(rotation=65)
19 plt.grid()
20 plt.title("Average Minimum Hotel Cost for Two Nights")
21 plt.ylabel("Minimum Hotel Cost (USD)")

```



## E. Distinct restaurants with geographical data

Create vw\_restaurantwithcity View to fetch restaurant details with geographical data from the city table

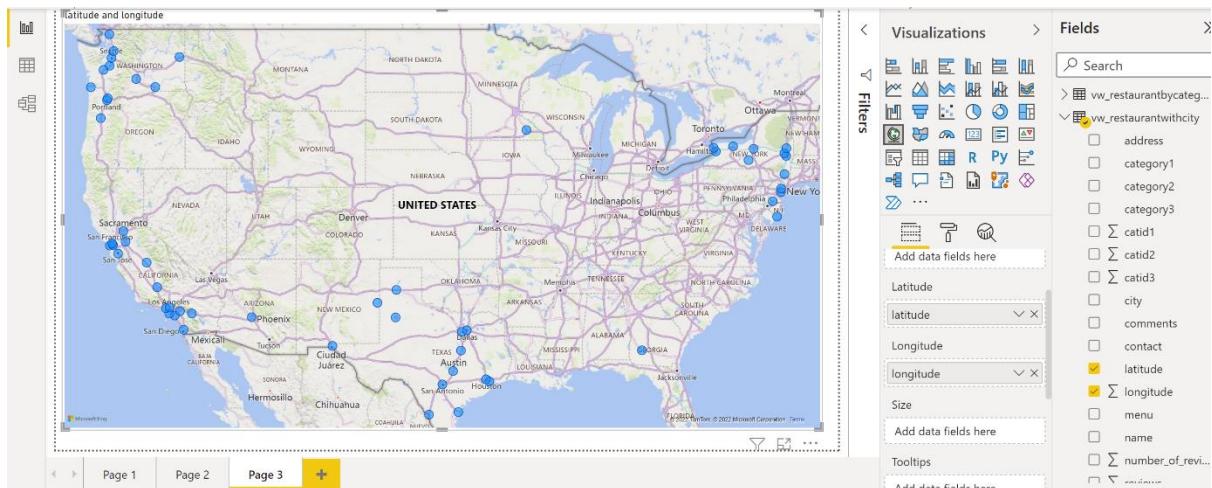
```

CREATE VIEW vw_restaurantwithcity
AS
Select h.* ,c.latitude,c.longitude, c.timezone
from [dbo].[restaurants_normalized] as h
INNER JOIN [dbo].[vw_city] as c
ON h.city=c.city

```

Results

menu	city	state	catid1	catid2	catid3	latitude	longitude	timezone	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Waco	TX	2	64	31.559900000	-97.188200000	America/Chicago	
w.tripadvisor.com/Restaurant_Review-g...	https://www.15churchrestaurant.com/saratoga-sprin...	Saratoga Springs	NY	2	71	43.067400000	-73.777500000	America/New_York	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	San Antonio	TX	2	64	29.463200000	-98.523800000	America/Chicago	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Brownsville	TX	2	9	25.997500000	-97.458000000	America/Matamoros	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Schenectady	NY	2	8	42.802500000	-73.927500000	America/New_York	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Bakersfield	CA	2	14	35.352900000	-119.035900000	America/Los_Angeles	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Saratoga Springs	NY	2	58	43.067400000	-73.777500000	America/New_York	
w.tripadvisor.com/Restaurant_Review-g...	http://www.317gr.com/menu-1	Syracuse	NY	2	20	33	43.040700000	-76.143700000	America/New_York
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Lubbock	TX	44	3	33.565700000	-101.887900000	America/Chicago	
w.tripadvisor.com/Restaurant_Review-g...	https://www.missioninn.com/d/missioninnresponsiv...	Riverside	CA	2	8	33.938100000	-117.394900000	America/Los_Angeles	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Long Beach	CA	2	64	33.977000000	-118.167000000	America/Los_Angeles	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Amarillo	TX	39	54	35.198400000	-101.831600000	America/Chicago	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Olympia	WA	2	59	47.041700000	-122.895900000	America/Los_Angeles	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Albany	NY	2	64	31.577600000	-84.176200000	America/New_York	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Albany	NY	2	64	42.666400000	-73.798700000	America/New_York	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Albany	NY	2	64	44.627200000	-123.096500000	America/Los_Angeles	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Irvine	CA	2	71	33.677200000	-117.773800000	America/Los_Angeles	
w.tripadvisor.com/Restaurant_Review-g...	http://www.99restaurants.com/menu	Albany	NY	2	8	31.577600000	-84.176200000	America/New_York	
w.tripadvisor.com/Restaurant_Review-g...	http://www.99restaurants.com/menu	Albany	NY	2	8	42.666400000	-73.798700000	America/New_York	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Oakland	CA	66	31	37.790400000	-122.216600000	America/Los_Angeles	
w.tripadvisor.com/Restaurant_Review-g...	Check The Website for a Menu	Bronx/Kingsbridge	NY	29	54	41.665000000	-73.921100000	America/New_York	



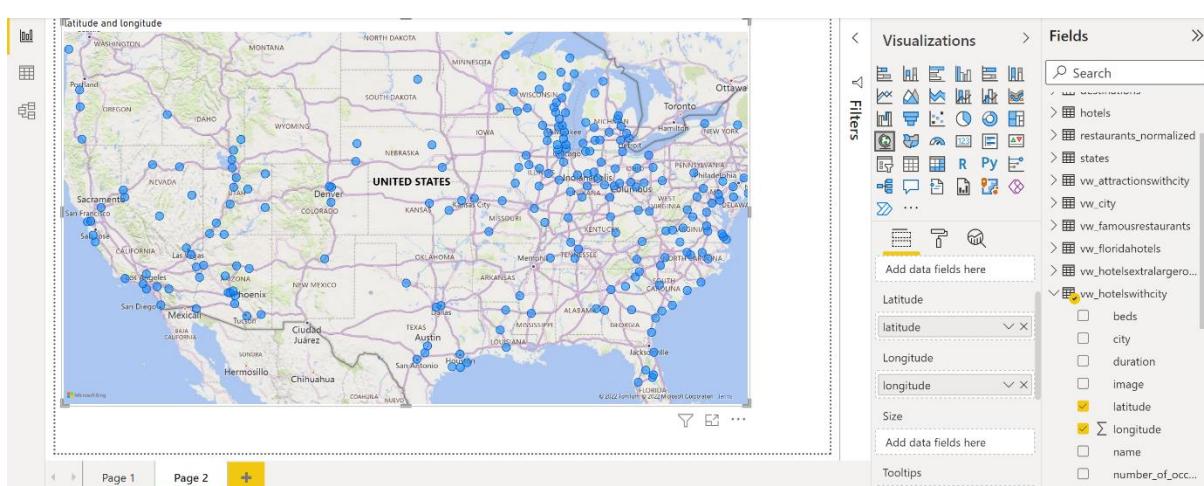
### F. Distinct Hotels with geographical Data

