

Walt Disney World Resort Hotel Restaurant Locations

IBM Data Science Capstone Project

Introduction

Walt Disney World has over 25 resort hotels that are owned and operated by the Walt Disney World Resort.

Walt Disney World generally classifies restaurants as table service and quick service. Table service restaurants have a wait staff, take reservations, and include buffets and character meals. Quick service restaurants are more commonly known as fast food restaurants, and food is ordered, and usually paid, at a counter or station.

Quick service restaurants at Walt Disney World can be crowded with long lines, and table service restaurants often have little availability and/or long waits to be seated.

With some analysis, executives could have data to decide if quick service restaurants need to be added to the Walt Disney World Resort hotels. Revenue may be increased if more restaurants are needed and added in prime locations, giving guests access to quick, convenient meals and more time out of lines and in shops, which will also increase revenue.

Data

To solve the problem, data needed included information about resort hotels, such as location and resort area, and information about the nearby restaurants.

To get this information, four sources are used..

1. The resort area in which the hotel is located is scraped from this web site, and this will be the master list of resort hotels. This master list included two non-Disney owned resort hotels because they are grouped with Disney resort hotels in the same area. (<https://touringplans.com/walt-disney-world/hotels>).
2. Longitude and latitude information for the resort hotels is required. This information is retrieved using the resort hotel address from this website (<https://touringplans.com/walt-disney-world/hotels/addresses>).
3. The number of rooms for each resort hotel is retrieved from this web site (<https://touringplans.com/walt-disney-world/hotels/number-rooms>).
4. The number and types of venues near the resort hotel, which is accessed using Foursquare location data, is used.

Methodology

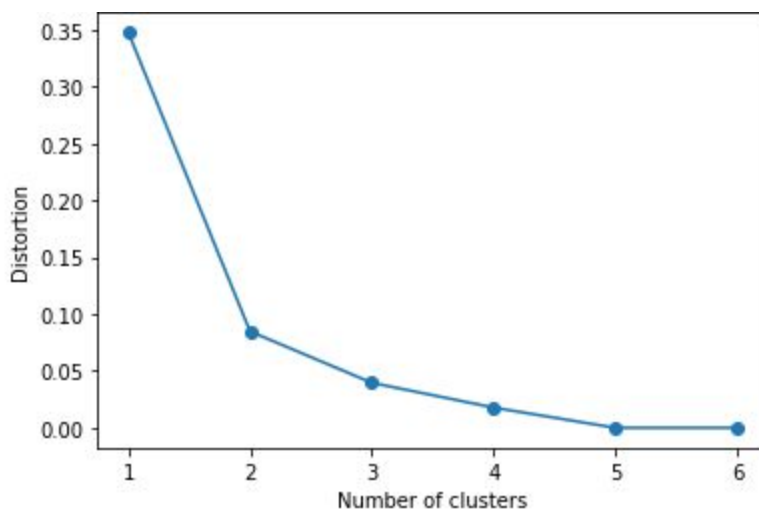
First, all three websites from touringplans.com are scraped for resort hotel name, resort area, resort address, and number of rooms. This information is merged into one table and saved to a csv file.

Next, using addresses of resort hotels, the latitude and longitude are retrieved using TomTom. The latitude and longitude are added to the table created from the previous step and saved to a csv file.

For the initial study, I decided to focus on the resort hotels in the Epcot resort area.

