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Uncovering Customer Insights: A Comprehensive EDA with Pandas and Plotly Express

Introduction

This project explores customer trends using the popular data analysis libraries Pandas and Plotly Express.

Tools Used

The following Python libraries were used in this project:

- Pandas
- Numpy
- Missingno
- Matplotlib
- Seaborn
- Plotly Express

The Pandas operations performed include:

- Getting the number of rows and columns in the dataframe
- Getting the first and last 5 rows of the dataframe
- Getting information about the dataframe, including the number of non-null values and memory usage for each column
- Getting summary statistics of the dataframe, including count, mean, standard deviation, minimum, and maximum values
- Getting the data type of each column in the dataframe
- Counting the number of missing values in each column

Plotly Express is used to visualize the data in different forms such as bar graphs, histograms, violin plots, scatter plots, and more. These visualizations provide insights into customer spending habits, relationships between variables, and more. The following relationships are explored:

- Average spend by marital status
- Total spending distribution by marital status, education level and age
- Age vs. income distribution
- Education level vs. average spend

These are just examples. The notebook contains much more

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Summary

The project provided insights into customer trends through in-depth exploratory data analysis using Python tools, including Pandas and Plotly Express. The visualizations created in this project can be used to understand the spending habits of customers based on their marital status, education level, and parenthood status. The relationships between variables such as income, web visits, purchases, and spending were also explored.