**BAN 5733 Fall 2019**

**Individual Exercise 4 (10 Points)**

Ms. Green, a real estate investor you have previously done work for, was so excited about the outcome of a previous report on AirBNB data that you completed, she has asked you to do some additional analysis for her. She is still looking for a data-informed method to buy rental property to make available on AirBNB. Now she wants to know if the combination of the housing variables makes a difference in the price. She is trying to decide if all the variables really are important or just some of them. With this information, Ms. Green will be able to make informed decisions about which properties she should buy. As Ms. Green’s analyst, you have been asked to examine the **AIRBNB\_BOSTON.sas7bdat** data with the following data variables.

|  |  |  |
| --- | --- | --- |
| Variable Name | Description | Type |
| Listing\_ID | Listing ID is the ID given to each individual property available on AirBNB for booking. | Categorical |
| Accomodates | The number of guests the listing can accommodate on each stay | Continuous |
| Bathrooms | Number of bathrooms available for use by guests | Continuous |
| Bedrooms | The number of bedrooms available to guests | Continuous |
| Beds | The number of beds the guests can use | Continuous |
| Price | The nightly price for the listing | Continuous |

Your goal is to determine how the set of predictors relate to price. She has asked you (as an analyst) to report your findings in an understandable way as she is neither a statistician nor an analyst. You need to explain the results of the tests in non-technical terms with references to the technical output. Interpreting your output into meaningful business decisions and options is important to Ms. Green to make good actionable decisions.

You will be creating a report that is no more than 5 pages long with all supporting tables, charts and graphs included in the appendix with references in the main body of the report.

Tasks:

1. Conduct an analysis to determine if the set of predictors alters the nightly rental price.
   1. Variables to use:
      1. Dependent – PRICE
      2. Independent – ACCOMODATES, BEDROOMS, BATHROOMS, BEDS
   2. Create a null hypothesis and alternative hypothesis (2 points)
      1. Write these out in a way that is accurate and understandable to Ms. Green
      2. You may include a more technical hypothesis as a reference
   3. Test your hypothesis with a multiple regression analysis. (2 points)
      1. Any supporting code or screen shots should be in an appendix
   4. Verify the assumptions have been met for the test (2 points)
      1. Make sure you include information to discuss each of the assumptions for regression.
2. Summarize the results from the multiple regression analysis so Ms. Green is able to make appropriate decisions during her property buying process. Include appropriate graphs and charts to support your summary in an appendix. Make sure you reference as necessary in your report. (4 points)

Deliverables:

As you complete the exercise, create a report in Microsoft Word and in this report answer the questions in the exercise description. Copy and paste supporting tables/diagrams as needed to an appendix to justify any of your answers. Make sure you *print your name, student ID#, student email on the cover page* of the report and turn-in the report as communicated by your instructor. Please also put a running *header/footer with your name, on each page of your exercise* solution report. Failure to follow these instructions will result in deduction of points