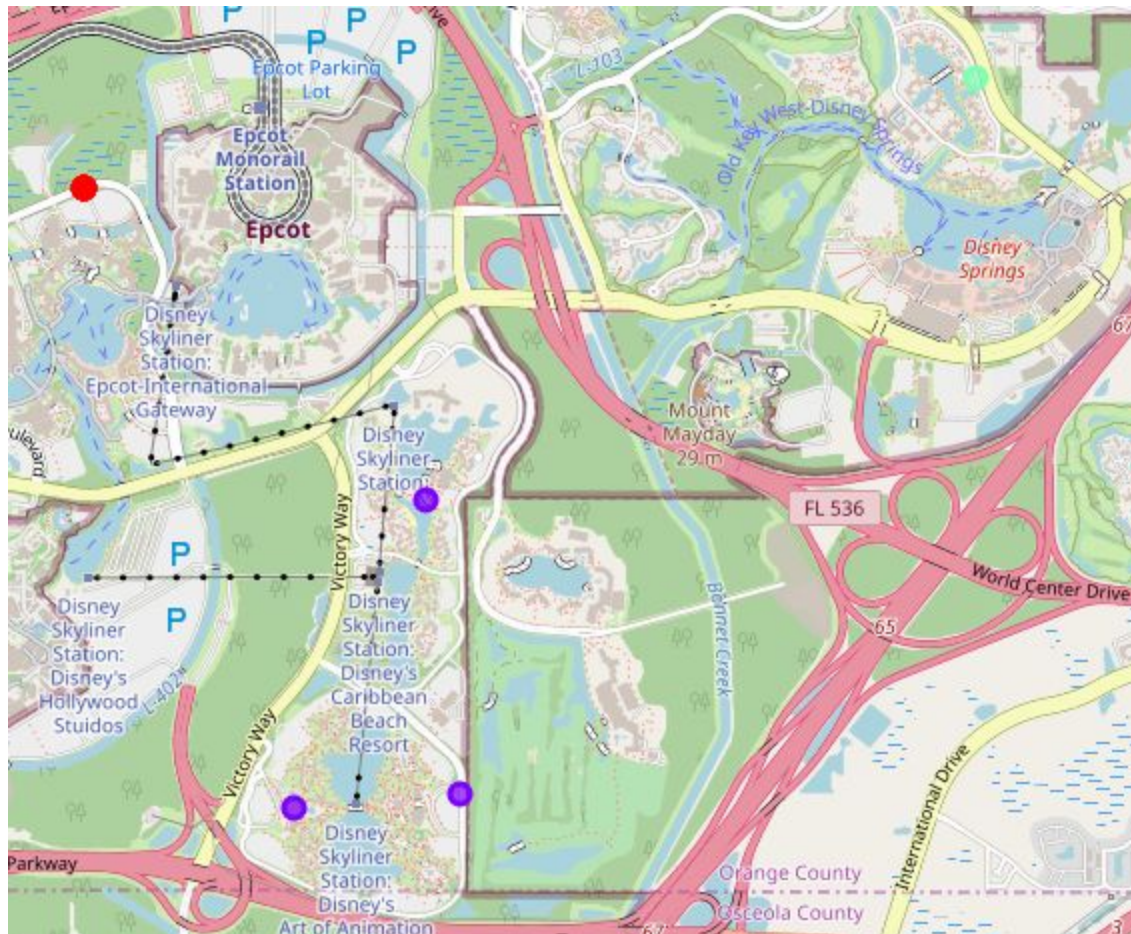
Using Foursquare and the latitudes and longitudes for each resort hotel, I retrieved venues near the resort hotels and ordered the venues into the ten most common for each resort hotel. I started with a radius of 500 meters and increased the radius to 1000 meters to get a more diverse list of venues.

I used K Means clustering to examine clusters. K Means works well because the data tends to be circular in nature. Using the Elbow Method, I estimated that the best number for k is 3 because that is the point where the inertia slows down.



Results

Cluster 1 (red) contained 9 resorts with a total of 4632 rooms, clusters 2 (blue) contained 3 resorts with a total of 6400 rooms, and cluster 3 (aqua) contained 1 resort with a total of 489 rooms. Looking at the map, this result seemed reasonable. (All 9 resorts in cluster 1 have the same latitude and longitude and, therefore, are represented with one marker on the map below.)