```
***** Script for SelectTopNRows command from SSMS *****/
CREATE VIEW vw_hotelswithcity
AS
Select h.* , c.latitude, c.longitude, c.timezone
from [dbo].[hotels] as h
INNER JOIN [dbo].[vw_city] as c
ON h.city=c.city
```

Results

	name	city	duration	number_of_occupants	beds	rating	rating_title	number_of_ratings	price	image
1	Pacific Inn Monterey	Monterey	2 nights	2 adults	1 large double bed	8.5	Very good	1033	242	https://cf.bstatic.com/xdata/image...
2	Hotel Pacific	Monterey	2 nights	2 adults	1 extra-large double bed	7.5	Good	2151	678	https://cf.bstatic.com/xdata/image...
3	Stage Coach Lodge	Monterey	2 nights	2 adults	1 extra-large double bed	8.5	Very good	1090	338	https://cf.bstatic.com/xdata/image...
4	El Castell Motel	Monterey	2 nights	2 adults	1 large double bed	8.3	Very good	1210	248	https://cf.bstatic.com/xdata/image...
5	Cannery Row Inn	Monterey	2 nights	2 adults	1 extra-large double bed	7.8	Good	1416	448	https://cf.bstatic.com/xdata/image...
6	The Monterey Hotel	Monterey	2 nights	2 adults	1 large double bed	6.9	Not Available	546	214	https://cf.bstatic.com/xdata/image...
7	Casa Munras Garden Hotel & Spa	Monterey	2 nights	2 adults	1 extra-large double bed	8.5	Very good	1267	480	https://cf.bstatic.com/xdata/image...
8	Hotel Abrego	Monterey	2 nights	2 adults	1 large double bed	8.5	Very good	1157	638	https://cf.bstatic.com/xdata/image...
9	Colton Inn	Monterey	2 nights	2 adults	1 extra-large double bed	8.2	Very good	525	428	https://cf.bstatic.com/xdata/image...
10	Americas Best Value Presidents Inn Monterey	Monterey	2 nights	2 adults	1 extra-large double bed	7.4	Good	1042	274	https://cf.bstatic.com/xdata/image...
11	Ramada by Wyndham Monterey	Monterey	2 nights	2 adults	1 large double bed	8.0	Very good	986	217	https://cf.bstatic.com/xdata/image...
12	Best Western Plus Monterey Inn	Monterey	2 nights	2 adults	1 extra-large double bed	8.4	Very good	1018	468	https://cf.bstatic.com/xdata/image...
13	Days Inn by Wyndham Monterey Downtown	Monterey	2 nights	2 adults	1 extra-large double bed	7.5	Good	834	248	https://cf.bstatic.com/xdata/image...
14	Travelodge by Wyndham Monterey Bay	Monterey	2 nights	2 adults	1 large double bed	6.8	Not Available	2990	192	https://cf.bstatic.com/xdata/image...
15	Monterey Plaza Hotel & Spa	Monterey	2 nights	2 adults	1 extra-large double bed	8.9	Fabulous	1114	1058	https://cf.bstatic.com/xdata/image...
16	Munras Inn	Monterey	2 nights	2 adults	1 extra-large double bed	8.3	Very good	556	377	https://cf.bstatic.com/xdata/image...
17	Monterey Pines Inn	Monterey	2 nights	2 adults	1 extra-large double bed	7.5	Good	1917	265	https://cf.bstatic.com/xdata/image...
18	Super 8 by Wyndham Monterey	Monterey	2 nights	2 adults	1 large double bed	7.6	Good	792	178	https://cf.bstatic.com/xdata/image...

Query executed successfully.



### G. Distinct Attractions with city geographical data

`CREATE VIEW vw_attractionswithcity  
AS  
Select DISTINCT h.* , c.latitude, c.longitude, c.timezone  
from [dbo].[attractions] as h  
INNER JOIN [dbo].[vw_city] as c  
ON h.city=c.city`

Results

	name	rating	reviews_count	description	city	latitude	longitude	timezone
1	Alley Cats Entertainment	4.3	2349	Bowling, rock climbing, laser tag & more	Arlington	32.699800000	-97.125000000	America/Chicago
2	Arlington Highlands	4.5	10704	nan	Arlington	32.699800000	-97.125000000	America/Chicago
3	Arlington Museum of Art	4.4	335	Showcase for contemporary Texan art	Arlington	32.699800000	-97.125000000	America/Chicago
4	Arlington Music Hall	4.7	666	nan	Arlington	32.699800000	-97.125000000	America/Chicago
5	Arlington Skatium	4.2	1264	Wooden roller rink with classes & arcade	Arlington	32.699800000	-97.125000000	America/Chicago
6	AT&T Stadium	4.7	33739	Home turf of the Dallas Cowboys	Arlington	32.699800000	-97.125000000	America/Chicago
7	Batman The Ride	4.9	7	nan	Arlington	32.699800000	-97.125000000	America/Chicago
8	Bicentennial Park	4.6	515	Community green space with trails	Arlington	32.699800000	-97.125000000	America/Chicago
9	Bolder Adventure Park at Epic Central	4.5	95	nan	Arlington	32.699800000	-97.125000000	America/Chicago
10	Bowman Springs Park	4.5	1313	Lakeside green space with a boat ramp	Arlington	32.699800000	-97.125000000	America/Chicago
11	Caddo Lake Barge	4.2	5	nan	Arlington	32.699800000	-97.125000000	America/Chicago
