Tool Depot

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Supplier for Tool Depot

- Determine the most cost-effective supplier (A or B) to provide hammers for Tool Depot for the next year, considering product costs, shipping costs, and expected order growth.

Key Information

Hammer Orders:

- Expected to mirror wrench orders.
- Orders projected to grow 10% annually.

Shipping Details:

- Cheapest carrier (X or Y) is selected per week for each supplier's origin-destination pair.
- Maximum shipment capacity: 44,000 lbs per load.

Hammer Cost:

- Supplier A: $0.80/unit.
- Supplier B: $0.82/unit.

Hammer Production Cost Formula

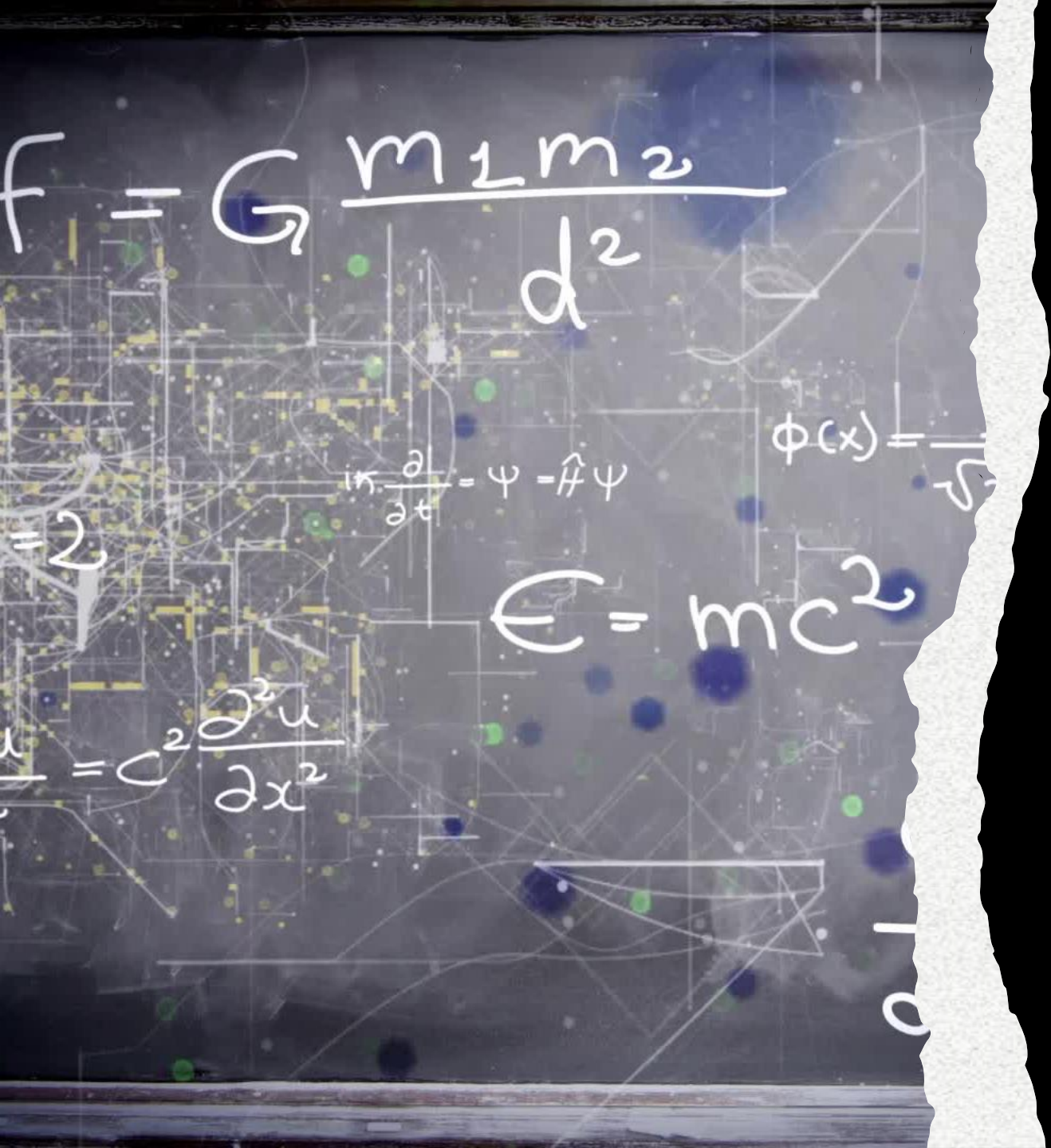
= (((Wrenches_Total_Order_Quantity *.10) + Wrenches_Total_Order_Quantity) * (Supplier_hammer_cost))