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Cluster 1

| Resort | Number of Rooms | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue | 8th Most Common Venue | 9th Most Common Venue | 10th Most Common Venue |
|------------------------------|-----------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Disney's Beach Club Resort | 583 | American Restaurant | Hotel Bar | Theme Park Ride / Attraction | Buffet | Convenience Store | Gym / Fitness Center | Ice Cream Shop | Laundromat | Lounge | Lighthouse |
| Disney's BoardWalk Inn | 378 | American Restaurant | Hotel Bar | Theme Park Ride / Attraction | Buffet | Convenience Store | Gym / Fitness Center | Ice Cream Shop | Laundromat | Lounge | Lighthouse |
| Disney's Yacht Club Resort | 630 | American Restaurant | Hotel Bar | Theme Park Ride / Attraction | Buffet | Convenience Store | Gym / Fitness Center | Ice Cream Shop | Laundromat | Lounge | Lighthouse |
| Dolphin at Walt Disney World | 1509 | American Restaurant | Hotel Bar | Theme Park Ride / Attraction | Buffet | Convenience Store | Gym / Fitness Center | Ice Cream Shop | Laundromat | Lounge | Lighthouse |
| Swan at Walt Disney World | 758 | American Restaurant | Hotel Bar | Theme Park Ride / Attraction | Buffet | Convenience Store | Gym / Fitness Center | Ice Cream Shop | Laundromat | Lounge | Lighthouse |
| Disney's Beach Club Villas | 282 | American Restaurant | Hotel Bar | Theme Park Ride / Attraction | Buffet | Convenience Store | Gym / Fitness Center | Ice Cream Shop | Laundromat | Lounge | Lighthouse |
| Disney's BoardWalk Villas | 532 | American Restaurant | Hotel Bar | Theme Park Ride / Attraction | Buffet | Convenience Store | Gym / Fitness Center | Ice Cream Shop | Laundromat | Lounge | Lighthouse |

Cluster 2

| Resort | Number of Rooms | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue | 8th Most Common Venue | 9th Most Common Venue | 10th Most Common Venue |
|----------------------------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|------------------------|
| Disney's Caribbean Beach Resort | 1536 | Hotel Pool | Hotel | Bus Stop | Restaurant | Bus Station | Tram Station | Laundromat | Convenience Store | Tourist Information Center | Coffee Shop |
| Disney's Art of Animation Resort | 1984 | Hotel Pool | Hotel | Hotel Bar | Playground | Bus Stop | Food Court | Arcade | Athletics & Sports | Gift Shop | Food Truck |
| Disney's Pop Century Resort | 2880 | Hotel | Hotel Pool | Bus Stop | Food Court | Lake | Arcade | Gym / Fitness Center | Hotel Bar | Playground | Laundromat |

Cluster 3

| Resort | Number of Rooms | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue | 8th Most Common Venue | 9th Most Common Venue | 10th Most Common Venue |
|-------------------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Disney's Riviera Resort | 489 | Hotel Bar | Bus Station | Hotel Pool | American Restaurant | Spa | Hotel | Ice Cream Shop | Arcade | Boat or Ferry | Café |

Discussion

Looking at the venues for quick service restaurants, clusters 2 and 3 both have a food court, cafe, or coffee shop in the top ten venues for each resort hotel. Cluster 1 seems to be lacking cafes, coffee shops and fast food restaurants. These quick service options are very appealing to guests that would like something quick to move to other activities.

Conclusion

The nine resort hotels in cluster 1 total over 4600 rooms, so there is opportunity to provide quick, convenient dining to a number of guests. Looking at a map, Disney's Beach Club Resort, Disney's Beach Club Villas and Disney's Yacht Club Resort total nearly 1500 rooms and are on one side of Crescent Lake, while the other two are on the opposite side, totaling around 900 rooms. Swan and Dolphin total around 2200 rooms.

Two quick service restaurants are recommended, one near Disney's Boardwalk Villas, which would also appeal to visitors to Disney's Boardwalk entertainment district and guests at the Swan and Dolphin, and one near Disney's Yacht Club Resort, which could serve the larger number of rooms as well as appeal to guests at the Swan and Dolphin.

The same technique can be applied to the other resort areas - Magic Kingdom, Animal Kingdom, and Disney Springs.

For further analysis, additional helpful information, such as the serving and seating capacity of the existing quick service restaurants and average room capacity per resort, would be helpful. In addition, distance from resort to resort and walkability might also be a consideration.