BUSI 201: Business Data Analysis

Final Exam

INSTRUCTIONS:

- `BUSI201-S2024-Final-S01-Workbook.xlsx` is the companion workbook.

- The workbook consists of 9 worksheets

- The quiz booklet contains 6 problems over 9 pages including this page.

- Good luck, and have a great Summer Break!

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Problem #1. Functions Part 1

Navigate to worksheet P01. Complete the tasks described below using functions. Any completed material that is deemed to be manually calculated will not receive any credit. All results may work as intended regardless of how the data is sorted or filtered.

Summary Statistics by Neighbourhood			
Neighbourhood	**Number of Listings**	**Average Price**	**Average Ratings**
Manhattan			
Brooklyn			
Queens	A	B	C
Bronx			
Staten Island			

- **Task #1:**

  – Fill the cells in the Red Box: A with the number of Airbnb listings by neighbourhood. For instance, cell M4 should display the total number of Airbnb listings in Manhattan.

- **Task #2:**

  – Fill the cells in the Blue Box: B with the average price of Airbnb listings by neighbourhood. For instance, cell N4 should display the average price of all Airbnb listings in Manhattan.

- **Task #3:**

  – Fill the cells in the Orange Box: C with the average ratings of Airbnb listings by neighbourhood. For instance, cell O4 should display the average ratings of all Airbnb listings in Manhattan.

Problem #2. Functions Part 2

Navigate to worksheet P02. Complete the tasks described below using functions. Any completed material that is deemed to be manually calculated will not receive any credit. All results may work as intended regardless of how the data is sorted or filtered.

Property Information Lookup			
Price Rank	**Price ($)**	**Host ID**	**Ratings**
1			
2			
3	A	B	C
4			
5			

- **Task #1:**

  - Fill the cells in the Red Box: A with the price (dollar terms) of the 1st ∼ 5th most expensive Airbnb listing in the given dataset. For instance, cell M4 should display the price of the most expensive Airbnb listing in New York City.

- **Task #2:**

  - Fill the cells in the Blue Box: B with the Host ID corresponding to the 1st ∼ 5th most expensive Airbnb listing in the given dataset. For instance, cell N4 should display the Host ID corresponding to the most expensive Airbnb listing in New York City.

- **Task #3:**

  - Fill the cells in the Orange Box: C with the ratings of the 1st ∼ 5th most expensive Airbnb listing in the given dataset. For instance, cell O4 should display the numerical rating of the most expensive Airbnb listing in New York City.

Problem #3. Sorting and Filtering

Complete the tasks described below using filtering / sorting across two worksheets, P03−1 and P03−2.

- **Task #1:**

  - Navigate to worksheet P03−1. Sort the data such that the cheapest Airbnb listings in Bronx shows up on the top, followed by the second cheapest Airbnb listing in Bronx, · · · , followed by the most expensive Airbnb listing in Bronx, followed by the cheapest Airbnb listing in Brooklyn, · · · , followed by the most expensive Airbnb listing in Brooklyn, followed by the cheapest Airbnb listing in Manhattan, · · ·

  - Hint: Neighbourhood should be sorted alphabetically.

Airbnb Listings in New York City								
Neighbourhood	Property Type	Room Type	ZIP	Beds	# Reviews	Price	Host ID	Ratings
Bronx	House	Shared room	10462	1	2	$ 10.00	14381346	100
Bronx	Apartment	Shared room	10458	1	1	$ 21.00	27187487	80
Bronx	House	Shared room	10462	1	41	$ 22.00	14381346	89
-- Results Omitted --								
Bronx	House	Entire home/apt	10451	4	37	$ 244.00	8826175	91
Brooklyn	Apartment	Shared room	11206	1	17	$ 20.00	3991870	81
Brooklyn	Apartment	Shared room	11213	1	15	$ 24.00	8552208	84
-- Results Omitted --								

- **Task #2:**

  - Navigate to worksheet P03−2. Filter the data such that only "Entire home/apt" type listings in "Manhattan," which are strictly cheaper than $100 is visible to the reader.

Airbnb Listings in New York City								
Neighbourhood	Property Type	Room Type	ZIP	Beds	# Reviews	Price	Host ID	Ratings
Manhattan	Apartment	Entire home/apt	10002	1	1	$ 80.00	7498	80
Manhattan	Apartment	Entire home/apt	10010	2	14	$ 99.00	56944	82
Manhattan	Apartment	Entire home/apt	10027	3	73	$ 99.00	126607	91
Manhattan	Apartment	Entire home/apt	10027	2	137	$ 99.00	127772	91
Manhattan	Apartment	Entire home/apt	10028	2	9	$ 99.00	140331	87
Manhattan	Apartment	Entire home/apt	10039	1	1	$ 60.00	156137	80
Manhattan	Apartment	Entire home/apt	10031	4	173	$ 89.00	163545	93

Problem #4. Conditional Formatting

Complete the tasks described below across two worksheets, P04-1 and P04-2.

