DECODING
DATA SCIENCE

Module: Data Visualization with Seaborn

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

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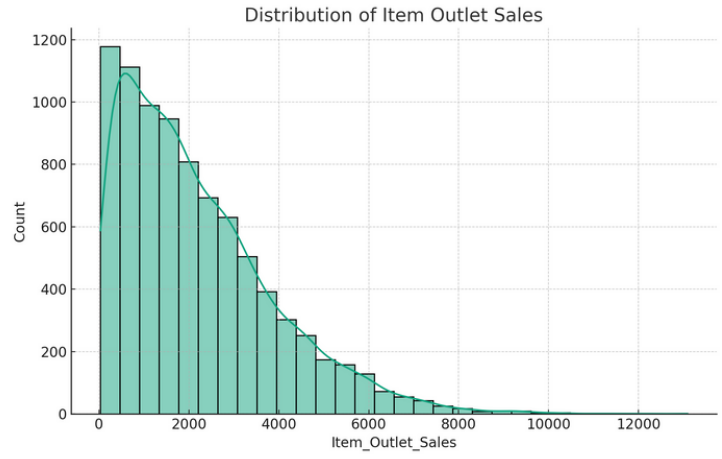
2. Distribution Plots

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()
```

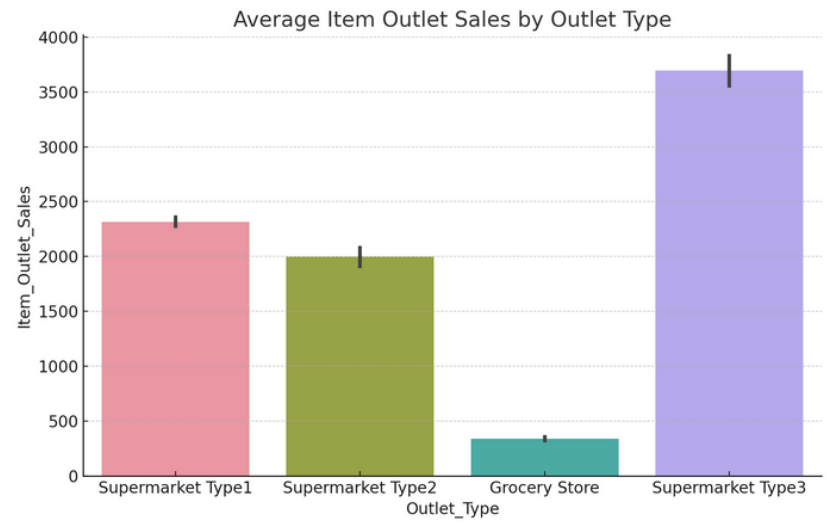


3. Categorical Plots

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()
```

