



# Homework Assignment for Data Analyst

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# About me



## Rafael Fagundes

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With 10+ years in data and marketing, I specialize in scalable, data-driven solutions using SQL and Python. I'm eager to support Bolt's growth by empowering analysts and optimizing processes for impact.



# Approach & Key Considerations

- **Part I:** The main challenge for this task was ensuring the correct formulas were applied. Below are the formulas I used:

METRIC	DEFINITION	FORMULA
<b>RIDES</b>	Total number of rides	Sum of Rides
<b>GMV</b>	Gross Merchandise Value (Total value of orders)	Sum of GMV
<b>ASP (PRICE)</b>	Average Selling Price per Ride	GMV / RIDES
<b>COMMISSION</b>	Total commission earned (in %)	Average of Commission
<b>NET RATE %</b>	Profitability metric, typically Net Revenue / GMV	Average Net Rate %
<b>EBITDA</b>	Earnings Before Interest, Taxes, Depreciation, and Amortization	Sum of EBITDA
<b>EBITDA % OF GMV</b>	EBITDA margin relative to GMV	EBITDA / GMV

- Additionally, I corrected a typo where "**Commission**" was misspelled as "Comission" in the **DataFinance** dataset. I also removed the % symbols from the Commission and Net Rate columns to allow proper referencing.
- One point of uncertainty was whether the Commission values represented percentages or currency. Given how small the numbers were, I assumed they referred to percentages and calculated them as such.
- To enable regional grouping, I created a "**Country to Region Map**" tab and used VLOOKUP to add a **region\_name** column. Finally, I applied conditional formatting with color scales and highlighted negative numbers for better visualization.
- **Part II:** Manually created the "**Copy of Regional Review File**" tab by replicating the structure from the "**Regional Review File**" tab and pre-filled it with the necessary data. Exported one file per region and removed irrelevant rows to keep only the data for each region. Due to Google **Apps Script limitations**, some formatting (colors, number formats) couldn't be fully preserved.
- **Part III:** Used **Python** to analyze the **DataRides** tab (exported as CSV). Calculated key metrics and visualized trends through charts. The short report follows a **scorecard format**, highlighting key metrics, main insights, and recommendations for clarity.

# Part I: Spreadsheet Formulas & Formatting Assessment

The file used for this exercise is available here:

<https://docs.google.com/spreadsheets/d/15U8vTXwlxqysytAGqDII2OE52lafyWpJhH5PfTem-iU/edit?usp=sharing>