- **Task #1:**

  - Navigate to worksheet P04-1. Apply conditional formatting to replicate the results in the Red Box. The cutoffs for each icon is as follows:
    * Green Circle: Rating is greater than or equal to 97.
    * Yellow Triangle: Rating is greater than or equal to 95, but strictly lower than 97.
    * Red Diamond: Rating is strictly lower than 95.

Airbnb Listings in New York City									
Neighbourhood	**Property Type**	**Room Type**	**ZIP**	**Beds**	**# Reviews**	**Price**	**Host ID**	**Ratings**	**Ratings (Visual)**
Manhattan	Apartment	Private room	10036	3	39	$ 549.00	500	96	△
Brooklyn	Apartment	Entire home/apt	11222	1	4	$ 149.00	1039	100	●
Manhattan	Apartment	Entire home/apt	10004	1	9	$ 250.00	1783	100	●
Brooklyn	Apartment	Private room	11201	1	80	$ 90.00	2078	94	◆
Manhattan	Apartment	Entire home/apt	10009	2	23	$ 290.00	2339	96	△
Manhattan	Apartment	Entire home/apt	10009	2	95	$ 270.00	2339	90	◆
Brooklyn	Apartment	Entire home/apt	11221	2	14	$ 170.00	2571	98	●

- **Task #2:**

  - Navigate to worksheet P04-2. Apply conditional formatting so that listings with ratings strictly greater than 95 has a green background fill. You do not need to exactly match the colors.

Airbnb Listings in New York City								
Neighbourhood	**Property Type**	**Room Type**	**ZIP**	**Beds**	**# Reviews**	**Price**	**Host ID**	**Ratings**
Manhattan	Apartment	Private room	10036	3	39	$ 549.00	500	96
Brooklyn	Apartment	Entire home/apt	11222	1	4	$ 149.00	1039	100
Manhattan	Apartment	Entire home/apt	10004	1	9	$ 250.00	1783	100
Brooklyn	Apartment	Private room	11201	1	80	$ 90.00	2078	94
Manhattan	Apartment	Entire home/apt	10009	2	23	$ 290.00	2339	96
Manhattan	Apartment	Entire home/apt	10009	2	95	$ 270.00	2339	90
Brooklyn	Apartment	Entire home/apt	11221	2	14	$ 170.00	2571	98

Problem #5. Charts

Navigate to worksheet P05. Use the tables in the worksheet to complete the tasks described below.

- **Task #1:**

    - Replicate the chart displayed below as closely as possible.
        * Chart Type, Chart Title, Axis Bounds
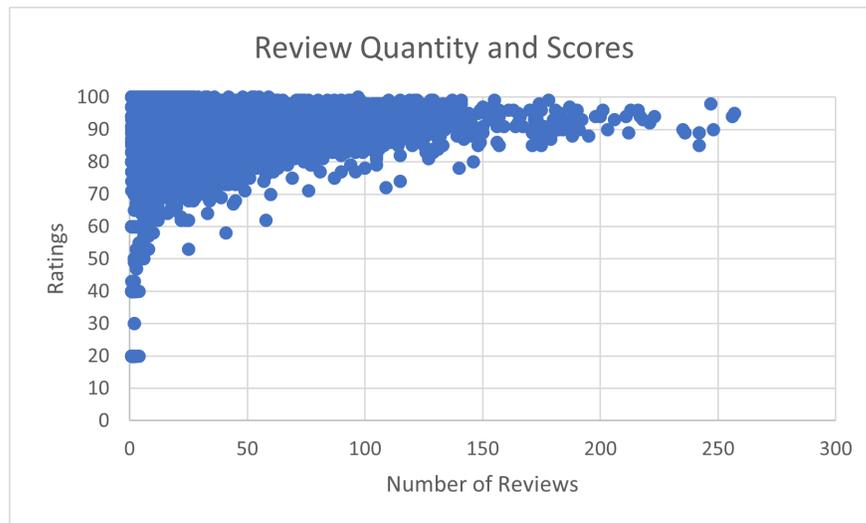
- **Task #2:**