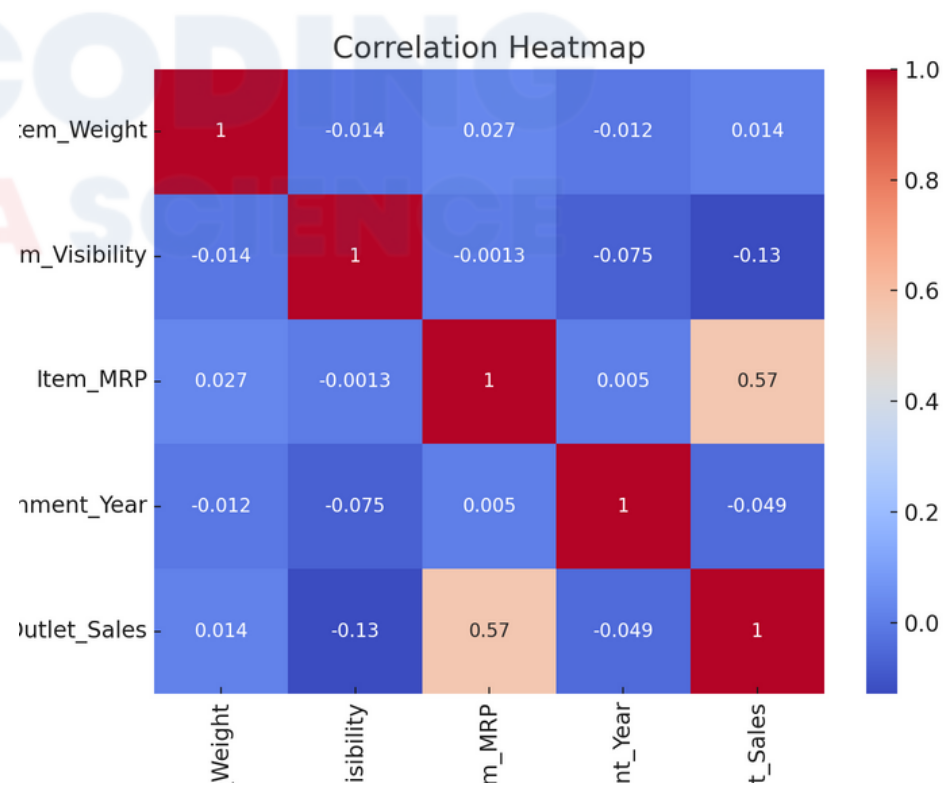


4. Matrix Plots

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()
```



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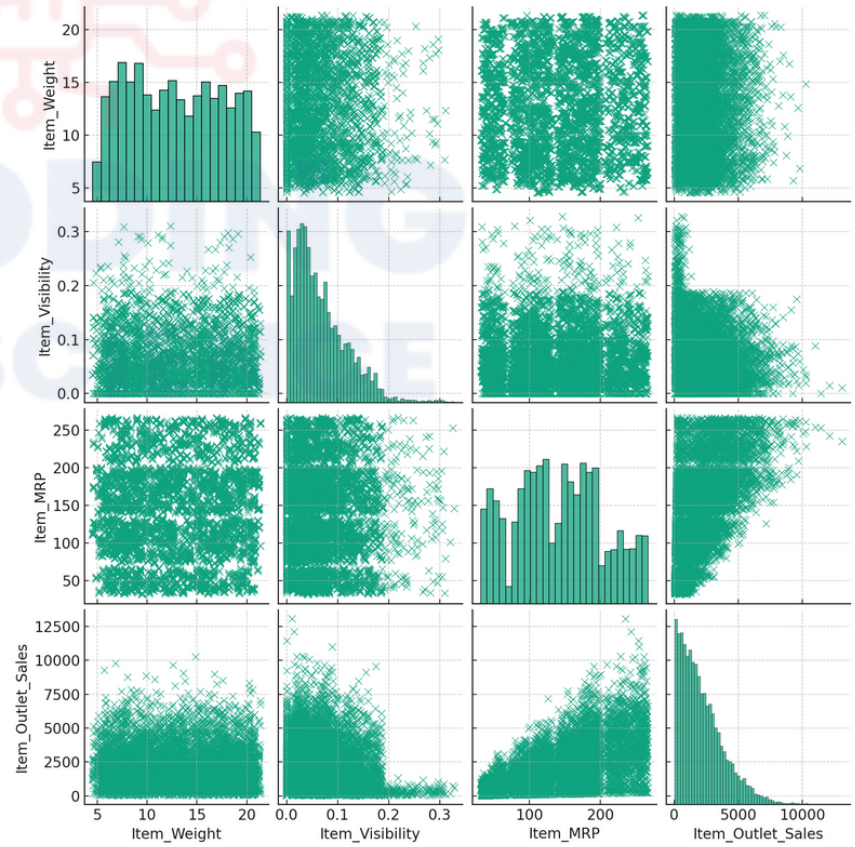
5. Pair Plots

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()
```