Carrier X Formula

= (((((Order_Quantity_Total * .10) +Order_Quantity_Total)*Product_Information_Weight)/ Max_Pounds_Per_Shipment)*Carrier.Cost)

Carrier Y Formula

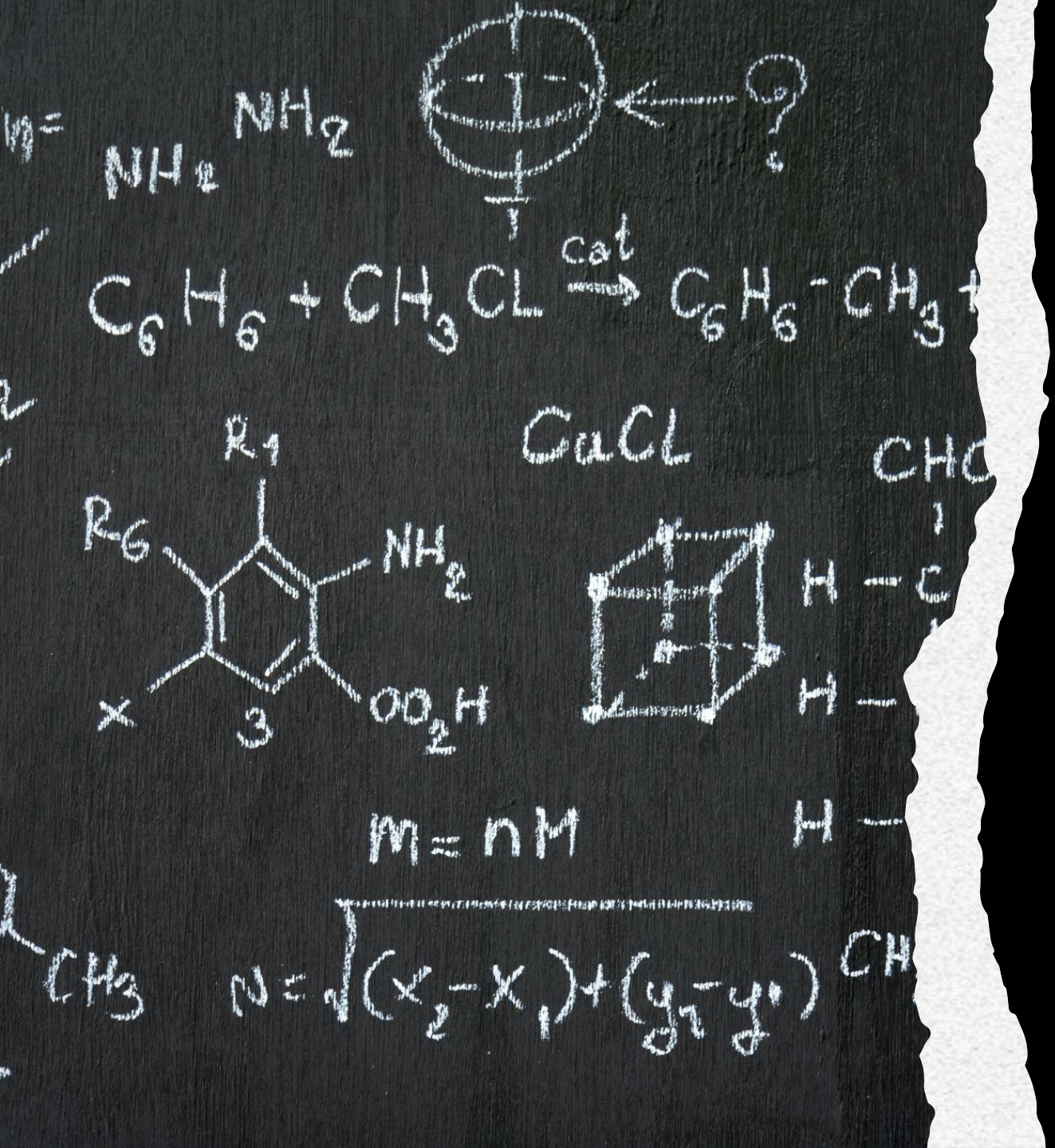
= ((((Order_Quantity_Total * .10) +Order_Quantity_Total)*Product_Information_Weight)*Carrier.Cost)



