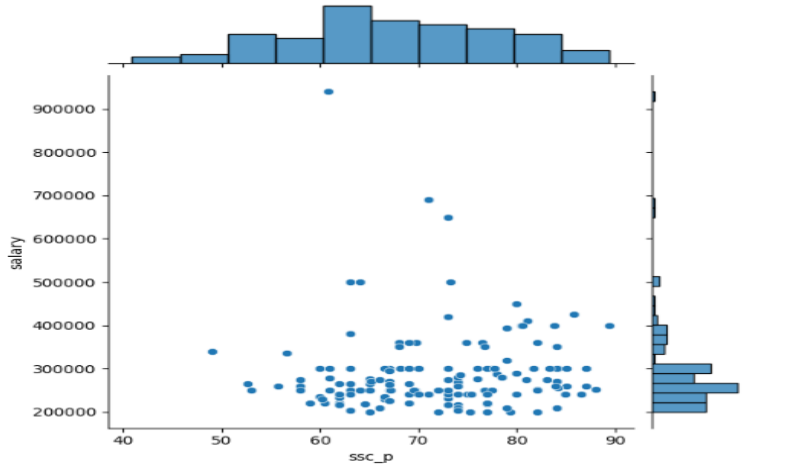
SEABORNS

1. JOINTPLOT

```
[10]: sb.jointplot(x='ssc_p',y='salary',data=dataset)
      plt.show()
```



The primary purpose of the **jointplot**() function in Seaborn is to create a comprehensive, integrated visualization that combines the bivariate relationship between two variables with their individual distributions, enabling a deeper understanding of the data.

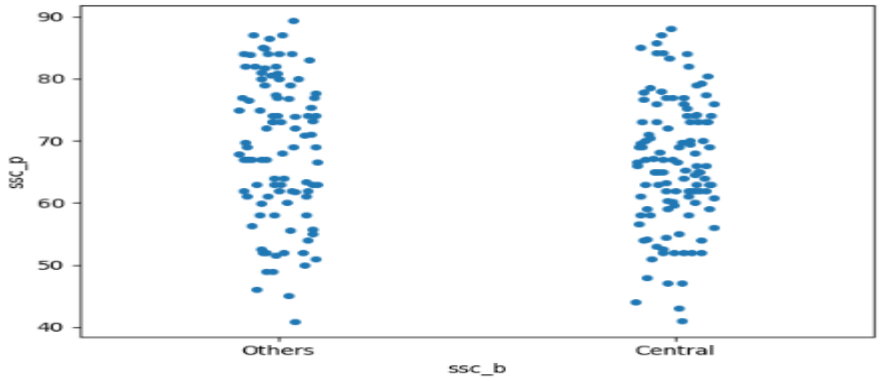
The joint plot consists of three subplots:

The main subplot shows the **bivariate relationship** between the two variables.

- The subplot **above** the main plot shows the **univariate distribution of the variable on the x-axis.**
- The subplot to the **right** of the main plot shows the **univariate distribution of the variable on the y-axis.**

2. STRIPPLOT

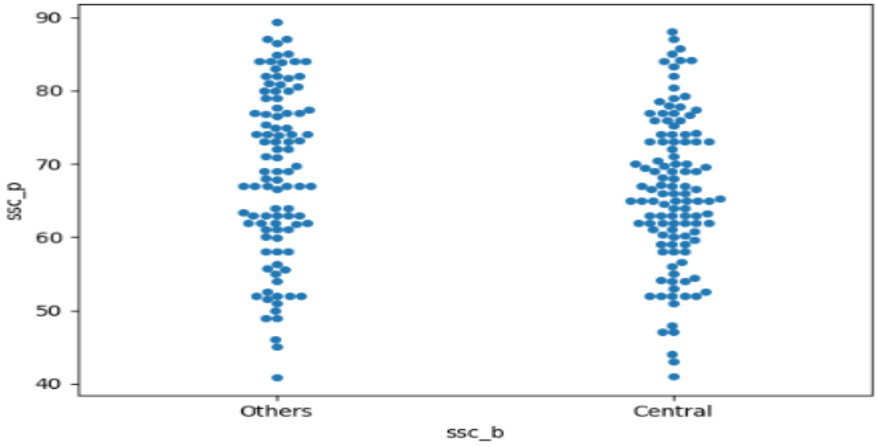
```
sb.stripplot(x = "ssc_b", y = "ssc_p", data = dataset)
plt.show()
```



A strip plot in Seaborn is a valuable tool for visualizing the distribution of one-dimensional data points, especially when dealing with **categorical variables** and the need to display all observations along with their distributions.

