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ECE 101-02 MATLAB and C Programming

Mr. Watchorn

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Executive Summary

I have created a cost analysis program for our store’s books. It can calculate the total cost, revenue, profit, and profit margin for each of our items. It will then conveniently sort this data into tables, total it up, and display it to you. The script is attached to this email as SalesData.mlx.

Discussion

Once the cost, price, and units sold for each item has been imported into the script, it will calculate several helpful figures and display them to the user. First, the total cost for each item is determined by an element-by-element multiplication between the array of unit costs and the array of units sold. Then, the total cost for the month is determined by taking the dot product of the previously mentioned arrays. Finally, a table of all the costs is displayed alongside the total cost and the item with the highest costs. A very similar process is done for both the revenue and profit metrics for the month.

There were two notable hangups in this project’s development. First, I attempted to store data in a dictionary, mapping information like cost into key-value pairs with the item’s name being the key. However, it became quickly apparent that MATLAB’s dictionary class leaves some functionality to be desired. For example, you cannot natively retrieve the key(s) associated with a given value. For the second setback, I struggled to get the tables to display data correctly at first. MATLAB does not name table columns correctly if you perform an operation (such as a transposition) on an array as you feed it to the table. As a result, I had to manually edit the tables’ properties. (see line 49)

Outcomes

The desired metrics are all calculated correctly and displayed accurately. This project required 2 hours, 12 minutes, and 47 seconds of development time.

Conclusions

Overall, I think this script will be able to help you summarize some key aspects of our finances at a glance.

Hope this can help,

Dylan