Transportation Cost Formula

=min(Carrier_X_Formula or Carrier_Y_Formula) + n for everyshipment

Where n is min(Carrier_X_Formula or Carrier_Y_Formula)



Total Cost Formula

==((Hammer Production Cost Formula) + (Hammer_Transportation Cost Formula))

Excel

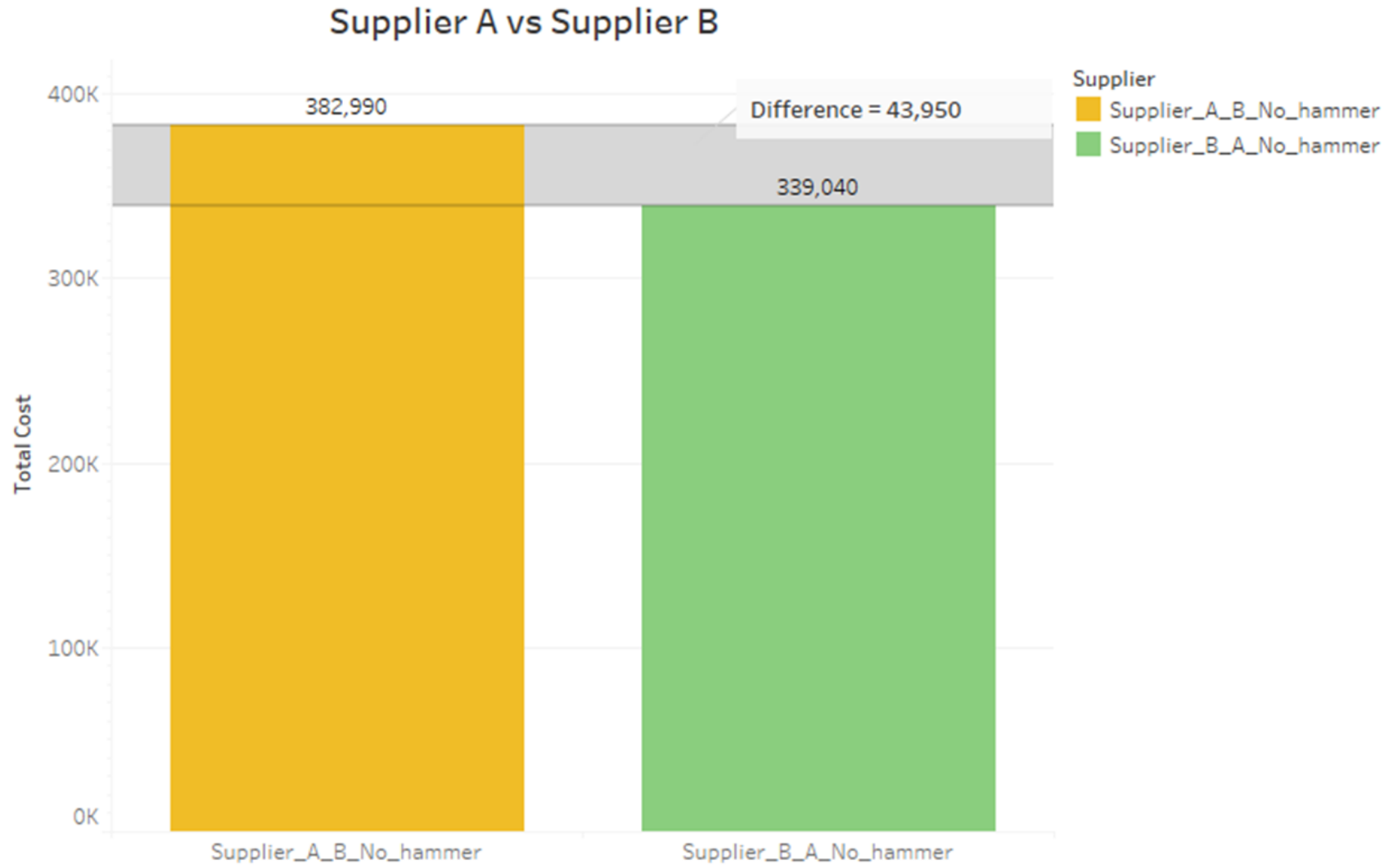
Data Cleaning Steps:

- Removed spaces from header names for compatibility with SQLite.
- Reformatted dates from DD/MM/YYYY to YYYY-MM-DD.
- Exported the cleaned dataset to a CSV file for SQL-based analysis.

