Bibitor LLC Inventory and Sales Analysis

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Introduction

- This is a case study developed by PricewaterhouseCoopers (https://www.pwc.com/us/en/careers/university-relations/data-and-analytics-case-studies-files.html).

- Bibitor LLC is a fictitious company that sells liquors in its 80 stores.

- A dataset of all transactions of the company in 2016 is provided.

- The goal is to use analytic tools to generate insights into the data and to leverage these insights to make business decisions.

Dataset and Processing

- The entire dataset consists of 6 files for inventories at the beginning and end of 2016, purchases, invoices, and sales of 2016 of all 80 stores of the company.

- Imported all 6 files into R.

- Inspections of the data files indicated that no cleaning was needed.

- All subsequent analyses were performed in R. R was chosen over Tableau because of its superior processing speed and versatility.

Inventory

- The company carried about 10,000 products.

- Analysis of inventories at the beginning and end of the year and purchases and sales indicates the entire inventory was fully accounted for.
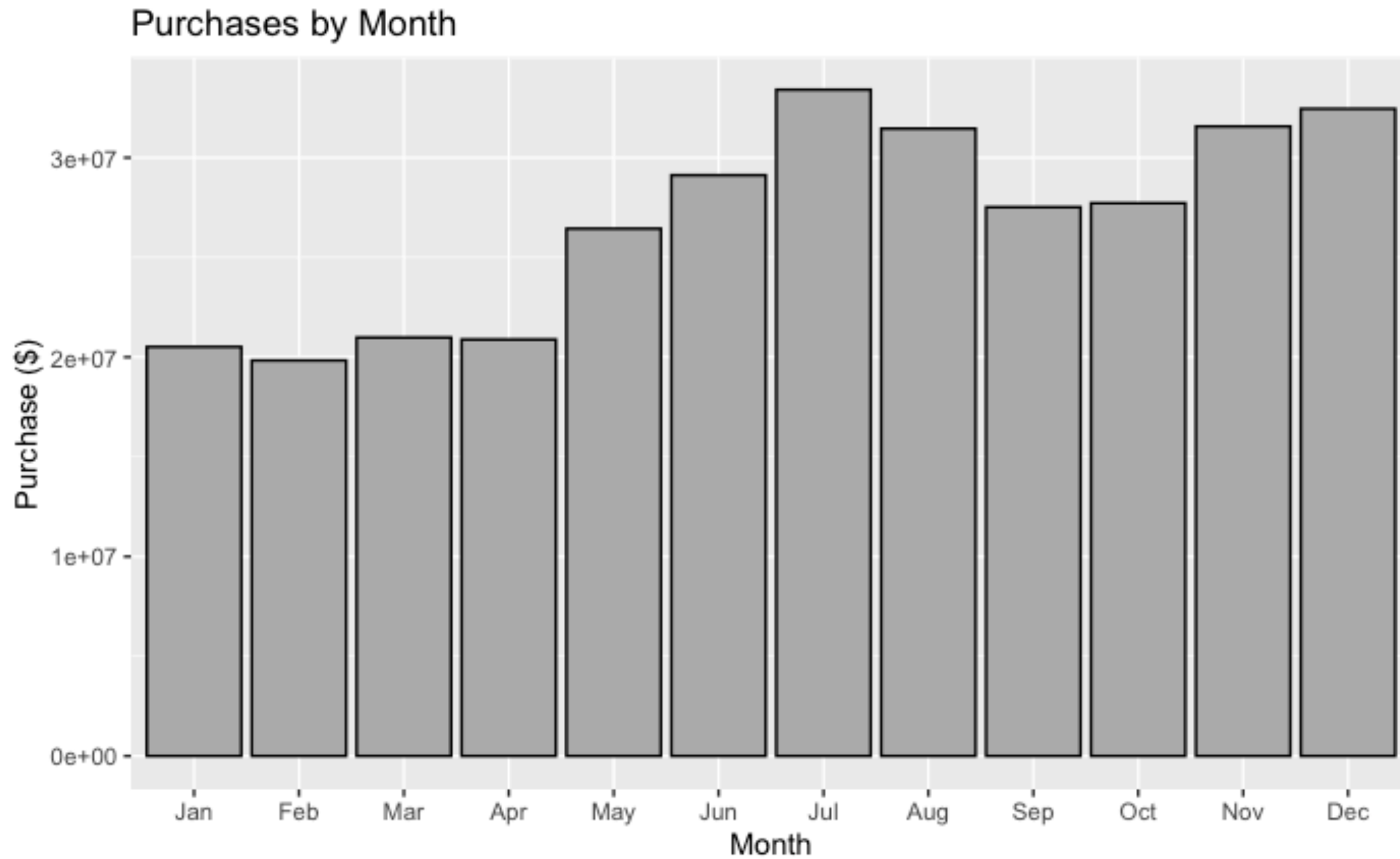
Total Sales and Gross Profit

- The total sales was $452 million.