		FY 2024							FY 2023							YoY Growth Rate						
		RIDES	GMV	ASP (PRICE)	COMMISSION	NET RATE	EBITDA	EBITDA % OF GMV	RIDES	GMV	ASP (PRICE)	COMMISSION	NET RATE	EBITDA	EBITDA % OF GMV	RIDES	GMV	ASP (PRICE)	COMMISSION %	NET RATE %	EBITDA	EBITDA % OF GMV
TOTAL		649.9M	3.5B	5.3	19.5%	-21.5%	37.4M	1.1%	944.5M	5.2B	5.5	-6601.9%	-7.7%	115.8M	2.2%	45.3%	51.1%	4.0%	-33921.7%	-64.0%	209.8%	105.1%
North		63.3M	722.7M	11.4	20.5%	12.4%	27.2M	3.8%	87.3M	1.0B	12.0	18.7%	9.4%	51.1M	4.9%	37.8%	44.3%	4.7%	-8.8%	-23.5%	87.9%	30.2%
West		19.8M	448.0M	22.6	11.7%	0.6%	-14216.8K	-3.2%	31.1M	684.7M	22.0	15.1%	4.0%	13.8M	2.0%	57.2%	52.8%	-2.8%	28.9%	580.7%	-197.4%	-163.7%
Center		313.1M	1.6B	5.0	16.4%	4.7%	-12438.7K	-0.8%	434.8M	2.4B	5.6	-13636.4%	4.5%	-4440.9K	-0.2%	38.9%	55.2%	11.7%	-83188.8%	-3.4%	-64.3%	-77.0%
South		186.6M	536.0M	2.9	40.2%	-232.7%	31.4M	5.9%	244.1M	651.3M	2.7	34.7%	-111.2%	41.0M	6.3%	30.8%	21.5%	-7.1%	-13.8%	-52.2%	30.8%	7.7%
Rest		67.1M	179.1M	2.7	2.8%	2.3%	5.5M	3.0%	147.2M	405.6M	2.8	7.4%	4.2%	14.2M	3.5%	119.4%	126.5%	3.2%	168.7%	80.0%	160.2%	14.9%
COUNTRY1	North	2.9M	69.0M	23.6	15.3%	6.6%	304.0K	0.4%	3.9M	93.0M	23.9	18.3%	6.1%	2.5M	2.7%	33.1%	34.8%	1.3%	19.6%	-8.5%	722.5%	510.1%
COUNTRY3	Center	33.9M	531.1M	15.7	12.3%	1.6%	-44168.1K	-8.3%	49.1M	815.8M	16.6	-73259.2%	4.6%	-41758.7K	-5.1%	44.8%	53.6%	6.1%	-596395.5%	192.5%	-5.5%	-38.4%
COUNTRY8	Center	66.5M	300.0M	4.5	21.1%	3.2%	9.4M	3.1%	98.2M	460.6M	4.7	22.0%	2.7%	10.9M	2.4%	47.7%	53.5%	3.9%	4.5%	-16.3%	16.5%	-24.1%
COUNTRY11	North	16.6M	102.8M	6.2	41.9%	30.3%	16.9M	16.5%	21.9M	141.7M	6.5	29.3%	21.3%	19.4M	13.7%	31.9%	37.8%	4.4%	-30.1%	-29.7%	14.6%	-16.8%
COUNTRY12	West	19.3M	437.4M	22.7	11.8%	0.1%	-14587.0K	-3.3%	30.6M	673.1M	22.0	15.4%	3.8%	13.7M	2.0%	58.4%	53.9%	-2.9%	30.2%	5865.3%	-193.8%	-161.0%
COUNTRY13	West			0.0				0.0%			0.0				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COUNTRY14	South	22.8M	38.1M	1.7	11.5%	9.8%	3.3M	8.6%	31.7M	47.6M	1.5	13.2%	6.7%	5.4M	11.4%	38.9%	25.1%	-10.0%	14.6%	-31.4%	66.6%	33.2%
COUNTRY16	North	13.1M	192.8M	14.7	5.3%	-1.8%	-3845.4K	-2.0%	18.6M	282.9M	15.2	9.4%	-0.8%	1.1M	0.4%	41.3%	46.7%	3.8%	77.9%	-55.2%	-127.9%	-119.0%