12	Catwoman Whip	4.3	24	Roller coaster	Arlington	32.699800000	-97.125000000	America/Chicago
13	Cedar Hill State Park	4.4	2902	Birding, biking, fishing & camping	Arlington	32.699800000	-97.125000000	America/Chicago
14	Central Bark Dog Park	4.6	350	nan	Arlington	32.699800000	-97.125000000	America/Chicago
15	Chaparral Antique Cars	4.8	12	nan	Arlington	32.699800000	-97.125000000	America/Chicago
16	Chisholm Park	4.7	1966	Sports fields, aquatics center & a pond	Arlington	32.699800000	-97.125000000	America/Chicago
17	Choctaw Stadium	4.7	16007	nan	Arlington	32.699800000	-97.125000000	America/Chicago
18	Clayton W Chandler Park	4.6	688	Park	Arlington	32.699800000	-97.125000000	America/Chicago
19	Cloud Bouncer	4.8	4	nan	Arlington	32.699800000	-97.125000000	America/Chicago
20	College Park Center	4.6	1334	nan	Arlington	32.699800000	-97.125000000	America/Chicago
21	Cowtown Segway ADVENTURES	4.9	213	nan	Arlington	32.699800000	-97.125000000	America/Chicago

Latitude and longitude

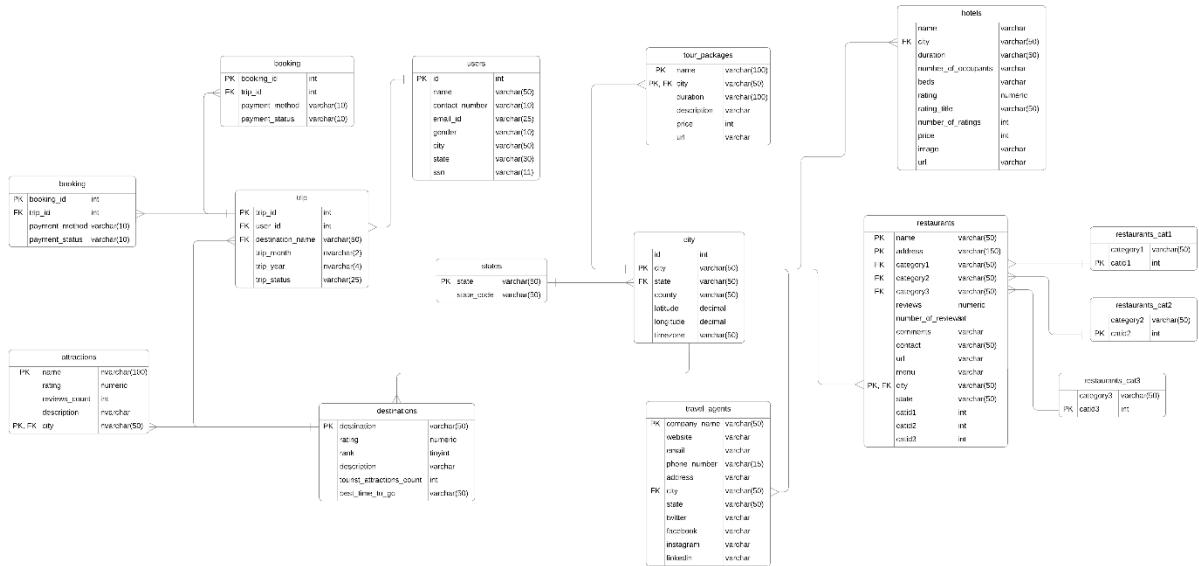
Fields

- city
- destinations
- hotels
- restaurants\_normalized
- states
- vw\_attractionswithcity
  - city
  - description
  - latitude
  - longitude
  - name
  - rating
  - reviews\_count
  - timezone
- vw\_city
- vw\_famousrestaurants
- vw\_floridahotels

## 5. Database

The Database design converts logical or conceptual data into physical storage (tables) of the target Database Management System.

### A. Entity Relationship Diagram:



### B. Target - Azure SQL Database

Server: tourismhospitality.database.windows.net

Database: TourismHospitality

The screenshot shows the Azure portal interface for the 'TourismHospitality' database. The left sidebar includes links for Overview, Activity log, Tags, Diagnose and solve problems, Getting started, Query editor (preview), Compute + storage, Connection strings, Properties, and Locks. The main content area displays the following details:

- Overview**: Shows the database was just created. It includes fields for Resource group (move), Status (Online), Location (East US), Subscription (move), Subscription ID (b2c9c177-eb74-4191-91e9-317260fcfc62), and Tags (edit).
- Essentials**: Shows Server name (tourismhospitality.database.windows.net), Elastic pool (No elastic pool), Connection strings (Show database connection strings), Pricing tier (Basic), and Earliest restore point (2022-12-14 00:54 UTC).

### C. DDL Commands for Tables:

The DDL commands used to CREATE and INSERT data have been provided in the document, mentioned below:



TourismHospitality\_CREATE.sql (Command Line)

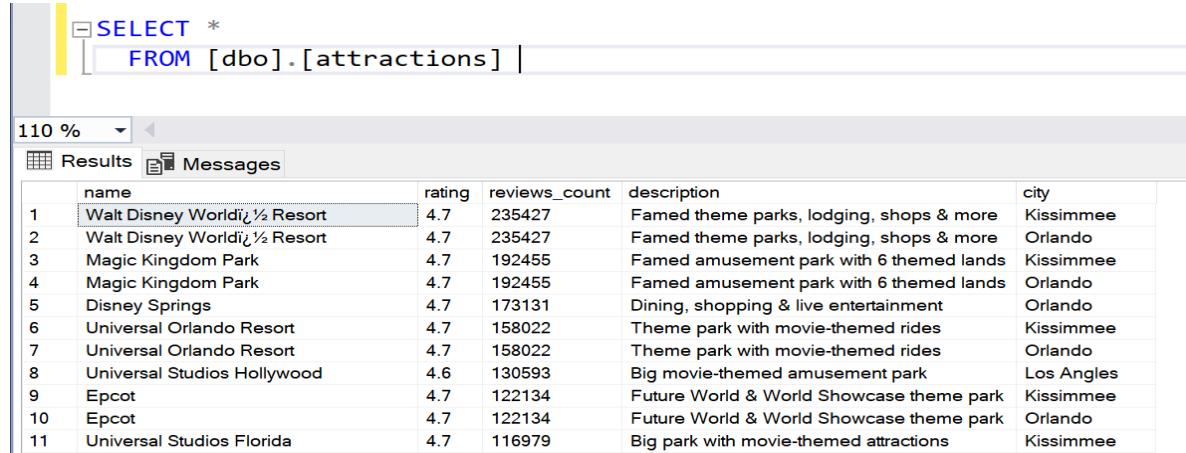


TourismHospitality\_INSERT.sql (Command Line)

#### D. List of Tables created in SQL Database:

##### 1. Attractions:

The data contains list of tourist attractions in each city of the US along with the other relevant fields like ratings, number of reviews and a description of the place



A screenshot of a SQL query results window. The query is:

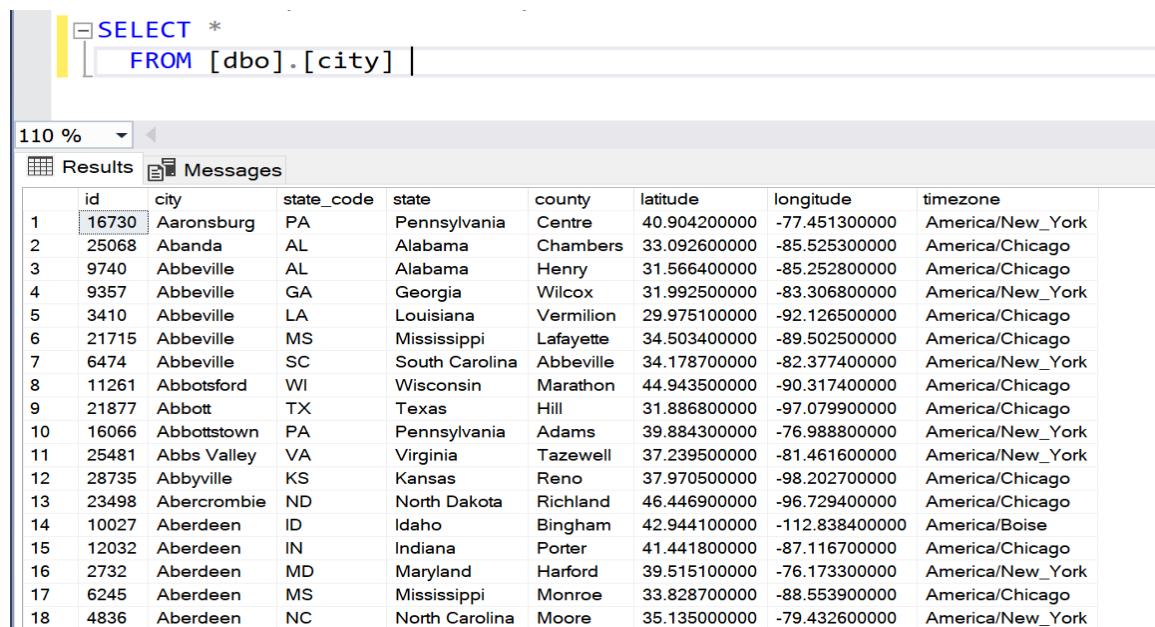
```
SELECT *
FROM [dbo].[attractions]
```

The results show 11 rows of data from the Attractions table:

	name	rating	reviews_count	description	city
1	Walt Disney World® ½ Resort	4.7	235427	Famed theme parks, lodging, shops & more	Kissimmee
2	Walt Disney World® ½ Resort	4.7	235427	Famed theme parks, lodging, shops & more	Orlando
3	Magic Kingdom Park	4.7	192455	Famed amusement park with 6 themed lands	Kissimmee
4	Magic Kingdom Park	4.7	192455	Famed amusement park with 6 themed lands	Orlando
5	Disney Springs	4.7	173131	Dining, shopping & live entertainment	Orlando
6	Universal Orlando Resort	4.7	158022	Theme park with movie-themed rides	Kissimmee
7	Universal Orlando Resort	4.7	158022	Theme park with movie-themed rides	Orlando
8	Universal Studios Hollywood	4.6	130593	Big movie-themed amusement park	Los Angeles
9	Epcot	4.7	122134	Future World & World Showcase theme park	Kissimmee
10	Epcot	4.7	122134	Future World & World Showcase theme park	Orlando
11	Universal Studios Florida	4.7	116979	Big park with movie-themed attractions	Kissimmee

2. Booking: The data consists of booking details of user's trips along with payment information and status

3. City: The City Table contains all the geographical data



A screenshot of a SQL query results window. The query is:

```
SELECT *
FROM [dbo].[city]
```

The results show 18 rows of data from the City table:

	id	city	state_code	state	county	latitude	longitude	timezone
1	16730	Aaronsburg	PA	Pennsylvania	Centre	40.904200000	-77.451300000	America/New_York
2	25068	Abanda	AL	Alabama	Chambers	33.092600000	-85.525300000	America/Chicago
3	9740	Abbeville	AL	Alabama	Henry	31.566400000	-85.252800000	America/Chicago
4	9357	Abbeville	GA	Georgia	Wilcox	31.992500000	-83.306800000	America/New_York
5	3410	Abbeville	LA	Louisiana	Vermilion	29.975100000	-92.126500000	America/Chicago
6	21715	Abbeville	MS	Mississippi	Lafayette	34.503400000	-89.502500000	America/Chicago
7	6474	Abbeville	SC	South Carolina	Abbeville	34.178700000	-82.377400000	America/New_York
8	11261	Abbotsford	WI	Wisconsin	Marathon	44.943500000	-90.317400000	America/Chicago
9	21877	Abbott	TX	Texas	Hill	31.886800000	-97.079900000	America/Chicago
10	16066	Abbottstown	PA	Pennsylvania	Adams	39.884300000	-76.988800000	America/New_York
11	25481	Abbs Valley	VA	Virginia	Tazewell	37.239500000	-81.461600000	America/New_York
12	28735	Abbyville	KS	Kansas	Reno	37.970500000	-98.202700000	America/Chicago
13	23498	Abercrombie	ND	North Dakota	Richland	46.446900000	-96.729400000	America/Chicago
14	10027	Aberdeen	ID	Idaho	Bingham	42.944100000	-112.838400000	America/Boise
15	12032	Aberdeen	IN	Indiana	Porter	41.441800000	-87.116700000	America/Chicago
16	2732	Aberdeen	MD	Maryland	Hanford	39.515100000	-76.173300000	America/New_York
17	6245	Aberdeen	MS	Mississippi	Monroe	33.828700000	-88.553900000	America/Chicago
18	4836	Aberdeen	NC	North Carolina	Moore	35.135000000	-79.432600000	America/New_York

4. Destinations: The data involves information on cities and their ranking, number of reviews in terms of tourism in USA. Additionally, it holds data for best time to visit these cities

	destination	rating	rank	description	tourist_attractions_count	best_time_to_go
1	Albany	2.5	24	The capital city of New York state, Albany boasts of...	24	Best time not available
2	Annapolis	1.5	31	Overlooking the very heartbeat of the state of Mary...	31	Best time not available
3	Atlanta	3.0	69	The city of Atlanta has many names, but none sub...	69	Best time not available
4	Augusta	2.5	30	The capital city of Maine is one of the least populat...	30	Best time not available
5	Baltimore	4.1	16	Maryland's Largest City Baltimore is the 30th most p...	67	June to August
6	Baton Rouge	1.5	29	Named after two Native American tribes, Baton Ro...	29	Best time not available
7	Beacon	3.5	92	Beacon is located in the Hudson Valley and 1...	92	Best time not available
8	Bedford	3.0	99	About an hour away or 46 miles from the buzz of N...	99	Best time not available
9	Berkshires	3.1	57	Berkshires is a famous highland region, mostly kno...	57	Best time not available
10	Big Sur	4.3	41	Big Sur is a mountainous area on the Central Calif...	41	Best time not available
11	Bismarck	3.0	79	Bismarck is the most underrated city in the Norther...	79	Best time not available
12	Boise	2.0	34	The city of Boise is the capital of the enigmatic stat...	34	Best time not available
13	Boston	4.5	13	Boston is the largest city in Massachusetts, the te...	216	April to May, October to November
14	Brookline	3.9	83	Brookline is a city in Norfolk County, Massachusetts...	83	Best time not available
15	Buffalo	3.0	97	Buffalo is the second-largest city located in New Yo...	97	Best time not available
16	Cambridge	0.0	84	Named after the renowned University of Cambridg...	84	Best time not available
17	Cape Cod	3.9	98	Cape Cod is 200 miles away or about 4 and a hal...	98	Best time not available
18	Cape May	3.5	93	Cape May, New Jersey is a easy 160 miles away w...	93	Best time not available
19	Carson City	2.5	78	The capital of Nevada, Carson City is the heart and...	78	Best time not available
20	Charleston	3.9	18	Cobblestone streets, horse-drawn carriages, and c...	80	March to May, September to Nov...
21	Chelsea	2.2	85	Chelsea is one of the densely populated cities in M...	85	Best time not available
22	Cheyenne	3.4	45	The capital of the Cowboy State of Wyoming, Chey...	45	Best time not available
23	Chicago	4.7	11	Third largest city in the United States, Chicago is a ...	225	April to May, September to Octo...

5. Hotels: The data contains list of hotels in each city of the United States along with address, price, room types available and their description, ratings, and review counts.

	name	city	duration	number_of_occupants	beds	rating	rating_title	number_of_ratings	price
1	Pacific Inn Monterey	Monterey	2 nights	2 adults	1 large double bed	8.5	Very good	1033	242
2	Hotel Pacific	Monterey	2 nights	2 adults	1 extra-large double bed	7.5	Good	2151	678
3	Stage Coach Lodge	Monterey	2 nights	2 adults	1 extra-large double bed	8.5	Very good	1090	338
4	El Castell Motel	Monterey	2 nights	2 adults	1 large double bed	8.3	Very good	1210	248
5	Cannery Row Inn	Monterey	2 nights	2 adults	1 extra-large double bed	7.8	Good	1416	448
6	The Monterey Hotel	Monterey	2 nights	2 adults	1 large double bed	6.9	Not Available	546	214
7	Casa Munras Garden Hotel & Spa	Monterey	2 nights	2 adults	1 extra-large double bed	8.5	Very good	1267	480
8	Hotel Abrego	Monterey	2 nights	2 adults	1 large double bed	8.5	Very good	1157	638
9	Colton Inn	Monterey	2 nights	2 adults	1 extra-large double bed	8.2	Very good	525	428
10	Americas Best Value Presidents Inn Monterey	Monterey	2 nights	2 adults	1 extra-large double bed	7.4	Good	1042	274
11	Ramada by Wyndham Monterey	Monterey	2 nights	2 adults	1 large double bed	8.0	Very good	986	217
12	Best Western Plus Monterey Inn	Monterey	2 nights	2 adults	1 extra-large double bed	8.4	Very good	1018	468
13	Days Inn by Wyndham Monterey Downtown	Monterey	2 nights	2 adults	1 extra-large double bed	7.5	Good	834	248
14	Travelodge by Wyndham Monterey Bay	Monterey	2 nights	2 adults	1 large double bed	6.8	Not Available	2990	192
15	Monterey Plaza Hotel & Spa	Monterey	2 nights	2 adults	1 extra-large double bed	8.9	Fabulous	1114	1058
16	Munras Inn	Monterey	2 nights	2 adults	1 extra-large double bed	8.3	Very good	556	377
17	Monterey Pines Inn	Monterey	2 nights	2 adults	1 extra-large double bed	7.5	Good	1917	265
18	Super 8 by Wyndham Monterey	Monterey	2 nights	2 adults	1 large double bed	7.6	Good	792	178
19	Monterey Surf Inn	Monterey	2 nights	2 adults	1 extra-large double bed	6.7	Not Available	621	144
20	InterContinental The Clement Monterey, an IHG Ho...	Monterey	2 nights	2 adults	1 extra-large double bed	8.7	Fabulous	885	922
21	Bayside Inn	Monterey	2 nights	2 adults	1 large double bed	7.5	Good	1564	211
22	Comfort Inn Monterey Peninsula Airport	Monterey	2 nights	2 adults	1 large double bed	8.1	Very good	278	207
23	Villa Franca Inn	Monterey	2 nights	2 adults	1 extra-large double bed	8.2	Very good	812	368
24	Red Roof Inn & Suites Monterey	Monterey	2 nights	2 adults	1 large double bed	7.3	Good	676	264

6. Restaurants: The table data contains restaurant details in each city of the United States along with URL, cuisine category, price, rating, and number of reviews.

SELECT \*  
FROM [dbo].[restaurants\_normalized]

	name	address	category1	category2	category3	reviews	number_of_reviews	comments
1	135 Prime	1201 Hewitt Dr	American	Steakhouse	Seafood	4.5	200	GPS could not get us properly vec
2	15 Church Restaurant	15 Church St	American	Vegetarian Friendly	Vegan Options	4.5	821	My husband and I absolutely love i
3	18 Oaks	23808 Resort Parkway	American	Steakhouse	Gluten Free Options	4.5	350	This was my 3rd time here for brur
4	1848 BBQ	5 Avalon Dr	American	Barbecue	NULL	4.5	13	Their sliced brisket sandwich was
5	20 North Broadway Tavern	20 N Broadway	American	Bar	Pub	4.5	47	A local dive bar with a pretty good
6	24th Street Cafe	1415 24th St	American	Cafe	Diner	4.5	570	No comments
7	25 Degrees	412 Walnut Ave	American	Bar	Pub	4.5	126	No comments
8	3 Lions Pub	8115 161st Ave NE	British	Bar	Pub	4.0	40	Right after the 4th of July parade w
9	30 Lake	30 Lake Avenue	American	Seafood	Vegetarian Friendly	4.5	182	This is one of the restaurants high
10	317 @ Montgomery	317 Montgomery St	American	Contemporary	Fusion	4.5	131	I am NOT a fan of noisy restaurants
11	5 Burro Cafe	7205 Austin St	Mexican	Vegetarian Friendly	NULL	4.0	126	Excellent food, great atmosphere.
12	5.Ate Cafe	403 E Louetta Rd	American	Cafe	Pizza	5.0	42	Great handburgers with home mac
13	50th Street Caboose	5027 50th St	Mexican	American	Vegetarian Friendly	4.5	239	Food is pretty good. My wife liked t
14	54 Degrees at Duane's	3649 Mission Inn Ave	American	Bar	Spanish	4.5	54	No comments
15	54th Street Restaurant & ...	1850 Market Place B...	American	Bar	Vegetarian Friendly	4.0	126	No comments
16	555 East American Steak...	555 E Ocean Blvd	American	Steakhouse	Vegetarian Friendly	4.5	468	No comments
17	575 Pizzeria	7710 Hillside Rd	Italian	Pizza	Vegetarian Friendly	4.5	774	What can I say . Great selection of
18	5th Avenue Sandwich S...	117 5th Ave SE	American	Soups	Vegetarian Friendly	4.5	353	This place has the best egg salad :
19	677 Prime	677 Broadway	American	Steakhouse	Gluten Free Options	4.5	437	Tremendous service. Nice atmos
20	701 Mosaic	701 E 4th St	American	Mediterranean	Caribbean	4.5	218	This place was only a short 2 block

7. State: The table data contains list of all the states in USA and their state code

SELECT TOP (1000) [state]  
, [state\_code]  
FROM [dbo].[states]

	state	state_code
1	Alabama	AL
2	Alaska	AK
3	Arizona	AZ
4	Arkansas	AR
5	California	CA
6	Colorado	CO
7	Connecticut	CT
8	Delaware	DE
9	District of Columbia	DC
10	Florida	FL
11	Georgia	GA
12	Hawaii	HI
13	Idaho	ID
14	Illinois	IL
15	Indiana	IN
16	Iowa	IA
17	Kansas	KS
18	Kentucky	KY
19	Louisiana	LA
20	Maine	ME

8. Tour Packages: The table data contains details of attractions/events which are part of the tourist itinerary which includes price, description, city name and duration.