- The total gross profit was $140 million.
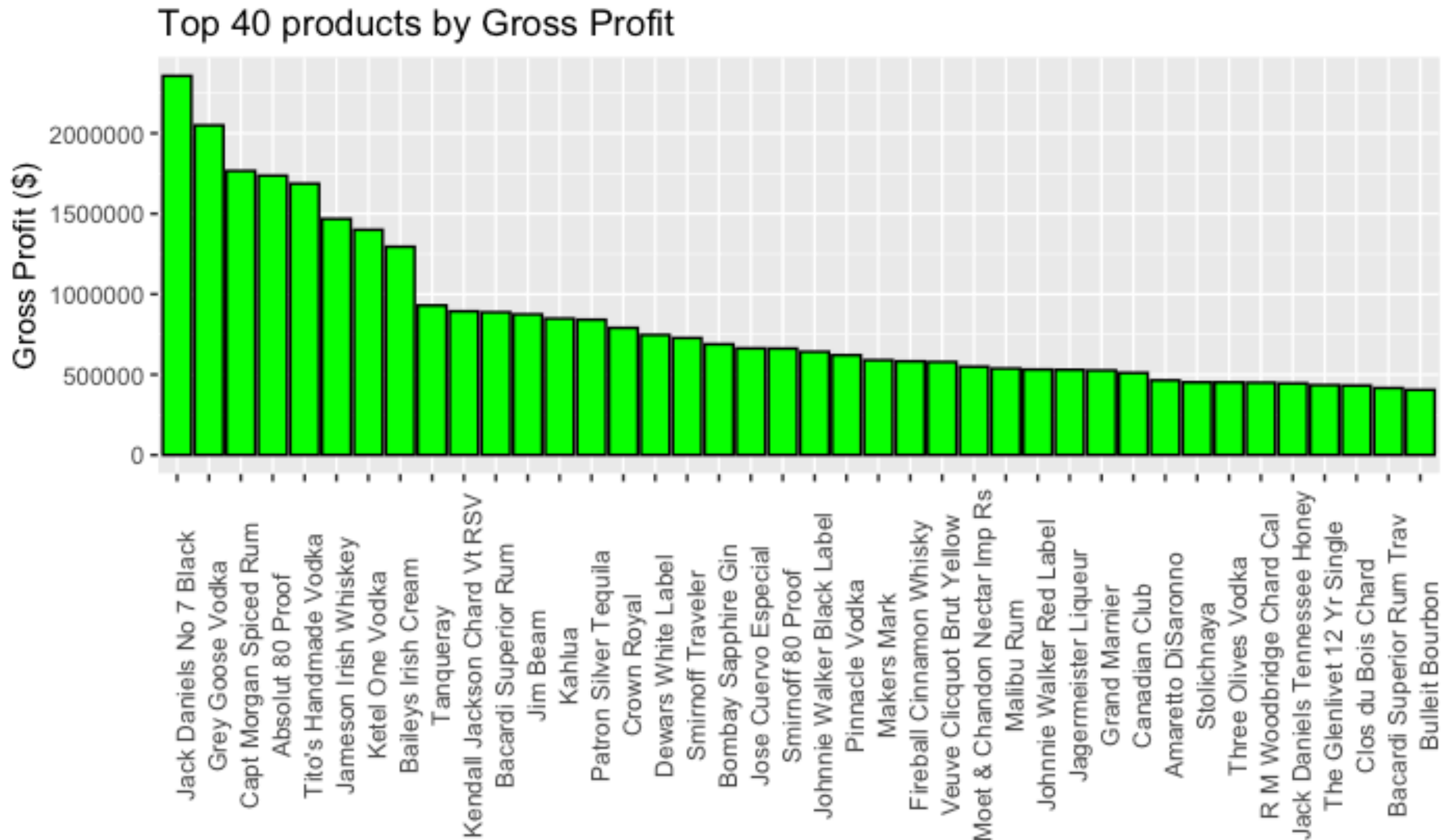
- The overall gross profit margin was 31%.