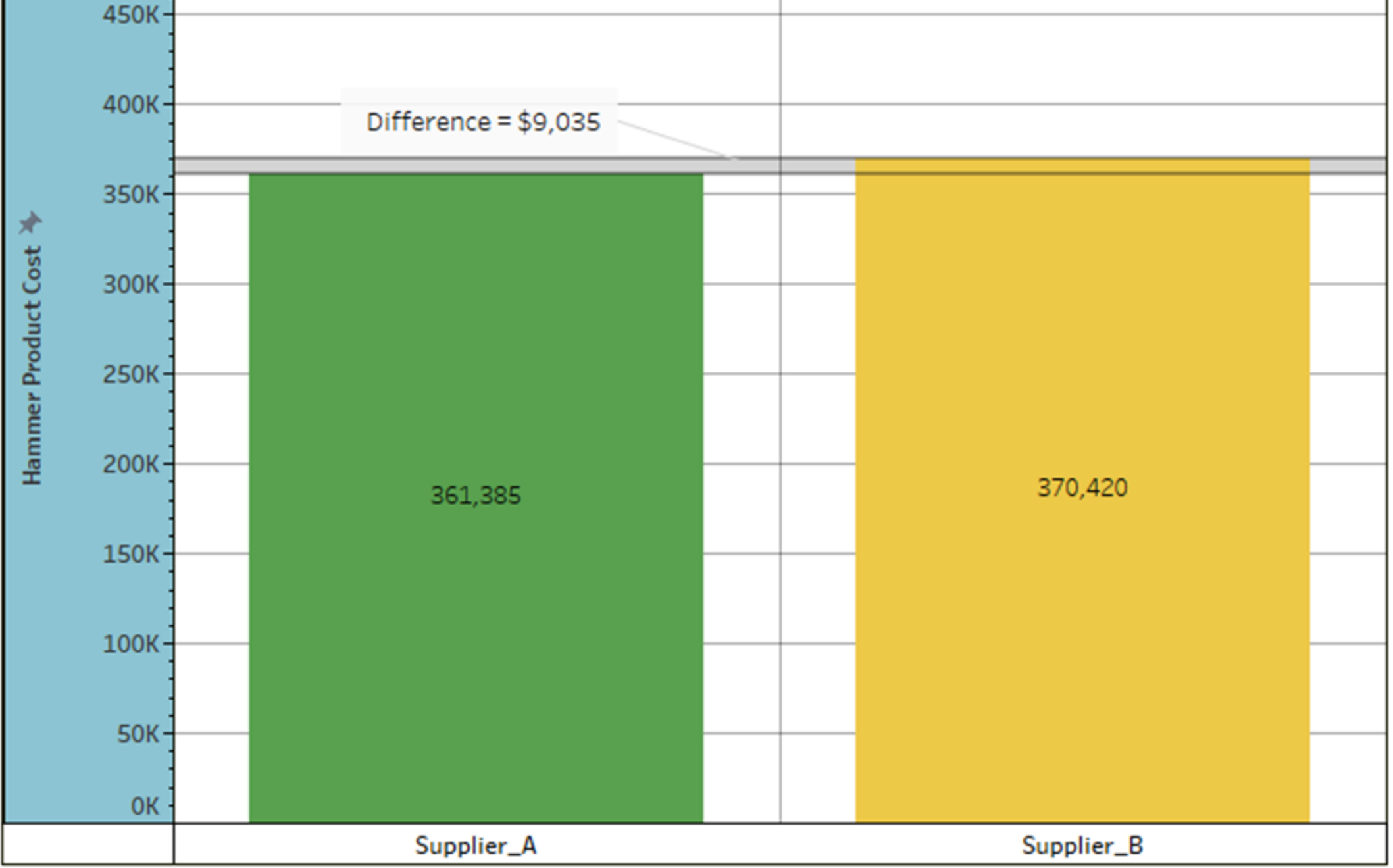
SQLite

Database Creation:

- Created ten new tables to store key data.
- Linked key relationships in the data.
- Wrote queries that Implemented the formulas from earlier slides to calculate total costs and shipping metrics.
- Exported the processed data into a JSON file.
- Imported the JSON file into Tableau for advanced visualization and analysis.