```

SELECT TOP (1000) [name]
    ,[city]
    ,[duration]
    ,[description]
    ,[price]
FROM [dbo].[tour_packages]

```

Results

	name	city	duration	description	price
1	Grand Canyon West Rim Bus Tour from Las Vegas	Las Vegas	11 hours	A sightseeing trip to the Grand Canyon's West Ri...	110
2	Tickets to Myst're? by Cirque du Soleil?	Las Vegas	1 hour 30 minutes	Admission to the Cirque du Soleil? production at ...	77
3	Eiffel Tower Viewing Deck at Paris Las Vegas	Las Vegas	60 minutes	Feel like you're in France at the top of Las Vegas'...	27
4	?Rogue: The Sexiest Show in Vegas? Theater Tickets	Las Vegas	1 hour 10 minutes	Tickets to an adult-themed stage performance at ...	56
5	Admission to the High Roller	Las Vegas	30 minutes	Views of Las Vegas from one of the tallest observ...	36
6	Grand Canyon South Rim Tour from Las Vegas	Las Vegas	15 hours	A guided tour with free time at the Canyon and in...	99
7	Hoover Dam Tour from Las Vegas	Las Vegas	4 hours	A tour exploring the highlights of the engineering ...	88
8	Admission to The Mob Museum	Las Vegas	3 hours	A visit to a museum documenting the history of or...	49
9	Fly LINQ Zipline Las Vegas Ticket	Las Vegas	30 minutes	Highlights of the attraction with views over the city	36
10	Nathan Burton Magic Show	Las Vegas	1 hour 10 minutes	Tickets to the number one afternoon magic show ...	67
11	Self-guided Boston Christmas Tour	Boston	Free cancellation available	A walking tour to discover Boston's Christmas trad...	8
12	Requiem for Salem Adults-only Walking Ghost Tour	Salem	1 hour 30 minutes	A walking tour through the city's infamous and sp...	6
13	90-minute Boston Harbor Cruise	Boston	1 hour 30 minutes	A 90-minute cruise of Boston Harbor	8
14	Harvard University Self-guided Audio Tour	Boston	60 minutes	An app-based walking tour to discover the origins...	5
15	Historic Self-guided Plymouth Walking Tour	Boston	60 minutes	A self-guided tour to explore the prominent sites i...	12
16	Boston Scavenger Hunt: The Story of America	Boston	60 minutes	A mobile app-guided walking tour to discover Bos...	10
17	Boston HarborWalk Audio Tour	Boston	Free cancellation available	A self-guided audio tour to explore the sights of B...	10
18	Self-guided Haunted Walking Tour	Boston	Free cancellation available	A chance to explore some of Boston's spookiest ...	7
19	Boston City Scavenger Hunt Tour	Boston	Free cancellation available	A unique way to tour Boston while completing a s...	8
20	Self-Guided Ghost Tour	Boston	2 hours	A hair-raising self-guided tour to explore the city's ...	42
21	Boston Harborwalk Self-guided Audio Walking Tour	Boston	2 hours	A chance to learn about Boston's history	129

9. Travel Agents: The table data contains list of tourist agencies across the United States of America having basic details of the company which includes contact, email, address, URL for social media.

```

SELECT *
FROM [dbo].[travel_agents]

```

Results

	company_name	website	email	phone_number	address	city	state
1	Aardvark Brazil Visa	http://www.aardvarkbrazilvisa.com	getvisatoamazon@gmail.com	(415) 948-3490	588 Sutter St	Palm Springs	CA
2	Boutique Travel	http://www.boutiquetravel.net/	info@boutiquetravel.net	(415) 824-2550	3450 Lakeshore Ave	Oakland	CA
3	Bruno Travel Agent	http://asaptickets.com	bruno.m@asaptickets.com	(877) 506-6362	100 Pine Street	Oceanside	CA
4	Cain Travel	http://www.caintravel.com/	info@caintravel.com	(800) 346-4747	600 California St 2313	San Francisco	CA
5	Christopherson Business Travel	https://www.cbtravel.com/	kevin.lee@cbtravel.com	(303) 694-3322	8450 E Crescent Pkwy	Long Beach	NY
6	Classic Tours	http://www.classictour.com/	infor@classictour.com	(415) 391-8981	816 Stockton Street	Chelsea	MA
7	Denver Inside and Out	http://www.denverinsideandout.com/	mrbig@denverinsideandout.com	(303) 330-9871	1701 Wynkoop St	Santa Cruz	NM
8	Grueninger Music Tours	https://www.gogmt.com/	info@gogmt.com	(317) 581-1122	9011 North Meridian Street	Indianapolis	IN
9	Im Out Of Here Travel Travel Agent	http://www.outofheretravel.com	amy@familyvacations.com	(317) 379-0169	15888 Atlantic Rd	Chicago	IL
10	Inspirato	https://www.inspirato.com/	info@inspirato.com	(303) 586-7771	1644 Wazee Street	Ann Arbor	MI
11	Montgomery Travel Services	http://www.montgomerytravel.com/	nforeza@montgomerytravel.com	(415) 391-2287	220 Montgomery St 23 420	San Francisco	CA
12	Mryco Travel	http://mrycotravel.com/	melvin@mrycotravel.com	(303) 399-9387	2854 Dahlia St	Boston	MA
13	My Travel Agent Taj	http://www.amawaterways.com/agent/taj	mytravelagenttaj@gmail.com	(800) 696-1085	1301 Clay St	Oakland	CA
14	No Borders Travel Agency LLC	http://www.noborderstravel.com/	victoria@noborderstravel.com	(720) 835-7680	17583 E Wesley Pl	Aurora	CO
15	Platinum Peaks Travel Llc	http://www.platinumpeakstravel.com/	info@platinumpeakstravel.com	(417) 720-1171	5336 S Campbell Ave, S...	Worcester	MA
16	Playa Luxury Rentals	http://playaluxuryrentals.com/	info@playaluxuryrentals.com	(303) 572-2994	1512 Larimer St	Greenville	OH
17	Premiere Travel & Cruises	http://premieretravel-cruises.com/	reservations@premieretravel-cr...	(303) 986-8603	3900 S Wadsworth Blvd ...	Austin	NV
18	Quinn Travel	http://quinntravel.net/	catherine@quinntravel.net	(415) 665-7330	319 W Portal Ave	Arlington	WA
19	Seven Corners	http://www.sevencorners.com/	privacy@sevencorners.com	(800) 335-0611	303 Congressional Blvd	Santa Barbara	CA
20	Taban Travel Agency Ltd.	http://tabantravel.com/EN>Contactus.a...	info@tabantravel.com	(915) 555-0173	1355 Market St	San Francisco	CA

10. Trip: The data includes information of trip booked by the user and connects user to booking data

11. Users: The data contains knowledge on user's personal details that are used to connect the booking and trip

SELECT \*  
FROM [dbo].[users]

	id	name	contact_number	email_id	gender	city	state	ssn
1	1	Harvey Specter	6172235435	harveys@gmail.com	Male	New York City	New York	213-22-1465
2	2	Rachel Zane	6173327855	zane.rachel@gmail.com	Female	Chicago	Illinois	472-48-9983
3	3	Nivedita Gupta	8576429976	nivedita.g@gmail.com	Female	Boston	Massachusetts	437-22-8736
4	4	Sneha Sharma	6177784332	sneha.sharma@gmail.com	Female	San Diego	California	652-82-6736
5	5	Kartik Desai	6172147732	kartikdesai1@gmail.com	Male	Boston	Massachusetts	772-35-7483
6	6	Kunal Aryan	6174233673	kunal3436@gmail.com	Male	Atlanta	Georgia	937-36-8635
7	7	Siddharth Malhotra	6178437394	sidmalhotra@gmail.com	Male	Palm Springs	California	387-32-3762

Object Explorer

- localhost (SQL Server 15.0.2000.5 - DESKTOP-CK5JI9M\DELL)
- tourismhospitality.database.windows.net (SQL Server 12.0.2000.8 - user)
  - Databases
    - System Databases
    - TourismHospitality
  - Tables
    - System Tables
    - External Tables
    - GraphTables
    - dbo.attractions
    - dbo.booking
    - dbo.cities
    - dbo.city
    - dbo.destinations
    - dbo.hotels
    - dbo.restaurants
    - dbo.restaurants\_cat1
    - dbo.restaurants\_cat2
    - dbo.restaurants\_cat3
    - dbo.restaurants\_normalized
    - dbo.states
    - dbo.tour\_packages
    - dbo.travel\_agents
    - dbo.trip
    - dbo.users
  - Views
    - System Views
    - dbo.vw\_attractionswithcity

## Used Cases from Database

### 1. Use Case: Restaurant options for top 5 destination cities

Description: User wants to look for restaurant options in top destination cities of USA

Actor action: User views to look for restaurant options in top destination cities of USA

System Responses: Lists the restaurants in top destination cities of USA

SQL Query:

```
CREATE VIEW vw_famousrestaurants AS
SELECT     NAME                  AS restaurant_name,
           reviews               AS restaurant_rating,
           city                  AS destination_name,
           rank                 AS destination_rank
FROM       [dbo].[destinations] a
INNER JOIN [dbo].[restaurants] b
ON         a.destination = b.city
--Query For the Above View
SELECT restaurant_name,
       restaurant_rating,
       destination_name,
       destination_rank
FROM   vw_famousrestaurants
WHERE  destination_rank <= 5
ORDER BY destination_rank
```

18	Ceci Italian Restaurant & Bar	4.0	New York City	1
----	-------------------------------	-----	---------------	---

### 2. Use Case: Hotels in Texas and their customer review

Description: User wants to travel to Texas, for that wishes to see the hotels in Texas and judge based on the rating

Actor action: User views the list of hotels in Texas

System Responses: Lists the hotels in Texas

SQL Query:

```
CREATE VIEW vw_texashotels AS
SELECT     NAME                  AS hotel_name,
           rating_title        AS rating_category,
           a.city                AS city,
           a.state               AS state
FROM       [dbo].[cities] a
INNER JOIN [dbo].[hotels] b
ON         a.city = b.city
```

```
--Query For the Above View
SELECT hotel_name,
       rating_category,
       city,
       state
FROM   vw_texashotels
WHERE  state = 'Texas'
```

The screenshot shows a SQL Server Management Studio window. The query in the query pane is:

```
SQLQuery1.sql - tour..itality (user (106))*
SELECT hotel_name,
       rating_category,
       city,
       state
FROM   vw_texashotels
WHERE  state = 'Texas'|
```

The results pane displays a table with 15 rows of hotel information from the Texas view. The columns are hotel\_name, rating\_category, city, and state. The data includes various hotels like Holiday Inn, Menger Hotel, Quality Inn, Hotel Gibbs, Hyatt Regency, Country Inn & Suites, Holiday Inn Express, Riverwalk Plaza Hotel, Holiday Inn Express & Suites, Country Inn & Suites by Radisson, Holiday Inn Express & Suites, Best Western Alamo Suites, Candlewood Suites, La Quinta, and Hyatt Place, all located in San Antonio, Texas.

	hotel_name	rating_category	city	state
1	Holiday Inn San Antonio-Downtown/Market Square, ...	Good	San Antonio	Texas
2	Menger Hotel	Very good	San Antonio	Texas
3	Quality Inn San Antonio Fiesta at Six Flags	Good	San Antonio	Texas
4	Hotel Gibbs Downtown Riverwalk	Fabulous	San Antonio	Texas
5	Hyatt Regency San Antonio Riverwalk	Very good	San Antonio	Texas
6	Country Inn & Suites by Radisson, Lackland AFB (Sa...	Good	San Antonio	Texas
7	Holiday Inn Express - San Antonio Airport, an IHG H...	Superb	San Antonio	Texas
8	Riverwalk Plaza Hotel	Good	San Antonio	Texas
9	Holiday Inn Express & Suites San Antonio Medical C...	Good	San Antonio	Texas
10	Country Inn & Suites by Radisson, San Antonio Medi...	Not Available	San Antonio	Texas
11	Holiday Inn Express & Suites San Antonio - Downtow...	Good	San Antonio	Texas
12	Best Western Alamo Suites Downtown	Good	San Antonio	Texas
13	Candlewood Suites - San Antonio Lackland AFB Are...	Superb	San Antonio	Texas
14	La Quinta by Wyndham San Antonio Airport	Good	San Antonio	Texas
15	Hyatt Place San Antonio Riverwalk	Very good	San Antonio	Texas

### 3. Use Case: Destinations in the USA which are best to visit throughout the year

Description: User wants to look for cities that he/she can travel any time of the year

Actor action: User views the list of evergreen destinations

System Responses: Lists the destinations in USA

SQL Query:

```
CREATE VIEW vw_bestdestinations AS
SELECT      destination,
            rating,
            description,
            best_time_to_go
FROM        [dbo].[destinations] a
LEFT JOIN   [dbo].[cities] b
ON          a.destination LIKE b.city
```

--Query For the Above View

```
SELECT destination,
       rating,
       description
FROM   vw_bestdestinations
WHERE  best_time_to_go = 'Throughout the year'
```

```

SELECT destination,
       rating,
       description
  FROM vw_bestdestinations
 WHERE best_time_to_go = 'Throughout the year'
  
```

Results

destination	rating	description
Maui	4.2	Polynesian heritage mixed with the modern American lifestyle is what makes Maui a beautiful Ha...
New York City	4.8	An iconic global centre that has inspired the world with its brilliant architecture, movies, and art. Al...

#### 4. Use Case:

Description: User is interested in Museums available in Massachusetts

Actor action: User views the list of museums in Massachusetts and their ratings

System Responses: Lists the museums in Massachusetts

SQL Query:

```

CREATE VIEW vw_massachusettsmuseums AS
SELECT      NAME,
            rating,
            reviews_count,
            description,
            a.city AS city,
            state
FROM        [dbo].[attractions] a
INNER JOIN [dbo].[cities] b
ON          a.city = b.city

--Query For the Above View
SELECT NAME,
       rating,
       reviews_count,
       description,
       city,
       state
FROM vw_massachusettsmuseums
WHERE NAME LIKE '%Museum%'
AND   state = 'Massachusetts'
  
```

```

SELECT NAME,
       rating,
       reviews_count,
       description,
       city,
       state
  FROM vw_massachusettsmuseums
 WHERE NAME LIKE '%Museum%'
 AND   state = 'Massachusetts'
  
```

Results

NAME	rating	reviews_count	description	city	state
Boston Children's Museum	4.7	4879	Hands-on exhibits & play spaces	Boston	Massachusetts
Boston Tea Party Ships & Museum	4.6	5866	Floating museum with live reenactments	Boston	Massachusetts
Gibson House Museum	4.5	73	Posh Victorian home with tours & events	Boston	Massachusetts
Harvard Art Museums	4.7	1512	Diverse European & American works	Boston	Massachusetts
Isabella Stewart Gardner Museum	4.7	6741	Art treasures in a Venetian-style palace	Boston	Massachusetts
John F. Kennedy Presidential Library and Museum	4.7	548	Political-history exhibits & artifacts	Boston	Massachusetts
Larz Anderson Auto Museum	4.7	705	Antique car & vintage bicycle collection	Boston	Massachusetts
Metropolitan Waterworks Museum	4.7	346	Exhibits on 1st U.S. city water system	Boston	Massachusetts
MIT Museum	4.3	2491	Exhibits on science & technology	Boston	Massachusetts
Museum of African American History	4.4	291	Historic exhibits in an 1834 schoolhouse	Boston	Massachusetts
Museum of Fine Arts, Boston	4.8	14031	Impressionist art & Egyptian treasures	Boston	Massachusetts
Museum of Science	4.7	17512	Interactive exhibits & an IMAX theater	Boston	Massachusetts
Nichols House Museum	4.6	49	Historic Victorian home turned museum	Boston	Massachusetts
Otis House Museum	4.5	59	1796 Federal-style mansion with tours	Boston	Massachusetts
Peabody Museum of Archaeology and Ethnology	4.6	509	Anthropological collections at Harvard	Boston	Massachusetts

## 5. Use Case: Attractions and best time to visit them

Description: User wants to know the best time to visit various attractions

Actor action: User views the list of attractions and the best time to visit them

System Responses: List of attractions and the best time to visit them

SQL Query:

```
CREATE VIEW vw_besttimetovisit AS
SELECT      NAME,
            city,
            best_time_to_go
FROM        [dbo].[attractions]  AS a
INNER JOIN [dbo].[destinations] AS b
ON          a.city = b.destination
```

--Query For the Above View

```
SELECT NAME,
       city,
       best_time_to_go
FROM   vw_besttimetovisit
```

	NAME	rating	reviews_count	description	city	state
1	Boston Children's Museum	4.7	4879	Hands-on exhibits & play spaces	Boston	Massachusetts
2	Boston Tea Party Ships & Museum	4.6	5866	Floating museum with live reenactments	Boston	Massachusetts
3	Gibson House Museum	4.5	73	Posh Victorian home with tours & events	Boston	Massachusetts
4	Harvard Art Museums	4.7	1512	Diverse European & American works	Boston	Massachusetts
5	Isabella Stewart Gardner Museum	4.7	6741	Art treasures in a Venetian-style palace	Boston	Massachusetts
6	John F. Kennedy Presidential Library and Museum	4.7	548	Political-history exhibits & artifacts	Boston	Massachusetts
7	Larz Anderson Auto Museum	4.7	705	Antique car & vintage bicycle collection	Boston	Massachusetts
8	Metropolitan Waterworks Museum	4.7	346	Exhibits on 1st U.S. city water system	Boston	Massachusetts
9	MIT Museum	4.3	2491	Exhibits on science & technology	Boston	Massachusetts
10	Museum of African American History	4.4	291	Historic exhibits an 1834 schoolhouse	Boston	Massachusetts
11	Museum of Fine Arts, Boston	4.8	14031	Impressionist art & Egyptian treasures	Boston	Massachusetts
12	Museum of Science	4.7	17512	Interactive exhibits & an IMAX theater	Boston	Massachusetts
13	Nichols House Museum	4.6	49	Historic Victorian home turned museum	Boston	Massachusetts
14	Otis House Museum	4.5	59	1796 Federal-style mansion with tours	Boston	Massachusetts
15	Peabody Museum of Archaeology and Ethnology	4.6	509	Anthropological collections at Harvard	Boston	Massachusetts
16	The Harvard Museum of Natural History	4.7	3418	Glass flowers, zoology & minerals	Boston	Massachusetts
17	USS Constitution Museum	4.7	6288	Exhibits about the circa-1797 warship	Boston	Massachusetts

## 6. Use Case: Popular 20 tourist attractions in San Francisco and Miami

Description: User wants to know the top twenty tourist attractions in San Francisco and Miami

Actor action: User views the list of top twenty tourist attractions in San Francisco and Miami

System Responses: List of top twenty tourist attractions in San Francisco and Miami

SQL Query:

```

CREATE VIEW vw_top20attractions AS
SELECT NAME,
       city,
       destination,
       a.rating ,
       best_time_to_go
FROM   [dbo].[attractions] AS a
JOIN   [dbo].[destinations] AS b
ON     a.city = b.destination

--Query For the Above View
SELECT TOP(20)
       NAME,
       city,
       best_time_to_go
FROM   vw_top20attractions
WHERE  destination IN ( 'San Francisco',
                        'Miami' )
ORDER BY rating DESC

```

The screenshot shows the SQL Server Management Studio interface. A query is being run against a database named 'vw\_top20attractions'. The query selects the top 20 attractions from San Francisco and Miami, ordered by rating in descending order. The results are displayed in a table with columns: NAME, city, and best\_time\_to\_go.

NAME	city	best_time_to_go
Battery Spencer	San Francisco	September to November (Autumn)
Brickell Avenue	Miami	March to May
Cape Florida Lighthouse	Miami	March to May
Crissy Field East Beach	San Francisco	September to November (Autumn)
Faena Theater	Miami	March to May
Fairchild Tropical Botanic Garden	Miami	March to May
Gesu Church	Miami	March to May
Golden Gate Bridge	San Francisco	September to November (Autumn)
Grandview Park	San Francisco	September to November (Autumn)
Holocaust Memorial Miami Beach	Miami	March to May
Lands End Lookout	San Francisco	September to November (Autumn)
Marin Headlands	San Francisco	September to November (Autumn)
Marshall's Beach	San Francisco	September to November (Autumn)
Muir Woods National Monument	San Francisco	September to November (Autumn)
Salesforce Park	San Francisco	September to November (Autumn)
San Francisco Botanical Garden	San Francisco	September to November (Autumn)

## 7. Use Case: Cheapest Hotels in Los Angeles with average ratings

Description: Affordable hotels in Los Angeles

Actor action: User wants the options for hotels in LA which are not costly

System Responses: List of affordable hotels based on price and rating

SQL Query:

```

CREATE VIEW vw_cheapesthotels AS
SELECT *
FROM   [dbo].[hotels]

```

```
--Query For the Above View
select TOP(5)
    *
FROM      vw_cheapesthotels
WHERE     city = 'Los Angeles'
AND       rating_title IN ( 'Good',
                            'Very Good' )
ORDER BY price
```

The screenshot shows the SQL Server Management Studio interface. At the top, there is a code editor window containing the SQL query. Below it is a results pane titled 'Results' which displays a table of hotel information. The table has columns: name, city, duration, number\_of\_occupants, beds, rating, rating\_title, number\_of\_ratings, price, and image. The data is as follows:

name	city	duration	number_of_occupants	beds	rating	rating_title	number_of_ratings	price	image
PodShare Venice	Los Angeles	2 nights	2 adults	Bed in dormitory	7.2	Good	385	194	<a href="https://tcf.bstatic.com">https://tcf.bstatic.com</a>
PodShare Venice	Los Angeles	2 nights	2 adults	Bed in dormitory	7.2	Good	385	194	<a href="https://tcf.bstatic.com">https://tcf.bstatic.com</a>
Park Cienega Motel	Los Angeles	2 nights	2 adults	1 extra-large double bed	8.1	Very good	443	215	<a href="https://tcf.bstatic.com">https://tcf.bstatic.com</a>
Libra Hotel	Los Angeles	2 nights	2 adults	2 beds (1 single, 1 double)	7.5	Good	632	228	<a href="https://tcf.bstatic.com">https://tcf.bstatic.com</a>
La Mirage Inn LAX Airport	Los Angeles	2 nights	2 adults	1 extra-large double bed	7.2	Good	395	235	<a href="https://tcf.bstatic.com">https://tcf.bstatic.com</a>

## 8. Use Case: Best hotels with extra-large rooms availability

Description: User is interested in only best hotels with extra-large rooms for his/her business trip to Houston

Actor action: User wants to see best rooms and hotels in Houston

System Responses: Lists the hotels with rating higher than 9 and has extra-large rooms available

SQL Query:

```
CREATE VIEW vw_hotelsextralargerooms AS
SELECT NAME,
       beds,
       url,
       rating,
       rating_title
  FROM   hotels
 WHERE  beds LIKE '%extra%'
 AND    city = 'Houston'
 AND    rating >= 9
--Query For the Above View
SELECT *
  FROM   vw_hotelsextralargerooms
```

```

CREATE View Vw_HotelsExtraLargeRooms AS
SELECT name,
       beds,
       url,
       rating,
       rating_title
FROM   hotels
WHERE  beds LIKE '%extra%'
       AND city = 'Houston'
       AND rating >= 9

--Query For the Above View
select *
FROM   Vw_HotelsExtraLargeRooms

```

	name	beds	url	rating	rating_title
1	Holiday Inn Express - Houston - Galleria Area, an IHG ...	1 extra-large double bed	https://www.booking.com/hotel/us/holiday-inn-exp...	9.0	Superb
2	The Post Oak Hotel	1 extra-large double bed	https://www.booking.com/hotel/us/the-post-oak-en...	9.3	Superb
3	InterContinental Houston Medical Center, an IHG ...	1 extra-large double bed	https://www.booking.com/hotel/us/intercontinental...	9.0	Superb

## 9. Use Case: Average rating of all hotels in each state

Description: User wants to know the average rating of all hotels in each state

Actor action: User views the average rating of all hotels in each state

System Responses: Lists the average rating of hotels in each

SQL Query:

```

CREATE VIEW vw_topratinghotels AS
SELECT      Avg(rating)           AS average_rating_of_hotels,
            b.state
FROM        [dbo].[hotels]         AS a
INNER JOIN [dbo].[Vw_CityState]  AS b
ON          a.city = b.city
GROUP BY    state
ORDER BY    average_rating_of_hotels DESC
--Query For the Above View
SELECT      *
FROM        vw_topratinghotels
ORDER BY    average_rating_of_hotels DESC

```

```

CREATE VIEW vw_topratinghotels AS
SELECT      Avg(rating)          AS average_rating_of_hotels,
            b.state
FROM        [dbo].[hotels]       AS a
INNER JOIN [dbo].[Vw_CityState] AS b
ON          a.city = b.city
GROUP BY    state
ORDER BY    average_rating_of_hotels DESC
--Query For the Above View
select *
FROM      vw_topratinghotels
ORDER BY average_rating_of_hotels DESC

```

91 %

	Average_rating_of_hotels	state
1	8.457142	Delaware
2	8.350000	Pennsylvania
3	8.258730	West Virginia
4	8.182432	Utah
5	8.176470	Maryland
6	8.079591	New Mexico
7	8.075000	Alabama
8	8.033333	Minnesota
9	8.030000	New Hampshire
10	8.017808	Nevada
11	8.017592	Arizona
12	8.016666	Indiana
13	7.995000	Mississippi
14	7.989375	North Carolina
15	7.950000	Georgia
16	7.937837	Wisconsin
17	7.918681	Alaska

#### 10. Use Case: Five states of USA with the most touristic attractions

Description: Show the states with most amount of tourist attractions

Actor action: User wants to see states with lots of places to visit

System Responses: Lists the top states with the highest tourist attractions

```

CREATE VIEW vw_toptouristattractions
SELECT TOP(5) state,
       sum(tourist_attractions_count) AS total_tourist_attractions
FROM      destinations a
INNER JOIN cities b
ON          a.destination = b.city
GROUP BY    state
ORDER BY    total_tourist_attractions DESC

```

The screenshot shows a SQL query being run in SSMS. The query creates a view named vw\_toptouristattractions and selects the top 5 states with the highest total tourist attractions from the destinations and cities tables. The results are displayed in a table with columns 'state' and 'Total\_Tourist\_Attractions'. The data shows California at 900, Texas at 638, Florida at 359, Washington at 296, and Illinois at 295.

