

AYTS5001 – Week 10 Lab Sheet

Seaborn & Advanced Visualisation (2 Hours, Not Graded)

Dataset: malazan_visualisation_big_dataset.csv

Introduction

In this lab, you will practice using Seaborn to create advanced visualisations using a larger Malazan-themed dataset of commanders, armies, and attributes.

Setup

```
import pandas as pd
```

```
import seaborn as sns
```

```
import matplotlib.pyplot as plt
```

```
sns.set_theme(style='whitegrid')
```

```
df = pd.read_csv('malazan_visualisation_big_dataset.csv')
```

```
df.head()
```

Task 1 — Scatterplot with hue & style

Plot Magic_Aptitude vs Combat_Skill, colour and style by Army. Answer:

- Which armies cluster in high-magic/low-combat?
- Any outliers?

Task 2 — KDE Distribution

Create a KDE plot of Morale and a FacetGrid KDE per Army.

Questions:

- Most consistent morale? • Lowest morale?

Task 3 — Boxplots & Violin Plots

Boxplot: Combat_Skill by Army

Violin: Magic_Aptitude by Army

Questions:

- Strongest fighters? • Widest magic spread?

Task 4 — Correlation Heatmap

Compute correlations of numeric stats and plot with `sns.heatmap()`.

Identify strongest positive and negative relationships.

Task 5 — Pairplot

Use `sns.pairplot(df, hue='Army')` to inspect clusters and outliers.

Task 6 — Army Attribute Means

Compute mean `Power_Level`, `Magic_Aptitude`, `Combat_Skill` per army using `sns.barplot`.

Task 7 — FacetGrid Histogram

Facet histograms of `Combat_Skill` per Army with `sns.FacetGrid`.

Task 8 — Palette Experiment

Recreate scatter plot with a different palette. Comment on readability.

Extension (Optional)

Create a 4-plot dashboard (scatter, heatmap, violin, bar/hist) and tell a story.