

Resources used:

- Tableau
- SQLITE (open-source online SQL interpreter)
- PyCharm

Relevant names assigned to CSV files:

- SheetA - Grill_Specifications
- SheetB - Customer_survey
- SheetC – Grill_Experiment_results

Fuel efficiency

Preferred grill type based on Fuel efficiency analyzed from data in Grill_Specifications. Comparison shown with Bar Chart in Tableau.

Market share

Grill type that has more market share analyzed from data in Grill_Specifications. Pie Chart in Tableau used as the representation of market share percentage.

Fuel cost for long run

To analyze the grill type that costs more fuel on a long run a line chart is used to represent how much each grill costs to operate for cookout in 16 weekends per year across 10-year span. Data to perform this analysis is obtained by using Excel Formula to get cumulative fuel cost across the years.

Total cost for 3 years

To analyze which grill costs more taking both Fuel cost and Initial investment into account Excel Formula was used to calculate the fields.

Calculations performed:

Charcoal grill

Initial investment along with fuel provided for first time taken separately. For Charcoal grill initial investment covered cook-out cost for first 10 usages and remaining 6 cookouts calculated and added with total cost for 1st year. For remaining 9 years cumulative cost calculated is calculated.

Propane grill

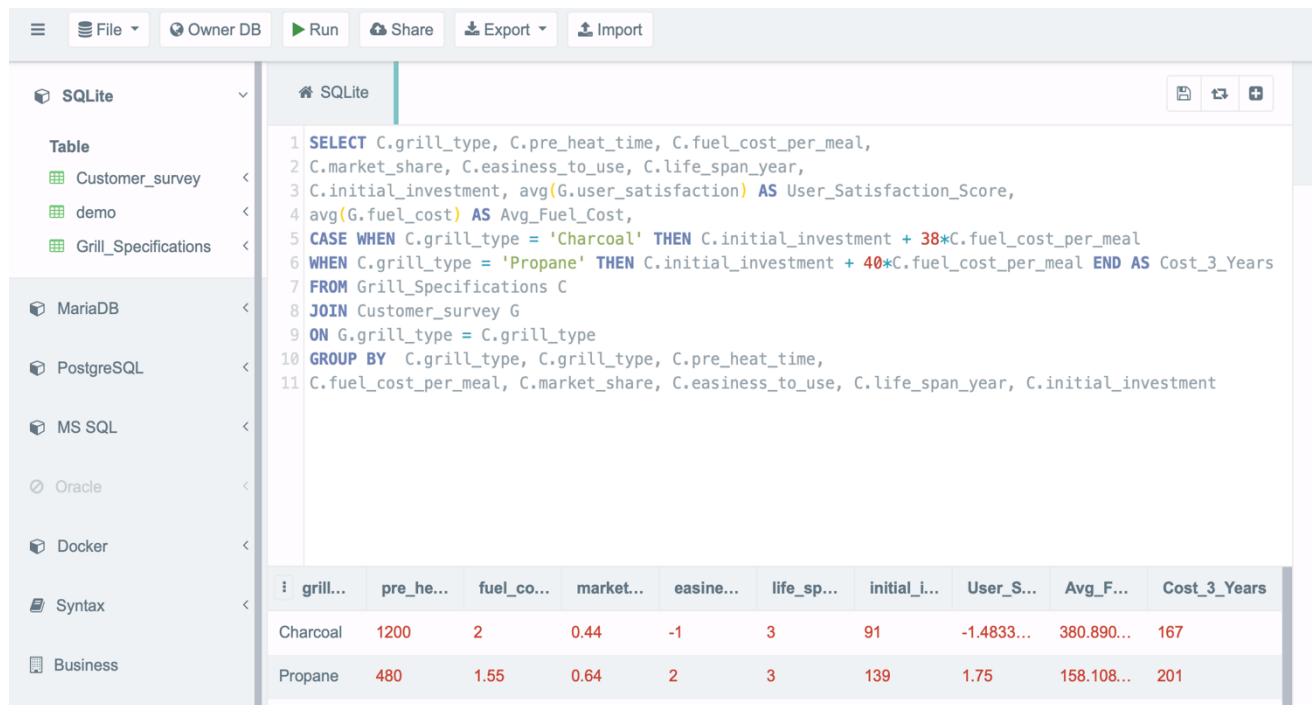
Initial investment along with fuel provided for first time taken separately. For Propane grill initial investment covered cook-out cost for first 8 usages and remaining 8 cookouts calculated and added with total cost for 1st year. For remaining 9 years cumulative cost calculated is calculated.

Line chart used in Excel to compare total costs for both grill types.

User satisfaction

Average User satisfaction score from Customer_survey data compared with Average Fuel cost, pre-heat time and Average Easiness fields from data provided in Grill_Specifications. Bar Chart used for comparing values across different food items for both grills.

Aggregated dataset



The screenshot shows a database management interface with a menu bar (File, Owner DB, Run, Share, Export, Import) and a sidebar with database connections (SQLite, MariaDB, PostgreSQL, MS SQL, Oracle, Docker, Syntax, Business). The main area displays an SQL query for SQLite, which selects various attributes from 'Grill_Specifications' and 'Customer_survey' tables, calculates a 'Cost_3_Years' based on grill type, and groups the results by grill type. Below the query, a table shows the aggregated results for Charcoal and Propane grills.

```
1 SELECT C.grill_type, C.pre_heat_time, C.fuel_cost_per_meal,
2 C.market_share, C.easiness_to_use, C.life_span_year,
3 C.initial_investment, avg(G.user_satisfaction) AS User_Satisfaction_Score,
4 avg(G.fuel_cost) AS Avg_Fuel_Cost,
5 CASE WHEN C.grill_type = 'Charcoal' THEN C.initial_investment + 38*C.fuel_cost_per_meal
6 WHEN C.grill_type = 'Propane' THEN C.initial_investment + 40*C.fuel_cost_per_meal END AS Cost_3_Years
7 FROM Grill_Specifications C
8 JOIN Customer_survey G
9 ON G.grill_type = C.grill_type
10 GROUP BY C.grill_type, C.pre_heat_time,
11 C.fuel_cost_per_meal, C.market_share, C.easiness_to_use, C.life_span_year, C.initial_investment
```

grill...	pre_he...	fuel_co...	market...	easine...	life_sp...	initial_i...	User_S...	Avg_F...	Cost_3_Years
Charcoal	1200	2	0.44	-1	3	91	-1.4833...	380.890...	167
Propane	480	1.55	0.64	2	3	139	1.75	158.108...	201

Recommendations to manufacturer

Recommendations made on previously analyzed factors. Also segment wise recommendations made using average thumbs up score for households which prefer to grill a specific item.

JSON to Pandas

Pandas and JSON library used to convert json file into CSV file. Json data is first loaded in a dictionary with fields as key and rows as value for each field. Stored into a dump file and then converted to CSV.