DECODING
DATA SCIENCE

Module: Data Visualization with Seaborn

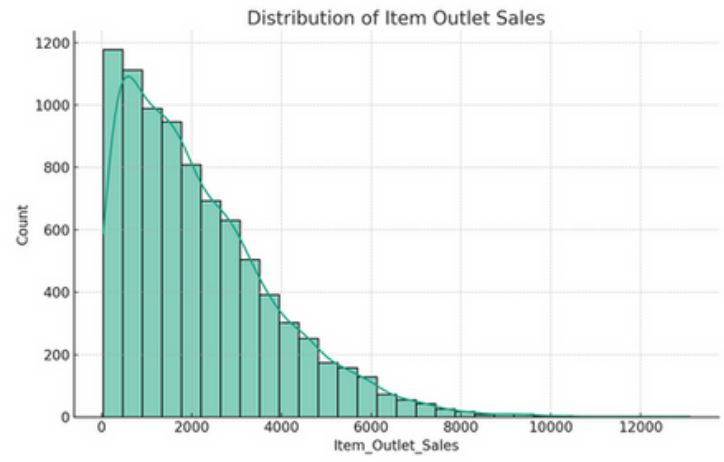
Introduction to Seaborn, its various functionalities, and sample graphs using the provided dataset.

2. Distribution Plots

Description:
Distribution plots are used to visualize the distribution of a dataset. Common distribution plots in Seaborn include the histogram, KDE (Kernel Density Estimation), and the rug plot.

Code Snippet:

```
# Create a simple distribution plot
data = sns.load_dataset('tips')
sns.histplot(data['total_bill'])
plt.show()
```



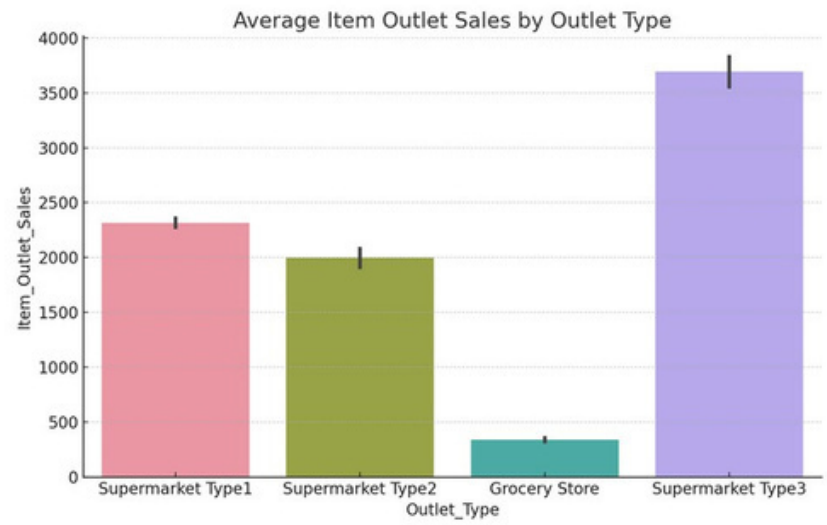
3. Categorical Plots

Description:

Categorical plots are used to visualize categorical data. Examples include bar plots, box plots, and violin plots.

Code Snippet:

```
# Create a simple bar plot
sns.barplot(x='day', y='total_bill', data=data)
plt.show()
```