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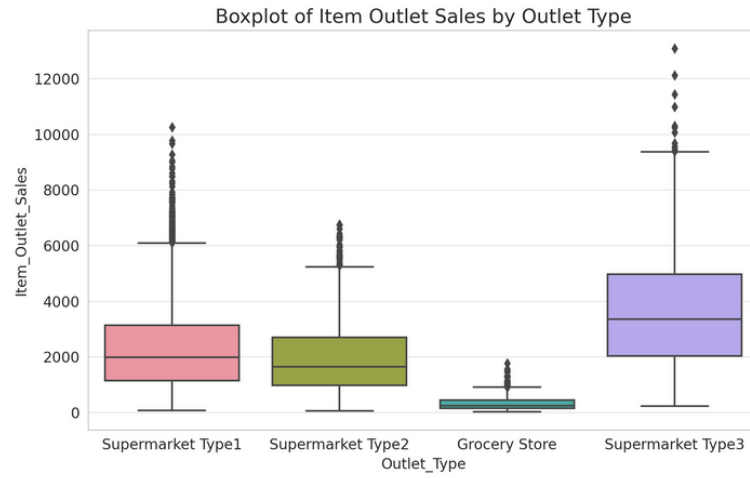
7. Styling and Themes

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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Next Steps

1. **Advanced Visualization Workshops:** Dive deeper into the intricacies of data visualization with hands-on workshops.

2. **Data Science Bootcamps:** A comprehensive, project-based learning experience to enhance your data science skills.

3. **AI Innovation Hub:** Collaborate with fellow learners and industry experts on cutting-edge AI projects.

4. **Community Webinars:** Regular webinars on the latest trends, tools, and best practices in AI and Data Science.

5. **Peer-to-Peer Learning:** Engage in discussion forums, group projects, and mentorship programs.

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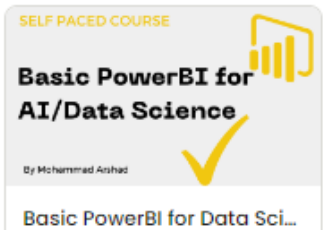

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Sep **9** Sat

18th AI Community Meetup

Saturday, 9 September

4:00PM - 5:00PM

Online

With Mohammad Arshad

I'm Going

Sep **10** Sun

Data Science/AI Career Talk

Sunday, 10 September

12:00PM - 1:00PM

Online

With Mohammad Arshad

I'm Going

Sep **12** Tues

Generative AI/AI Uses

Tuesday, 12 September

7:00PM - 8:00PM

Online

With Mohammad Arshad

I'm Going

Sep **16** Sat

19th AI Community Meetup

Saturday, 16 September

4:00PM - 5:00PM

Online

With Mohammad Arshad

I'm Going

Sep **17** Sun

Data Science/AI Career Talk

Sunday, 17 September

12:00PM - 1:00PM

Online

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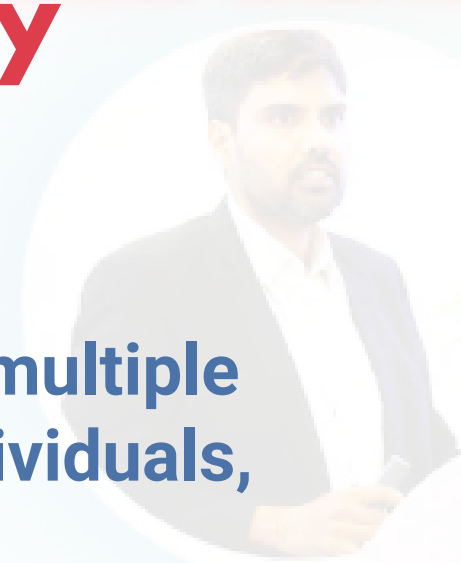
Join Our AI Community



Being part of an AI community like ours offers multiple benefits. You can network with like-minded individuals, learn from experienced professionals, and stay up-to-date with the latest AI trends and developments.

Whether you're a beginner looking to start your journey in AI, or an experienced professional looking to enhance your skills, our community has something to offer.

Join us and be a part of this exciting journey. Learn more, Grow more!

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