Swarm Plot

Graph assignment
By
MuthuKumaranM

Why Swarm Plot is Important in Seaborn (Easy Explanation)
A Swarm Plot in Seaborn is used to visualize the distribution of data points while avoiding overlap. It is very useful in exploratory data analysis (EDA)
What is a Swarm Plot?
A swarm plot displays all individual data points for a variable, spread out along a categorical axis so that no two points overlap.It is an improved version of a strip plot.

1 Shows Actual Data Points
Unlike boxplots or violin plots, swarm plots show every single observation
Helps understand true data distribution

2 Avoids Overlapping
Automatically adjusts points so they don't overlap
Makes dense data clearly visible

3 Best for Small to Medium Datasets
Ideal when you want to see all values
Perfect for academic & project analysis

4. Great for Comparing Categories
Useful in bivariate analysis Example: salary vs specialisation, marks vs placement status

5.Detects Outliers Clearly
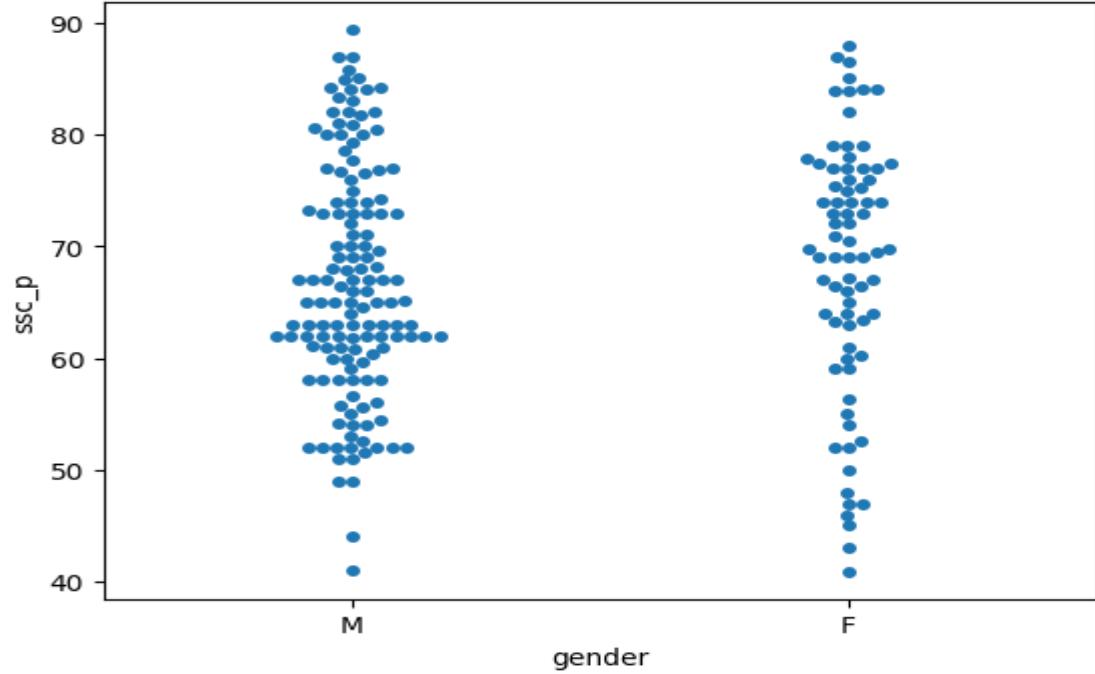Outliers stand out visually easier than boxplots in some cases

Code to make swarmPlot:

```
import seaborn as sns
import matplotlib.pyplot as plt
sns.swarmplot(x='specialisation', y='salary', data=dataset)
plt.show()
```

📊 Swarm Plot vs Others

Plot	Shows points	Handles overlap	Best for
Strip Plot	✅	❌	Simple view
Swarm Plot	✅	✅	Clean comparison
Box Plot	❌	✅	Summary stats
Violin Plot	❌	✅	Distribution

```
sns.swarmplot(x='gender',y='ssc_p',data=df)
plt.show()
```

Information In Violin Plot

Most salaries for all groups are concentrated between ₹200,000 and ₹300,000.
Mkt&Fin shows a wider salary spread compared to Mkt&HR.
Mkt&HR salaries are more consistent and compact.
Median salary of Mkt&Fin students is higher than Mkt&HR.
In both specialisations:
Male median salary is slightly higher than female.
Difference is small and overlapping.
Mkt&Fin (Male) has the highest variability in salary.
Female salaries in both specialisations show less variation.
One or two very high salary outliers (around ₹1,000,000) exist in Mkt&Fin (Male).
These outliers stretch the violin upward but do not affect most observations
Wider sections of the violin indicate more students at that salary range.
Narrow ends indicate fewer students.
Mkt&Fin → higher salary potential
Mkt&HR → more stable salaries
Males show slightly higher salary spread
Extreme high salaries are rare