Finding the Best Hotel for the Perfect Charleston Vacation

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Capstone Project for the IBM Applied Data Science Certification

Introduction/Business Problem

Charleston, South Carolina is very popular tourist destination. Charleston is known for its rich history, well-preserved architecture, distinguished restaurants, and hospitable people. For eight years and counting, Charleston has been *Condé Nast Traveler*'s top U.S. tourist destination.[1] *Travel + Leisure* readers also ranked Charleston number 1 in the U.S. for the seventh year in a row,[2] and *Southern Living* readers picked Charleston as the South's Best City.[3] Additionally, many tourists have begun to flock to Charleston due to its status of "international food destination," much like Paris.[4]

While many tourists enjoy the charm of historic Charleston, many find driving and parking in and around the city cumbersome,[5] turning what should be a relaxing vacation into a stressful one. Hotels are spread throughout the Charleston area, but many of the most popular tourist destinations and restaurants are within walking distance of one another.

The aim of this project is to determine the best hotels for tourists in Charleston, based upon the number of historic sites, attractions, shops and restaurants within walking distance. The intended audience for this project is the first-time tourist to Charleston, who would like to spend more time relaxing and enjoying the city and less time in traffic. Utilizing publicly available ZIP code and latitude and longitude information, coupled with data from the Foursquare API, this project will provide tourists with a list of the hotels with the greatest number of walkable destinations, along with the hotel rankings from Foursquare users.

Data

To begin our exploration of the Charleston area, we will first use *BeautifulSoup* to scrape ZIP Codes and neighborhood names from https://www.zip-codes.com/county/sc-charleston.asp. This information will be transformed into a *pandas* dataframe.

Next, latitudes and longitudes for the various neighborhoods will be scraped from https://public.opendatasoft.com/explore/dataset/us-zip-code-latitude-and-longitude/table/. These will be appended to the ZIP code and neighborhood dataframe.

Following the construction of a map of the Charleston area, Foursquare data will be used to:

- Determine the Charleston area ZIP code with the highest density of restaurants and attractions. This will be the ZIP code where the desired hotels must be located.
- Determine all the hotels within the ZIP code.
- Determine which of the hotels has the highest number of restaurants and tourist attractions within 0.25 miles (considered to be an "acceptable" walking distance according to a study by the US Department of Health and Human Services[6]).

The tourist will be provided a list of the hotels with the highest number of destinations within walking distance, along with a map of the hotel locations and the hotel rankings from Foursquare.

References

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