```

Create View vw_toptouristattractions
SELECT TOP(5) state,
       Sum(tourist_attractions_count) AS Total_Tourist_Attractions
  FROM  destinations a
        INNER JOIN cities b
          ON a.destination = b.city
 GROUP BY state
 ORDER BY total_tourist_attractions DESC

```

	state	Total_Tourist_Attractions
1	California	900
2	Texas	638
3	Florida	359
4	Washington	296
5	Illinois	295

### 11. Use Case: Average price for two nights stay in hotels in Florida state

Description: Get the average price of or two nights stay in hotels in Florida

Actor action: User wants to know the average price for two nights stay in Florida hotels

System Responses: Lists the average price for two nights stay in hotels in Florida

SQL Query:

```

CREATE VIEW vw_floridahotels
AS
    SELECT a.NAME,
           Avg(price) AS average_price,
           duration,
           rating
      FROM [dbo].[hotels] AS a
        INNER JOIN [dbo].[cities] AS b
          ON a.city = b.city
     WHERE state = 'Florida'
 GROUP BY a.NAME,
           duration,
           rating

```

```

CREATE VIEW vw_floridahotels
AS
    SELECT a.NAME,
           Avg(price) AS average_price,
           duration,
           rating
      FROM [dbo].[hotels] AS a
      INNER JOIN [dbo].[cities] AS b
              ON a.city = b.city
     WHERE state = 'Florida'
   GROUP BY a.NAME,
            duration,
            rating

--Query For the Above View
Select * from Vw_FloridaHotels
ORDER BY average_price DESC

```

Results

	name	average_price	duration	rating
1	Casa Key West at Duval Square	3401	2 nights	9.0
2	Two Story Townhouse	2331	2 nights	7.0
3	Sky Loft in Key West	1990	2 nights	9.0
4	Pier House Resort & Spa	1638	2 nights	8.2
5	Santa Maria Suites Resort	1608	2 nights	9.2
6	W Residences Fort Lauderdale Luxury Suites Across ...	1595	2 nights	7.9
7	H2O Suites- Adults Only	1548	2 nights	9.4
8	Great Exuma Suite 406	1460	2 nights	8.8
9	Grand Cayman Suite 309	1460	2 nights	8.0
10	Margarita Suite 305	1460	2 nights	8.2
11	Samana Cay Suite 405	1460	2 nights	9.0
12	The Bartum	1445	2 nights	9.1
13	Luxury Villa near Disney 8 Bedroom Private Pool & Pl...	1438	2 nights	10.0

## 12. Use Case: Trending beaches in California

Description: Get most visited beaches in California

Actor action: User wants to see most visited beaches in California for her family trip

System Responses: List the top reviewed beaches in California

```

CREATE VIEW vw_californiabeaches
AS
    SELECT a. *
      FROM [dbo].[attractions] a
      INNER JOIN [dbo].[cities] b
              ON a.city = b.city
     WHERE NAME LIKE '%beach%'
       AND state = 'California'
       AND reviews_count > 3000

```

```

CREATE VIEW Vw_CaliforniaBeaches AS
SELECT a.*
FROM [dbo].[attractions] a
INNER JOIN [dbo].[cities] b
ON a.city = b.city
WHERE name LIKE '%beach%'
AND state = 'California'
AND reviews_count > 3000

--Query for the above view
SELECT *
FROM Vw_CaliforniaBeaches
Order BY rating DESC

```

91 %

	name	rating	reviews_count	description	city
1	Pebble Beach Golf Links	4.8	3178	Iconic, 18-hole public golf course	Monterey
2	La Jolla Shores Beach	4.7	3627	Scuba classes & gentle waves	San Diego
3	Lighthouse Field State Beach	4.7	3181	Serene spot with a variety of vistas	Santa Cruz
4	Mission Beach Boardwalk   Ocean Front Walk	4.7	4198	Bustling promenade with ocean vistas	San Diego
5	Rosie's Dog Beach	4.7	6802	Beachfront park with dog-friendly hours	Long Beach
6	Santa Cruz Beach Boardwalk	4.6	39662	Iconic amusement park on the beach	San Francisco
7	Santa Cruz Beach Boardwalk	4.6	39662	Iconic amusement park on the beach	Santa Cruz
8	Seacliff State Beach	4.6	4001	Camping & hiking among redwoods	Santa Cruz
9	Ocean Beach Pier	4.6	8719	Long fishing pier with sunset views	San Diego
10	Robert W. Crown Memorial State Beach	4.5	4020	2.5-mile stretch for swimming & picnics	San Francisco
11	Mother's Beach	4.5	3021	Busy oasis with an artful promenade	Long Beach
12	Long Beach Convention & Entertainment Center	4.5	5887	nan	Long Beach

### 13. Use Case: Tourist destinations details for a state

Description: Information on each city in Illinois with destinations

Actor action: User wants to see information on each city in Illinois with destinations

System Responses: Lists the cities and descriptions for cities in Illinois

```

CREATE VIEW vw_IllinoisDestinations
AS
SELECT city,
       description
FROM   destinations a
       INNER JOIN cities b
              ON a.destination = b.city
WHERE  state = 'Illinois'

```

```

CREATE VIEW vw_illionisdestinations
AS
    SELECT city,
           description
      FROM destinations a
     INNER JOIN cities b
        ON a.destination = b.city
   WHERE state = 'Illinois'

Select * from vw_illionisdestinations

```

The screenshot shows the SQL query above being run. The results pane displays two rows:

	city	description
1	Chicago	Third largest city in the United States, Chicag...
2	Springfield	Springfield City is steeped with political histor...

#### 14. Use Case: Vegetarian or Italian restaurants near Disneyland Park

Description: Get all Vegetarian or Italian restaurants near Disneyland Park

Actor action: User is interested to know the list of Italian or vegetarian restaurants near Disneyland Park

System Responses: List of all Italian or vegetarian restaurants near Disneyland Park

```

CREATE VIEW vw_restaurantbycategory
AS
    SELECT DISTINCT b.NAME,
                   category1,
                   category2,
                   category3,
                   address,
                   reviews,
                   number_of_reviews,
                   contact
      FROM [dbo].[attractions] AS a
     INNER JOIN [dbo].[restaurants_normalized] AS b
        ON a.city = b.city
   WHERE a.NAME = 'Disneyland Park'
     AND ( category1 LIKE '%Italian%'
          OR ( category2 LIKE '%Vegetarian%' )
          OR category3 LIKE '%Vegetarian%' )

```

```

CREATE VIEW vw_restaurantbycategory
AS
SELECT DISTINCT b.NAME,
    category1,
    category2,
    category3,
    address,
    reviews,
    number_of_reviews,
    contact
FROM [dbo].[attractions] AS a
INNER JOIN [dbo].[restaurants_normalized] AS b
    ON a.city = b.city
WHERE a.NAME = 'Disneyland Park'
    AND ( category1 LIKE '%Italian%'
        OR ( category2 LIKE '%Vegetarian%' )
        OR category3 LIKE '%Vegetarian%' )

--Query for the above view
SELECT *
    FROM [dbo].[Vw_RestaurantByCategory]

```

91 %

	name	category1	category2	category3	address	reviews	number_of_reviews	contact
1	Baci di Firenze Trattoria	Italian	Vegetarian Friendly	Vegan Options	416 N Lakeview Ave	5.0	520	+1 714-282-2220
2	Cortina's Italian Market & Pizzeria	Italian	Pizza	Deli	2175 W Orange Ave	4.5	124	+1 714-535-1948
3	Marr's Pizza & Italian	Italian	Pizza	Vegetarian Friendly	1194 W Katella Ave	4.5	481	+1 714-533-1631

## 15. Use Case: Top cities with highest count of hotels that have customer rating greater than 8.0

Description: Get information on the number of hotels with rating > 8.0

Actor action: User wants to know the number of hotels with rating > 8.0 in cities

System Responses: Lists the number of hotels with rating > 8.0 in cities

```

CREATE VIEW vw_topcitiescount          AS
SELECT DISTINCT TOP 10                a.city,
                Count(a.NAME)      AS number_of_hotels
FROM           [dbo].[hotels]         AS a
INNER JOIN     [dbo].[restaurants]   AS b
ON             a.city = b.city
WHERE          a.rating > 8
GROUP BY       a.city
ORDER BY       number_of_hotels DESC
--Query For the Above View
SELECT TOP (1000)
    [city],
    [number_of_hotels]
FROM [dbo].[Vw_TopCitiesCount]

```

SQLQuery10.sql - to...pitality (user (63)) X SQLQuery8.sql - tour...pitality (user (55))\*

```
CREATE VIEW vw_topcitiescount
AS
    SELECT DISTINCT TOP 10 a.city,
                   Count(a.NAME) AS number_of_hotels
    FROM      [dbo].[hotels] AS a
    INNER JOIN [dbo].[restaurants] AS b
        ON a.city = b.city
    WHERE     a.rating > 8
    GROUP BY a.city
    ORDER BY number_of_hotels DESC

--Query for the above View
SELECT TOP (1000) [city]
      ,[number_of_hotels]
    FROM [dbo].[Vw_TopCitiesCount]
```

100 %

Results Messages

	city	number_of_hotels
1	Houston	1534
2	Dallas	1462
3	Austin	1176
4	Los Angeles	1092
5	San Antonio	1008
6	San Francisco	620
7	Anaheim	580
8	Fort Worth	432
9	San Diego	414
10	Arlington	378