July and December had the highest sales
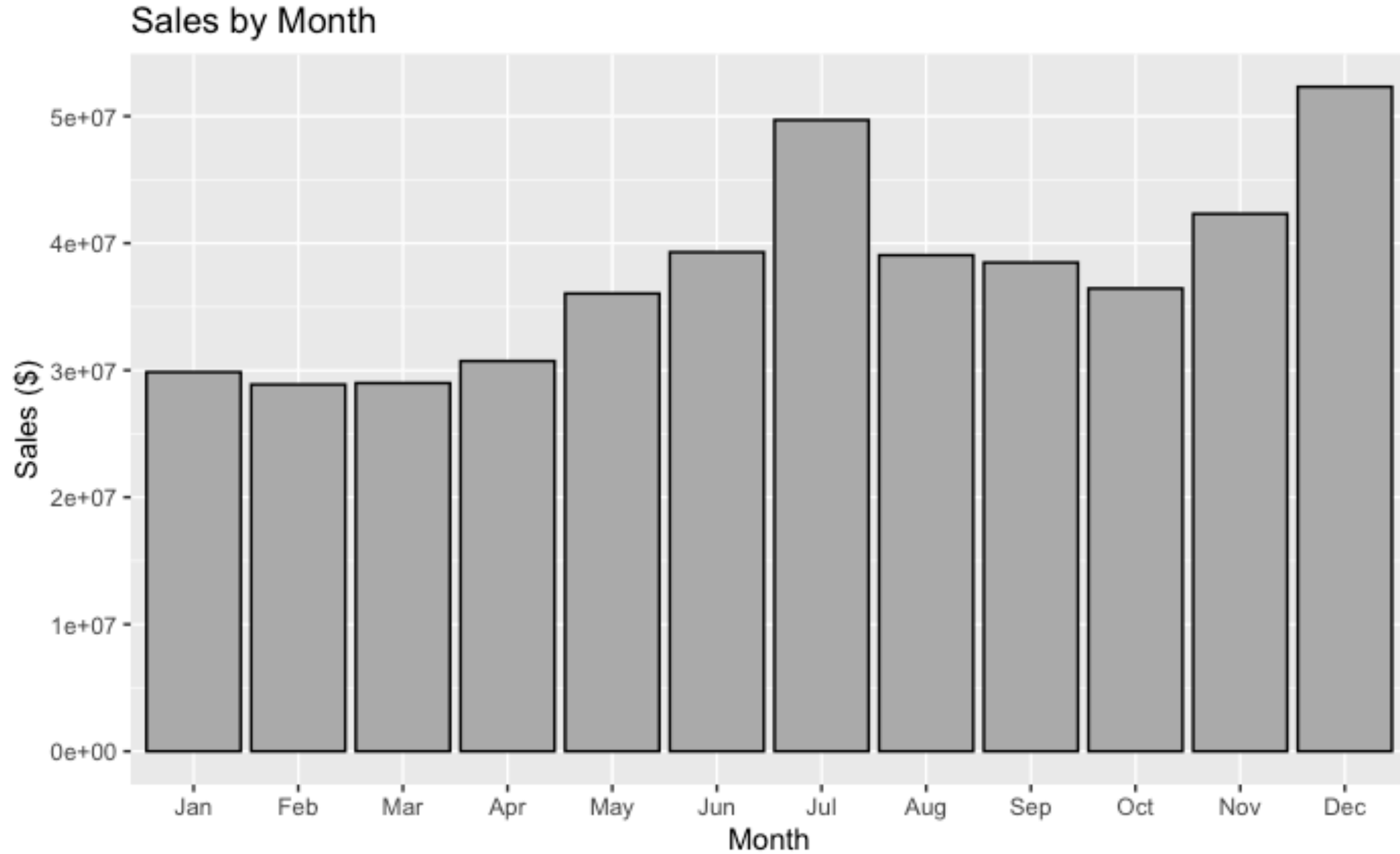
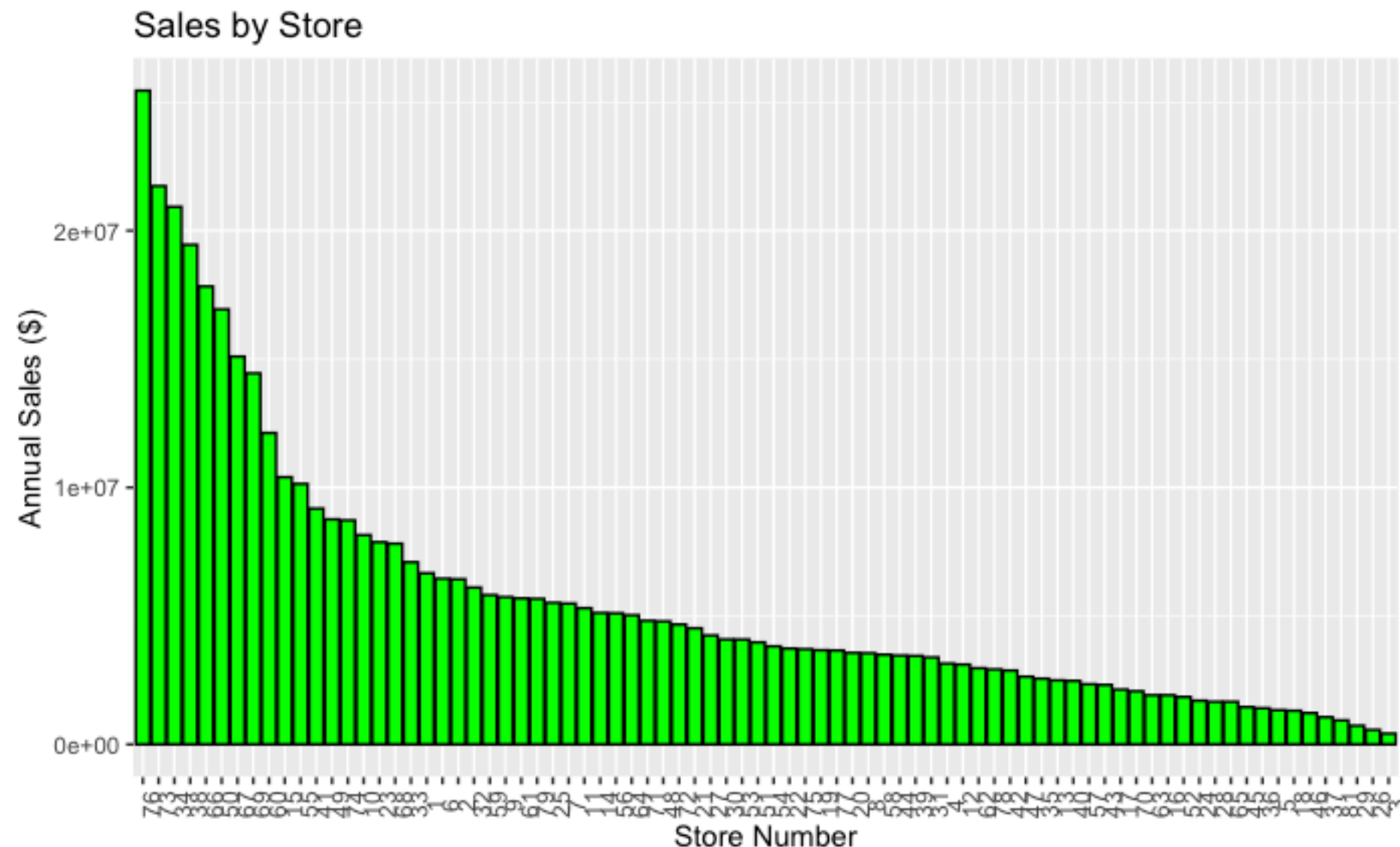# Purchases were synchronized with sales

Top 40 products generated 24% of total gross profits

Top 40 products by Gross Profit

The top 4,000 products generated 97% of total gross profit.

Performance of individual stores showed large differences

Sales by Store

- ◆ **The top 20 stores generated 56% of total sales.**
- ◆ **The bottom 20 stores generated 7% of total sales.**
- ◆ **There was no difference in gross profit margin between the top and bottom 20 stores.**

Overall Assessment and Recommendations

- Bibitor LLC generated good cash flows and healthy gross profit margins in 2016.

- The inventories were well managed; purchases were synchronized with sales.

- A large number of products did not sell well; reducing the number of products by 50% will have little effect on profit but may significantly cut cost.

- There were large differences in performance between stores. Improving the performance of the bottom 20 stores will significantly boost the overall profit of the company.