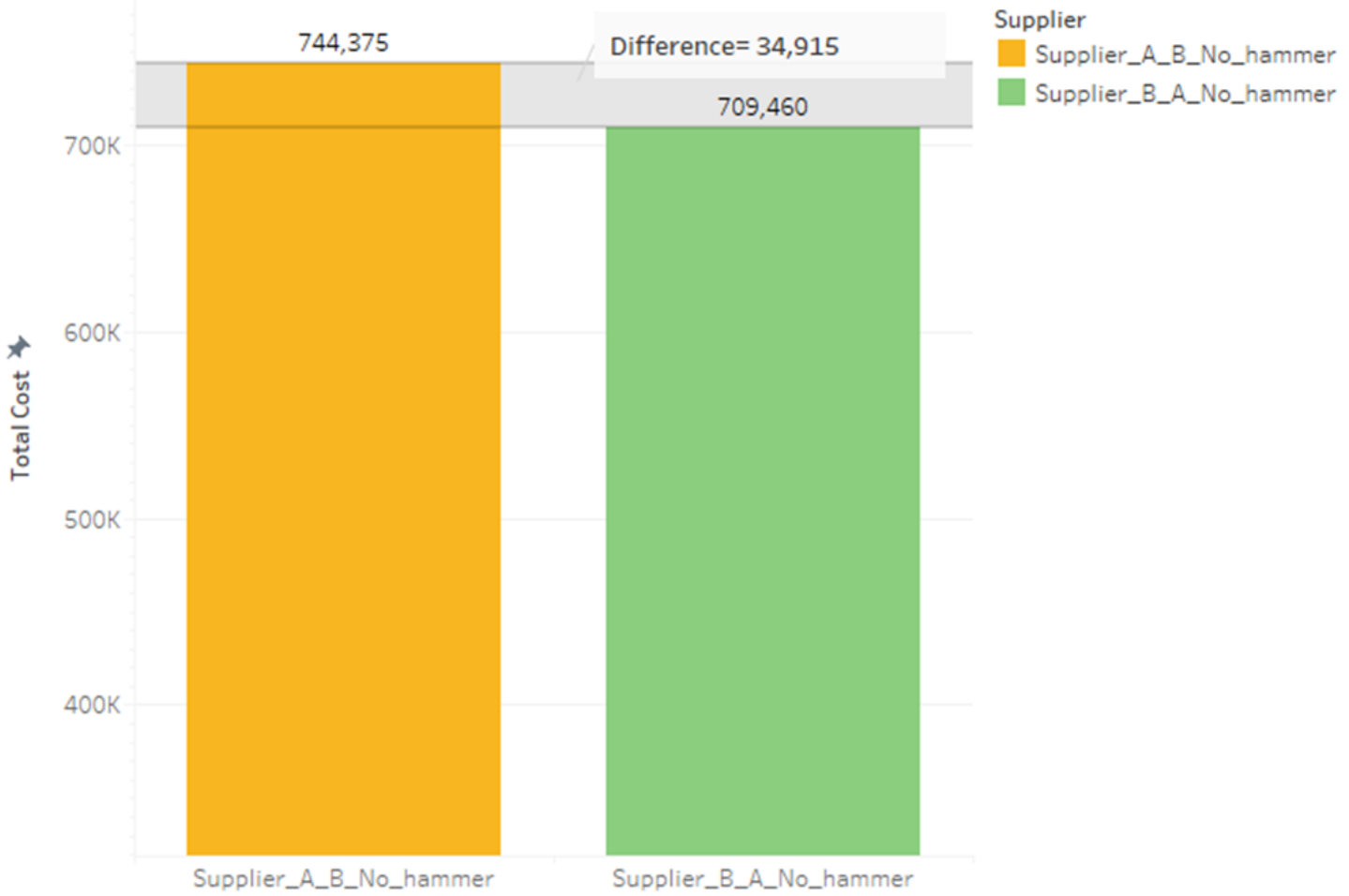
Sum of Total Cost for each Supplier. Color shows details about Supplier. The view is filtered on Supplier, which keeps Supplier_A_B_No_hammer and Supplier_B_A_No_hammer.



