

Store Sales and Profit Analysis using Python

Background Information

Store sales and profit analysis is the task of analysing the performance of a retail store in terms of its sales and profits. It helps businesses identify areas for improvement and make data-driven decisions to optimize their operations, pricing, marketing, and inventory management strategies to drive revenue and growth. So in this project we will learn how to analyse the sales and profit of a store, using Python.

Skills Covered

Data Extraction

Data Manipulation and Visualization

Result Communication

Problem Solving

Python Programming

Data Description

You are provided with the store data in a csv file format containing the sales data. This sales data is made up of order and customer details, product, quantity and the respective sales. You will have to wrangle this data before you communicate your results by performing some computations where needed.

Aim

To analyse the performance of the retail store in terms of its sales and profit.

To check which months did the store perform better.

Which products seem to significantly contribute to more sales and profit for the store, and with that knowledge what are the recommendations.

What can be done to the store to improve its sales and profit?

Instructions:

- Import all the necessary libraries for your project
- Have a glimpse look at your data

- Look at the summary statistics about the sales data
- Since we would like to analyse sales based on some time periods, it would be nice to wrangle the date column
 - I. Convert the Order date and Ship date columns to datetime objects
 - II. Add month, year and day of the week as the new columns of the dataframe
- Visualise monthly sales using a line plot and make some deductions
- Now analyse sales by category and use a pie plot
- Draw a bar plot to visualize sales by sub-category and determine which products contribute significantly to sales in the organisation
- We have looked into Sales, now let's look into Profit.
 - I. Analyse monthly profits using a line plot
 - II. Attach markers to your line plot
 - III. Which months did the company achieved good profit
 - IV. If you were a potential investor, in which period would it be a good period to invest in the company i.e. 0-6 months or 7-12 months? Please justify your answer.
- Analyse profits by category and sub-category
 - I. Use a pie plot to view profit by category
 - II. Now use a bar graph to show which products (sub-category) make the most profit
 - III. Based on the visual plot above, would you recommend the company to keep selling some of the products?
 - IV. Now look back, do the same products that contribute significantly to sales do the same when it comes to profit. Also visualize this, use a variable grouping bar plot!
- Conclusions and Any Recommendations



**“Let’s shrink Big Data into Small Data ...
and hope it magically becomes Great Data.”**