IST 5520, Fall 2021, Chen

**Project Evaluation Form – Milestone 2: Data Analysis I**

**Submission Due Oct 29, 11:59 PM**

**Instruction:**

1. Cleanse and visualize data. The project report should include:

* Introduction (refined from M1)
* Data Source and Collection (refined from M1)
* Data manipulation (newly developed)
* Data summarization and visualization (newly developed)

Read the evaluation criteria carefully on the next page for the detail.

1. Use Markdown in jupyter notebook to write your project report. You need to use proper Markdown syntax to format your report. Do not use MS Word or other format.
2. Please submit the following documents into Canvas:

* The project report written in .ipynb file;
* The Evaluation form with full project team information (see below table).

**Project Team Information (filled in by students)**

| **Member name** | **Percent contribution** | **Activities completed by the member** |
| --- | --- | --- |
| Xinyue Chen |  | Wordclouds, general data manipulation and cleansing |
| Nathan Dierkes |  | M1 revisions, regplots, PCA, general data manipulation and cleansing |
| Joe Distler |  | Boxplots/outlier detection, general data manipulation and cleansing |
| Viraj Vilas Rane |  | Heatmap, general data manipulation and cleansing |
| Abby Ross |  | Jointplots, general data manipulation and cleansing |
| Yinkai Xiong |  | More advanced data cleansing, handling missing values, general data manipulation and cleansing |

**Evaluation Summary – M2 (filled in by instructor)**

| **Criteria** | **Target %** | **Comments** | **Evaluation** |
| --- | --- | --- | --- |
| * Refine your report based on M1. * Extract and transform potential variables from the data source(s). Cleanse your dataset(s). | 20 |  |  |
| * Manipulate and clean your dataset properly. * Properly deal with categorical variables. * Properly detect outliers and deal with missing values in your dataset. | 30 |  |  |
| * Summarize and visualize data by using appropriate methods. * Professionally interpret your data summary and visualization. * Use various dimension reduction techniques (visualization, correlation, principal component analysis, variable selection etc.) to explore your data. * Provide summary statistics, correlation table/plot, and at least 4 professional graphs with detailed and proper interpretations.   + Word cloud   + Box plots (outliers)   + Joint plot | 30 |  |  |
| * Format your project report in a professional way. * Professionally organize your contents to show your data management and analysis efficiently and concisely. * Write your project report by using appropriate Markdown syntax. | 15 |  |  |
| * Use the repository to manage all your project documents including meeting schedules, meeting minutes, and the proposal (the instructor should be invited to verify this). * Your github repository should contain the latest documents for your project deliverables. | 5 |  |  |
| The report satisfies all of the following criteria:   * It tells a very interesting story; * The data manipulation methods are professionally applied; * The whole document is well written with no or few grammar or writing issues. | 10 bonus |  |  |
| **Total** | **100** |  |  |

~~Revise M1 based on comments from evaluation form -- Nathan~~

~~Data cleansing -- Tony~~

* ~~Last scraped – use to calculate host age~~
* ~~0 in beds column~~
* ~~Convert license to dummy/binary value~~
  + ~~1 = if they have license number~~
* ~~Missing values~~
  + ~~If less than 10% drop~~
  + ~~Otherwise, fill with mean/median/mode~~

Visualization:

* ~~Boxplots for: --Joe~~
  + ~~listings per host~~
  + ~~number of amenities~~
  + ~~distance from center~~
  + ~~Under ‘additional boxplots’ heading:~~
    - ~~Price~~
    - ~~Min/max nights?~~
* 4 “professional” graphs
  + ~~Regplot (completed) – Nathan to add “interpretation”~~
  + ~~Word cloud -- Luna~~
    - ~~Description~~
    - ~~About\_host~~
  + ~~Box plots (combined?) -- joe (same as above)~~
  + ~~Joint plot -- Abby~~
    - ~~Multiple?~~
  + Heat map for location – Viraj
    - Longitude/latitude