Sum of Hammer Product Cost for each Supplier Name. Color shows details about Supplier Name. The view is filtered on

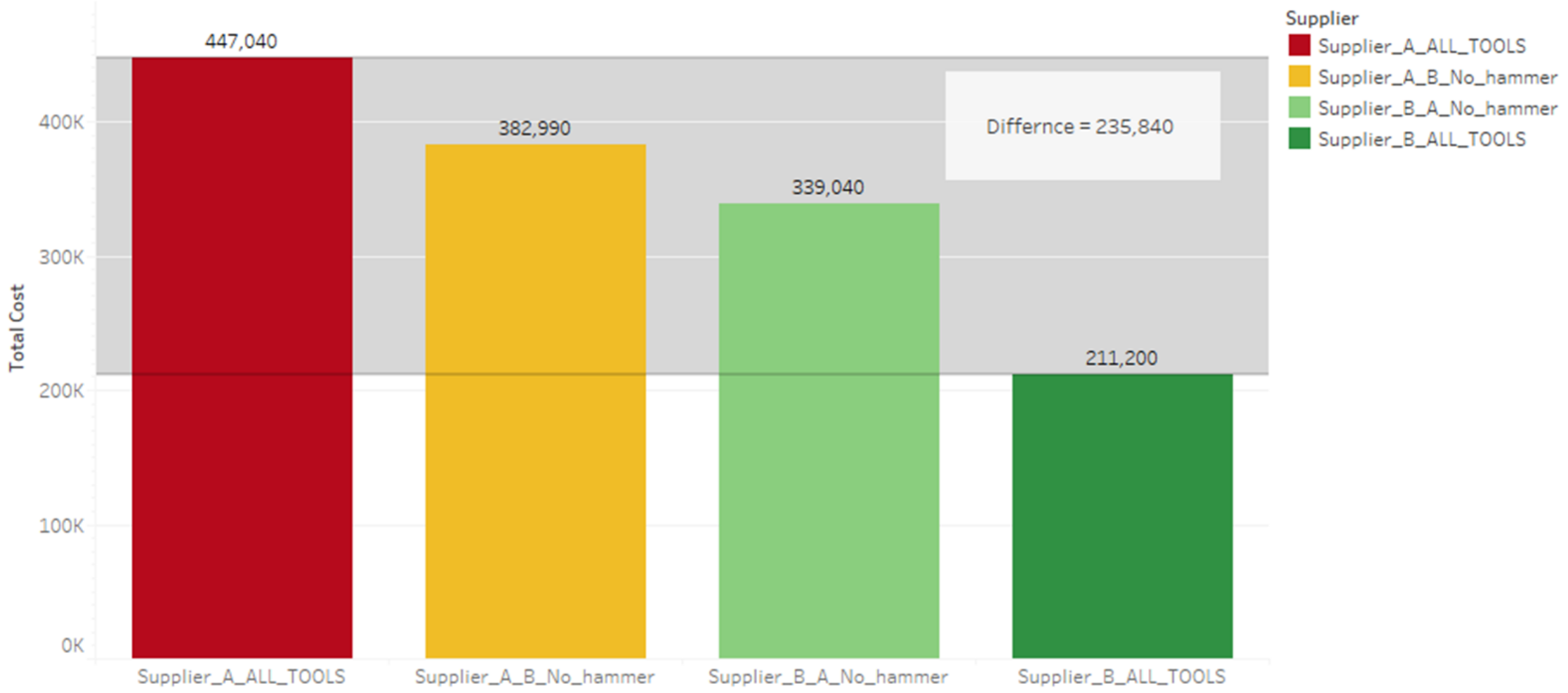
	Product_Id	Product_Description	Package_Quantity	Weight	Weight_Unit_of_Measure	Total_Quanity_By_Next_Year	Supplier_ID
	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	1	Wrench	1	2.2	LB	451731.5	A
2	2	Saw	1	1.2	LB	664912.6	A
3	3	Drill	1	8.3	LB	269122.7	B
4	4	Hammer	1	2	LB	451731.5	A