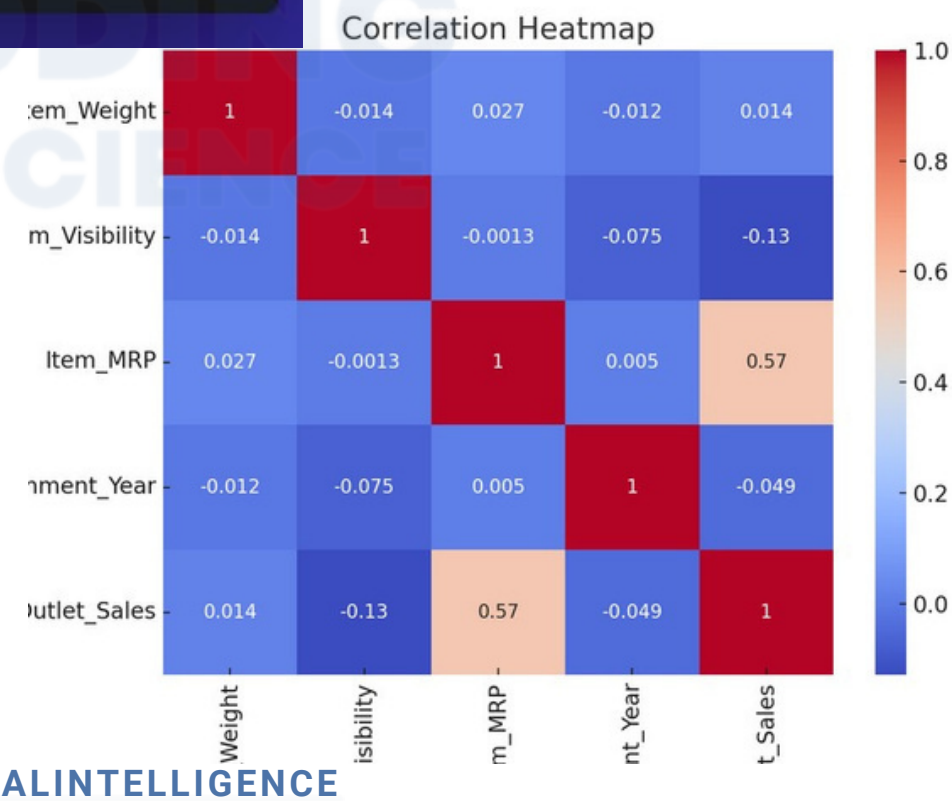
4. Matrix Plots

Description:

Matrix plots are used to display data in a matrix format. The heatmap is a common matrix plot used to represent data in a color-encoded matrix format.

Code Snippet:

```
# Create a heatmap of a correlation matrix
correlation = data.corr()
sns.heatmap(correlation, annot=True, cmap='coolwarm')
plt.show()
```



5. Pair Plots

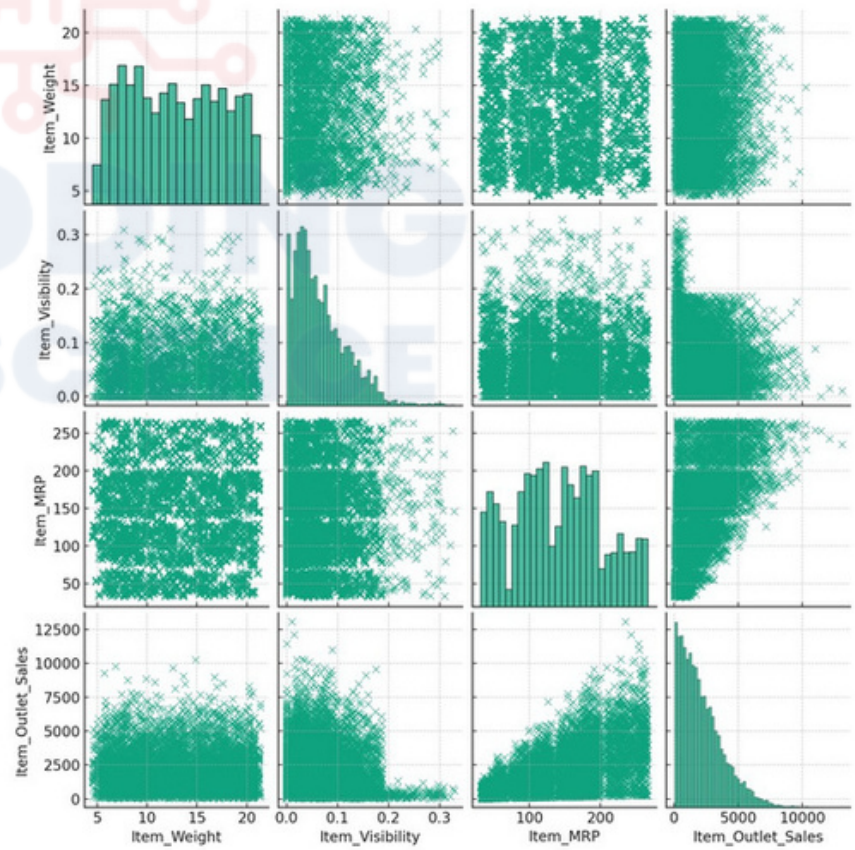
Description:

Pair plots are used to visualize relationships between multiple variables in a dataset.