    - Replicate the chart displayed below as closely as possible.
        * Chart Type, Chart Title, Bin Width
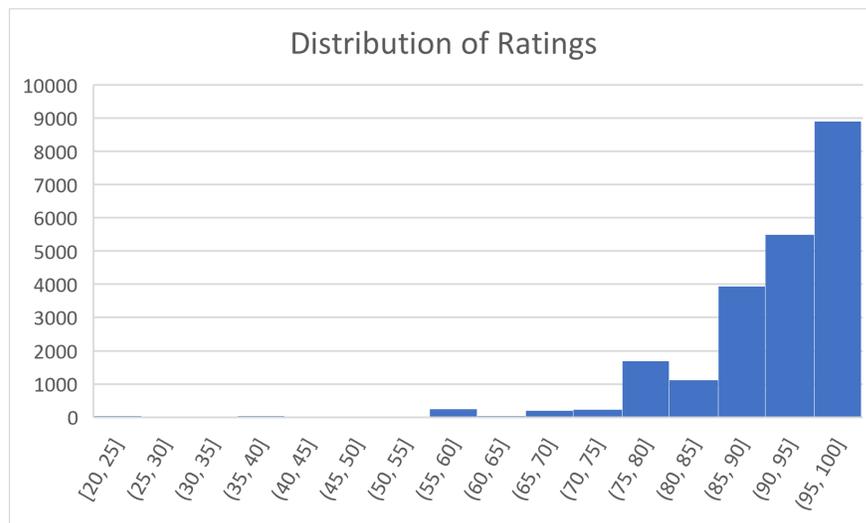
Problem #6. PivotTables

Use the tables in worksheets P06-1 and P06-2 to complete the tasks described below.

- **Task #1:**

  - Replicate the following PivotTable displayed below as closely as possible on existing worksheet P06-1.

    * Rows, Columns, Values, Formatting, Layout.

Average of Price	Neighbourhood ▾					
Beds ▾	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Grand Total
0	$ 65.00					$ 65.00
1	$ 62.90	$ 99.98	$ 146.69	$ 79.68	$ 65.02	$ 123.05
2	$ 85.94	$ 149.54	$ 220.43	$ 110.58	$ 83.68	$ 184.69
3	$ 99.17	$ 200.64	$ 283.43	$ 128.16	$ 114.89	$ 236.07
4	$ 139.88	$ 222.88	$ 358.59	$ 177.18	$ 115.50	$ 279.51
5	$ 142.50	$ 306.11	$ 451.80	$ 251.71	$ 149.50	$ 355.83
6	$ 230.00	$ 267.62	$ 515.23	$ 189.38	$ 274.67	$ 380.24
7		$ 265.86	$ 439.33	$ 268.25		$ 320.89
8		$ 438.63	$ 568.33	$ 269.50		$ 466.13
9		$ 250.00	$ 732.50	$ 675.00		$ 618.89
10		$ 436.25	$ 609.75	$ 343.00		$ 463.87
11		$ 220.00	$ 229.50			$ 226.33
12		$ 300.00	$ 187.50		$ 4,999.00	$ 1,418.50
16		$ 673.83	$ 925.00	$ 350.00	$ 750.00	$ 699.30
Grand Total	$ 75.20	$ 127.77	$ 183.56	$ 96.81	$ 147.68	$ 154.76

- **Task #2:**

  - Replicate the following PivotTables and Silcer displayed below as closely as possible on existing worksheet P06-2.

  - The slicer <u>must</u> be capable of filtering data for both PivotTables simultaneously.

Average of Price	Column Labels ▾					
Row Labels ▾	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Grand Total
Entire home/apt	$ 156.50	$ 239.53	$ 372.05	$ 196.11	$ 115.50	$ 297.70
Private room	$ 90.00	$ 142.58	$ 117.31	$ 94.50		$ 127.86
Shared room		$ 32.77	$ 50.00	$ 38.75		$ 35.06
Grand Total	$ 139.88	$ 222.88	$ 358.59	$ 177.18	$ 115.50	$ 279.51

Average of Price	Column Labels ▾					
Row Labels ▾	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Grand Total
Apartment	$ 113.33	$ 204.42	$ 337.24	$ 168.04		$ 271.51
Bed & Breakfast		$ 104.00	$ 200.00	$ 59.00		$ 111.29
Camper/RV				$ 109.00		$ 109.00
House	$ 157.25	$ 252.10	$ 824.00	$ 210.00	$ 115.50	$ 281.98
Loft	$ 150.00	$ 331.31	$ 486.40			$ 417.21
Townhouse		$ 378.00	$ 215.25			$ 305.67
Grand Total	$ 139.88	$ 222.88	$ 358.59	$ 177.18	$ 115.50	$ 279.51

Beds ⧉ ▽

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