Supplier A vs Supplier B



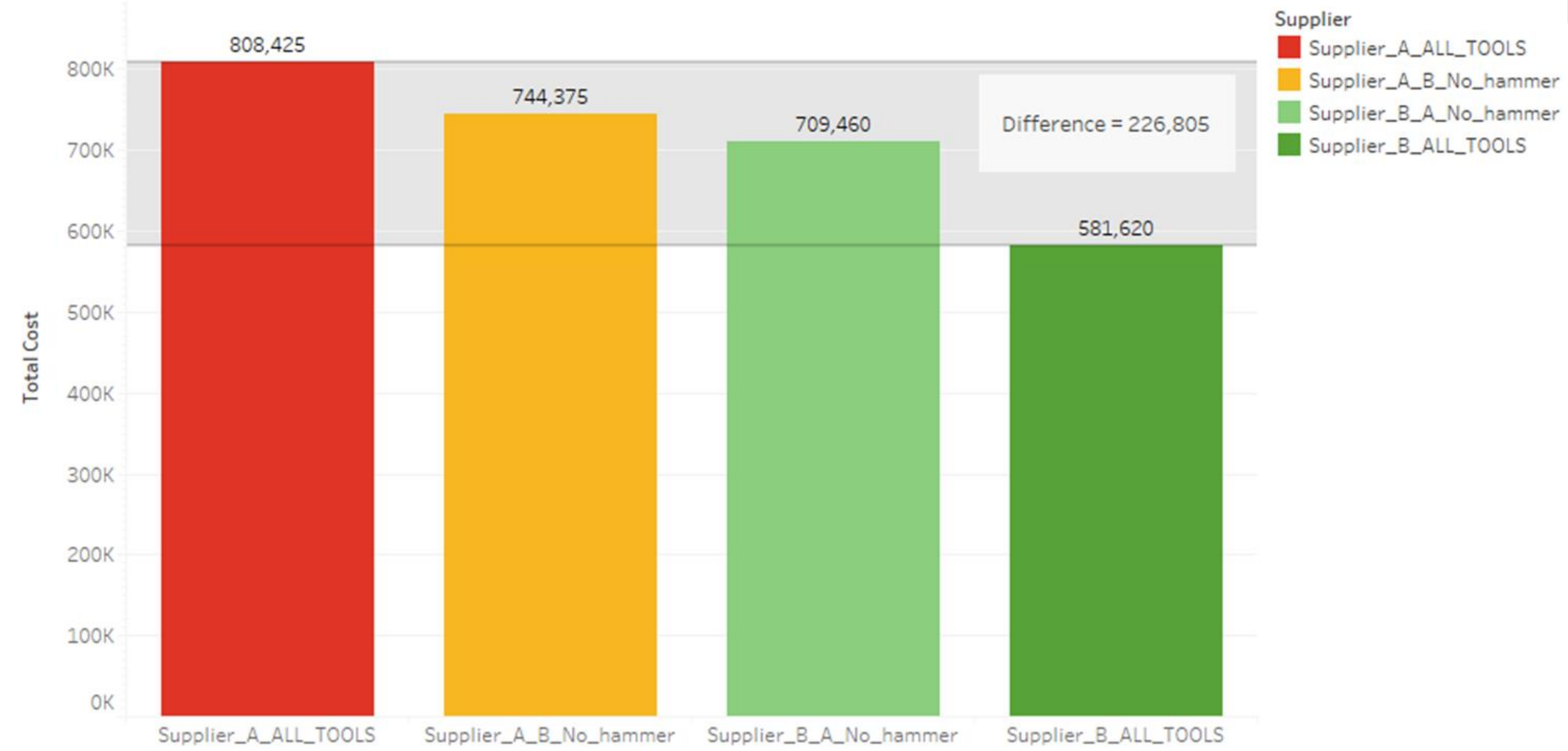
Sum of Total Cost for each Supplier. Color shows details about Supplier. The view is filtered on Supplier, which keeps Supplier_A_B_No_hammer and Supplier_B_A_No_hammer.

Supplier A vs Supplier B



Sum of Total Cost for each Supplier. Color shows details about Supplier.

Supplier A vs Supplier B



Sum of Total Cost for each Supplier. Color shows details about Supplier.

Excel Answers

	Hammer_Cost_Per_Unit	Hammer_Product_Cost	Transportation_Cost	Total_Cost
Supplier_A	$ 0.80	$ 361,385	$ 382,990	$ 744,375
Supplier_B	$ 0.82	$ 370,420	$ 339,040	$ 709,460
Difference	$ 0.02	$ 9,035	$ 43,950	$ 34,915

Results

- Supplier A offers a lower hammer unit cost, Supplier B is the better choice overall due to significantly lower transportation costs, resulting in a total cost savings of $34,915. This makes Supplier B more cost-effective.

Key Insights

- Currently, the costs for wrenches, saws, and drills remain unknown. This uncertainty could impact the data and could potentially make Supplier A more favorable option in the future. However, based on the current information, I strongly recommend prioritizing Supplier B, given the limited number of tools we are selling at this time.