

Homework Assignment: Data Analysis

Using Python

BACKGROUND

You are working as a data analyst for a company that sells electronics online. The company has provided you with a dataset containing information on the sales of various products over the past year. Your task is to analyze the data and provide insights that can help the company improve its sales.

DATASET

The dataset you will be using can be downloaded from [here](#). The dataset contains the following columns:

- Order ID: A unique identifier for each order.
- Product: The name of the product that was sold.
- Quantity Ordered: The number of units of the product that were sold.
- Price Each: The price of each unit of the product.
- Order Date: The date and time when the order was placed.
- Purchase Address: The address where the product was shipped.

TASKS

Your task is to perform data analysis on the dataset and provide insights that can help the company improve its sales. Specifically, you need to complete the following tasks:

1. Load the dataset into a Pandas DataFrame and perform any necessary data cleaning, such as handling missing values and converting data types.
2. Compute the following metrics for each product:

- Total revenue generated.
- Total units sold.
- Average price per unit.
- Total number of orders.

Rank the products based on these metrics and provide recommendations on which products the company should focus on selling more.

3. Compute the following metrics for each month:

- Total revenue generated.
- Total units sold.
- Average price per unit.

Plot these metrics over time and identify any trends or patterns that can help the company improve its sales.

4. Identify the top 5 cities where the company has the highest sales and provide recommendations on how the company can increase its sales in other cities.

DELIVERABLES

Your submission should include the following:

1. A Jupyter Notebook containing your code for data cleaning and analysis.
2. A report summarizing your findings, including any insights and recommendations that can help the company improve its sales.