COUNTRY18	Center	84.6M	178.2M	2.1	10.2%	6.4%	6.8M	3.8%	97.0M	229.4M	2.4	12.3%	1.6%	11.2M	4.9%	14.7%	28.7%	12.2%	20.9%	-75.4%	65.8%	28.9%
COUNTRY21	Rest	64.9M	173.2M	2.7	3.2%	2.7%	5.6M	3.2%	144.5M	398.7M	2.8	8.4%	4.7%	14.2M	3.6%	122.8%	130.2%	3.3%	164.2%	77.1%	155.2%	10.9%
COUNTRY22	Center	8.6M	55.5M	6.5	18.2%	10.8%	5.9M	10.7%	12.6M	80.8M	6.4	15.4%	7.3%	5.6M	6.9%	47.1%	45.5%	-1.1%	-15.3%	-32.6%	-5.8%	-35.3%
COUNTRY25	Rest	2.2M	5.9M	2.7	0.0%	0.0%	-101.3K	-1.7%	2.6M	6.9M	2.6	1.0%	0.5%	16.1K	0.2%	20.5%	17.3%	-2.7%	0.0%	-1043902.1%	-115.9%	-113.5%
COUNTRY28	North	2.2M	48.7M	21.9	7.1%	3.4%	-965.6K	-2.0%	3.8M	82.8M	21.6	11.1%	2.3%	6.7M	8.1%	71.8%	70.0%	-1.1%	57.8%	-31.6%	-790.8%	-506.3%
COUNTRY30	Center	50.8M	267.5M	5.3	18.1%	3.9%	4.4M	1.6%	87.2M	501.5M	5.8	19.3%	3.6%	2.8M	0.6%	71.6%	87.5%	9.3%	6.8%	-6.2%	-37.4%	-66.6%
COUNTRY31	Center	59.9M	186.2M	3.1	12.3%	3.2%	-115.2K	-0.1%	79.2M	272.5M	3.4	13.4%	5.0%	-61.5K	0.0%	32.3%	46.4%	10.7%	8.7%	55.0%	-46.6%	-63.5%
COUNTRY32	South	128.9M	402.4M	3.1	53.2%	-354.5%	24.6M	6.1%	167.6M	501.0M	3.0	45.0%	-170.7%	33.9M	6.8%	30.0%	24.5%	-4.2%	-15.5%	-51.9%	37.6%	10.5%
COUNTRY42	West	500.6K	10.5M	21.0	9.6%	8.7%	370.3K	3.5%	547.5K	11.6M	21.1	9.9%	7.7%	162.7K	1.4%	9.4%	9.9%	0.5%	4.0%	-11.4%	-56.1%	-60.0%
COUNTRY44	Center	8.8M	60.0M	6.8	27.7%	13.6%	5.3M	8.9%	11.5M	88.9M	7.8	23.9%	12.3%	6.9M	7.7%	29.7%	48.0%	14.2%	-14.0%	-9.0%	28.4%	-13.3%
COUNTRY48	North	7.4M	58.1M	7.9	17.9%	13.0%	8.6M	14.8%	9.4M	74.6M	7.9	18.6%	13.9%	10.7M	14.4%	26.9%	28.3%	1.0%	4.0%	6.9%	25.0%	-2.6%
COUNTRY51	South	34.7M	95.0M	2.7	16.3%	11.4%	3.4M	3.5%	44.6M	101.5M	2.3	14.5%	7.3%	1.6M	1.6%	28.5%	6.8%	-16.9%	-11.2%	-35.6%	-51.6%	-54.7%
COUNTRY55	North	1.6M	26.2M	16.0	3.4%	-5.5%	-2622.7K	-10.0%	4.0M	61.7M	15.6	8.9%	-5.9%	-2744.2K	-4.4%	142.1%	135.3%		158.5%	6.6%	4.6%	-55.5%
COUNTRY56	North	10.9M	74.9M	6.9	11.2%	9.1%	7.8M	10.4%	13.1M	92.7M	7.1	13.8%	7.9%	11.4M	12.3%	20.1%	23.8%	3.1%	23.5%	-13.3%	46.5%	18.4%
COUNTRY60	North	8.5M	150.2M	17.6	19.6%	6.3%	1.1M	0.7%	12.7M	213.8M	16.9	21.0%	4.4%	2.1M	1.0%	48.7%	42.4%	-4.2%	7.2%	-30.4%	99.1%	39.8%
COUNTRY65	South	117.1K	494.4K	4.2	16.8%	16.7%	93.5K	18.9%	151.7K	1.2M	8.1	16.1%	15.7%	53.3K	4.3%	29.6%	149.5%	92.6%	-3.8%	-6.2%	-43.0%	-77.2%