It plots pairwise relationships in a dataset.

Code Snippet:

```
# Create a pair plot
sns.pairplot(data)
plt.show()
```



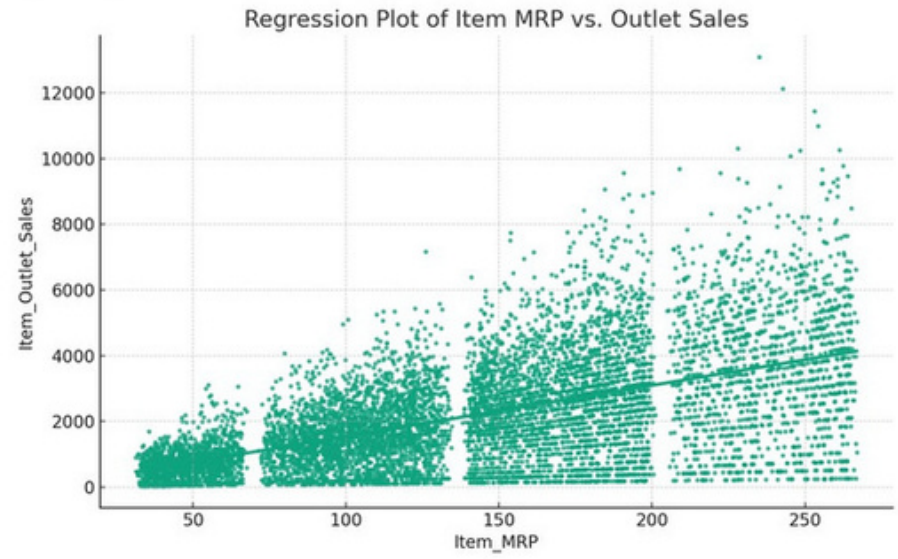
6. Regression Plots

Description:

Regression plots are used to visualize the relationship between two variables and fit a regression line.

Code Snippet:

```
# Create a regression plot
sns.regplot(x='total_bill', y='tip', data=data)
plt.show()
```



7. Styling and Themes

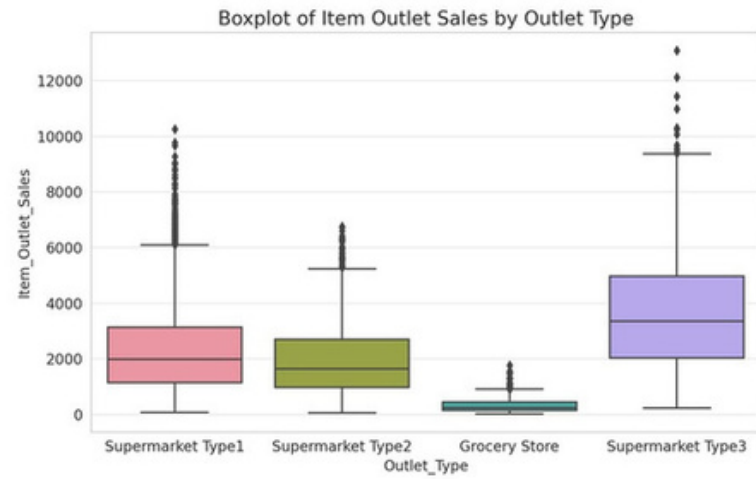
Description:

Seaborn allows for the customization of plots using various styles and themes.

This ensures that plots are both informative and aesthetically pleasing.

Code Snippet:

```
# Set a theme and create a plot
sns.set_style('whitegrid')
sns.barplot(x='day', y='total_bill', data=data)
plt.show()
```



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