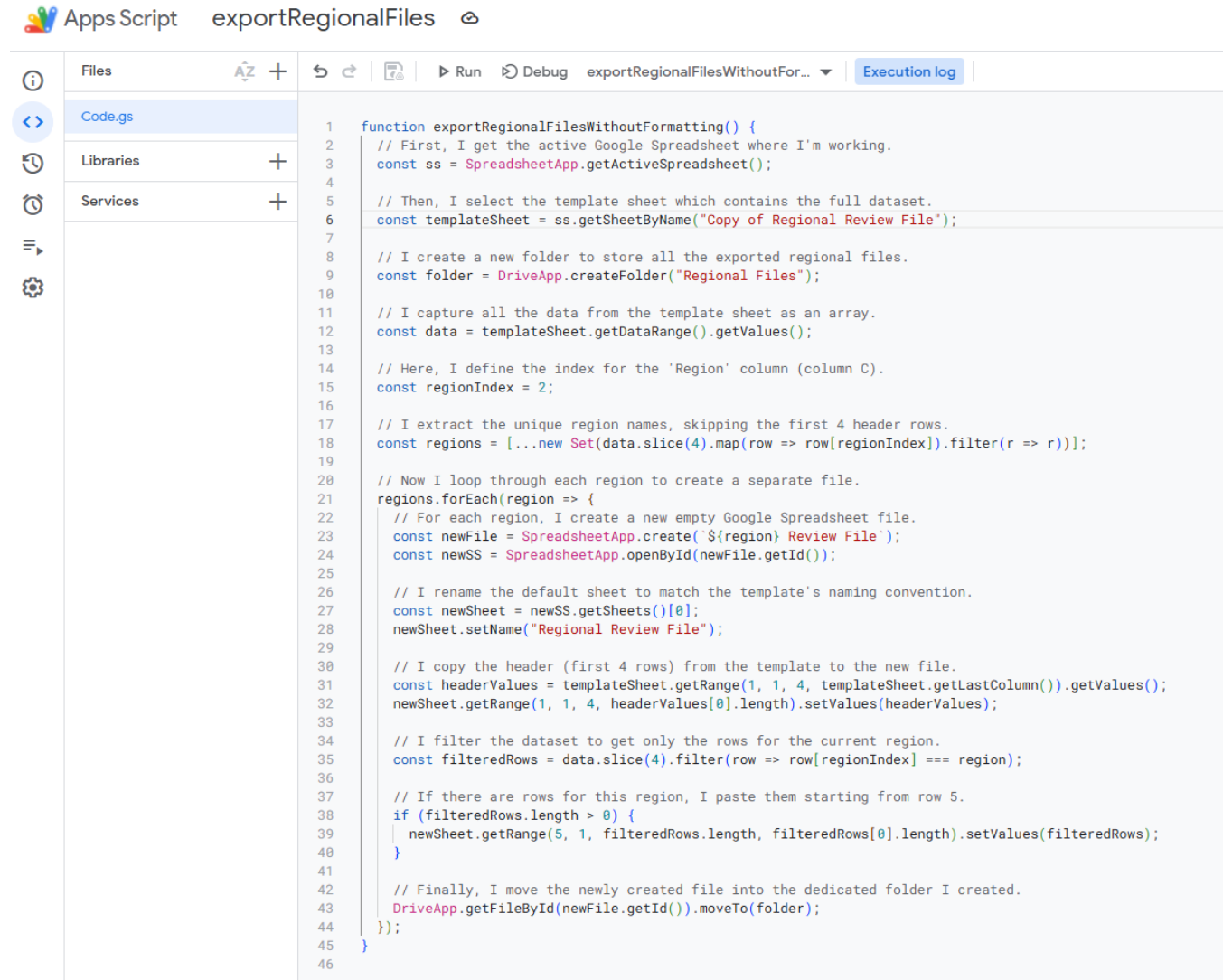
# Part II: Apps Script Literacy

The regional files are available at the following links:

REGIONAL FILE NAME	FILE URL	FOLDER URL
North	<a href="https://docs.google.com/spreadsheets/d/1_FZ4OWZsMLLuQWPjdC21Ag_kgyAi1gp6J9Uf5MXBHv8/edit?usp=drive_link">https://docs.google.com/spreadsheets/d/1_FZ4OWZsMLLuQWPjdC21Ag_kgyAi1gp6J9Uf5MXBHv8/edit?usp=drive_link</a>	<a href="https://drive.google.com/drive/folders/17p6MVaKwG6HZUfl4iBVM6h_0iZ7elnxX?usp=sharing">https://drive.google.com/drive/folders/17p6MVaKwG6HZUfl4iBVM6h_0iZ7elnxX?usp=sharing</a>
West	<a href="https://docs.google.com/spreadsheets/d/1t9LNb-bgQGN-Mf5guP1MzT4TzYaJfJgdYzzmvvRYRWI/edit?usp=drive_link">https://docs.google.com/spreadsheets/d/1t9LNb-bgQGN-Mf5guP1MzT4TzYaJfJgdYzzmvvRYRWI/edit?usp=drive_link</a>	
Center	<a href="https://docs.google.com/spreadsheets/d/1uqUHuBU-PPftLPfqcBt0ilSHf01l-WOjhPYxYWdP3o/edit?usp=drive_link">https://docs.google.com/spreadsheets/d/1uqUHuBU-PPftLPfqcBt0ilSHf01l-WOjhPYxYWdP3o/edit?usp=drive_link</a>	
South	<a href="https://docs.google.com/spreadsheets/d/1RIa0aGn99A-vdCX_BkA4CX8_v0GADdjae6tyXpToR54/edit?usp=drive_link">https://docs.google.com/spreadsheets/d/1RIa0aGn99A-vdCX_BkA4CX8_v0GADdjae6tyXpToR54/edit?usp=drive_link</a>	
Rest	<a href="https://docs.google.com/spreadsheets/d/1FVglUELLkgHoPVuP_32tBeunOzeGEyB6hXnDif5Um0s/edit?usp=sharing">https://docs.google.com/spreadsheets/d/1FVglUELLkgHoPVuP_32tBeunOzeGEyB6hXnDif5Um0s/edit?usp=sharing</a>	

# Part II: Apps Script Literacy

The Apps Script code is available here:



The screenshot shows the Google Apps Script editor interface. The top bar displays the Apps Script logo, the file name 'exportRegionalFiles', and a share icon. Below the top bar is a toolbar with icons for Files, Code.gs, Libraries, Services, and an Execution log. The main area shows the code for the 'exportRegionalFilesWithoutFormatting()' function. The code is as follows:

```
1 function exportRegionalFilesWithoutFormatting() {
2   // First, I get the active Google Spreadsheet where I'm working.
3   const ss = SpreadsheetApp.getActiveSpreadsheet();
4
5   // Then, I select the template sheet which contains the full dataset.
6   const templateSheet = ss.getSheetByName("Copy of Regional Review File");
7
8   // I create a new folder to store all the exported regional files.
9   const folder = DriveApp.createFolder("Regional Files");
10
11  // I capture all the data from the template sheet as an array.
12  const data = templateSheet.getDataRange().getValues();
13
14  // Here, I define the index for the 'Region' column (column C).
15  const regionIndex = 2;
16
17  // I extract the unique region names, skipping the first 4 header rows.
18  const regions = [...new Set(data.slice(4).map(row => row[regionIndex]).filter(r => r))];
19
20  // Now I loop through each region to create a separate file.
21  regions.forEach(region => {
22    // For each region, I create a new empty Google Spreadsheet file.
23    const newFile = SpreadsheetApp.create(`${region} Review File`);
24    const newSS = SpreadsheetApp.openById(newFile.getId());
25
26    // I rename the default sheet to match the template's naming convention.
27    const newSheet = newSS.getSheets()[0];
28    newSheet.setName("Regional Review File");
29
30    // I copy the header (first 4 rows) from the template to the new file.
31    const headerValues = templateSheet.getRange(1, 1, 4, templateSheet.getLastColumn()).getValues();
32    newSheet.getRange(1, 1, 4, headerValues[0].length).setValues(headerValues);
33
34    // I filter the dataset to get only the rows for the current region.
35    const filteredRows = data.slice(4).filter(row => row[regionIndex] === region);
36
37    // If there are rows for this region, I paste them starting from row 5.
38    if (filteredRows.length > 0) {
39      newSheet.getRange(5, 1, filteredRows.length, filteredRows[0].length).setValues(filteredRows);
40    }
41
42    // Finally, I move the newly created file into the dedicated folder I created.
43    DriveApp.getFileById(newFile.getId()).moveTo(folder);
44  });
45 }
```

# Part III: Market Analysis Report

## Key Metrics

Total number of rides  
**72k**

Avg. number of rides  
per day  
**10k**

Avg. ride distance  
**8 km**

Avg. ride duration  
**15 minutes**

Avg. pickup distance  
**1.5 km**

Avg. revenue per ride  
**€ 11**

Total revenue generated  
**€ 796k**

Avg. client rating  
**4.8 / 5**

## Key Insights

- Most revenue concentrated during the morning peak (7-11am).
- Saturday is the busiest day in volume.
- Average ride is relatively short (8 km, 15 min).
- Average ticket is ~€11.

## Recommendations

- Focus marketing on morning commuters.
- Optimize driver supply for mornings and weekends.
- Explore strategies to increase off-peak usage.
- Refine pricing strategies during peak hours to maximize revenue.

**Bolt**