3. SWARMPLOT

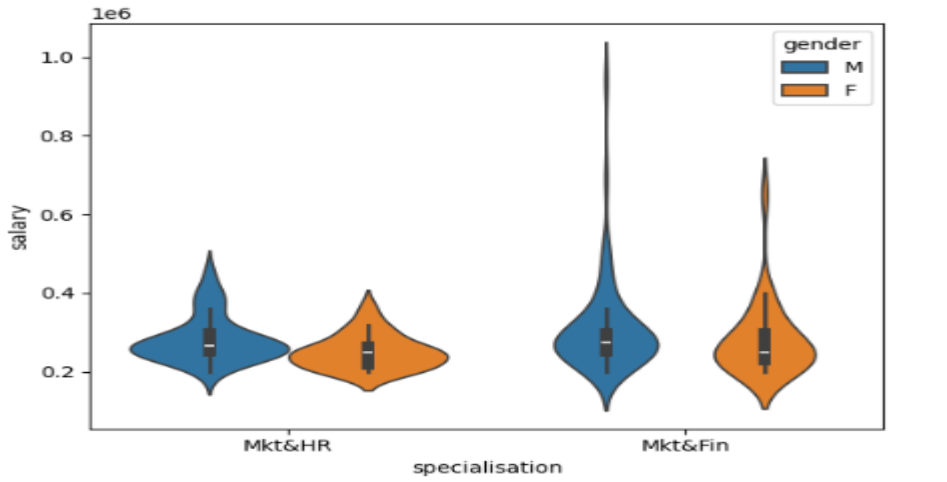
```
sb.swarmplot(x = "ssc_b", y = "ssc_p", data = dataset)
plt.show()
```



The swarmplot() function is similar to the stripplot() function, but it arranges the points in a way that prevents them from **overlapping along the categorical axis**. This provides a better representation of the distribution of values, especially for smaller datasets.

4. VIOLINPLOT

```
sb.violinplot(x = "specialisation", y = "salary", data = dataset,hue="gender")
plt.show()
```



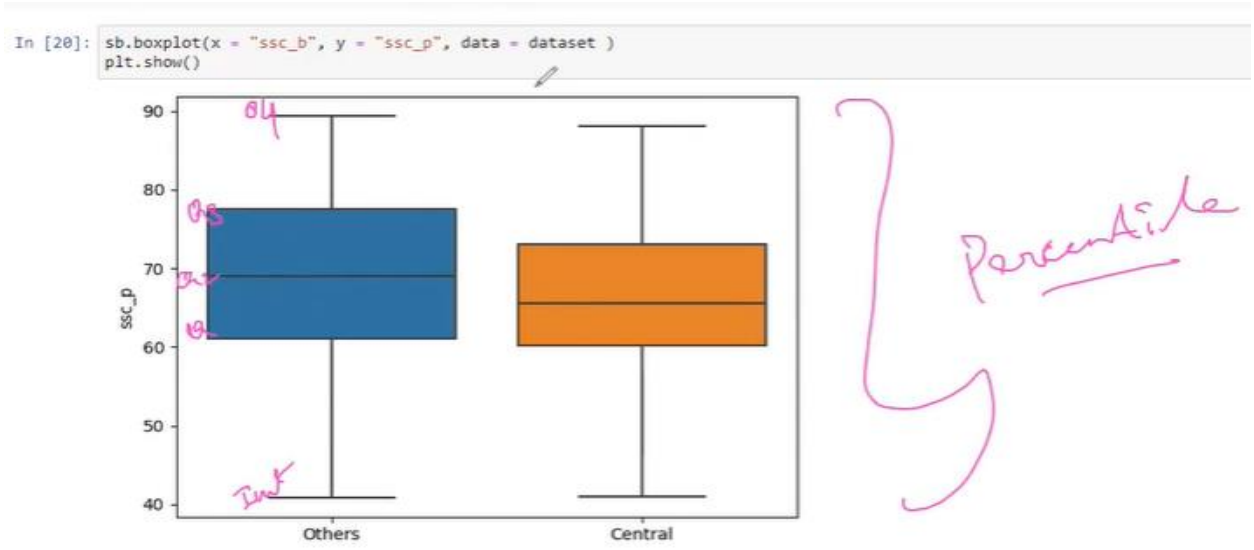
A **Violinplot**, is a type of visualization that combines **a box plot with a kernel density plot**. It is used to show the distribution of data points across different levels of one or more categorical variables. A violin plot is effective for visualizing the **distribution of quantitative data across different categories**, allowing for easy comparison of data distributions

The shape of the violin plot indicates the **density of data points** at different values, with **wider** sections representing higher density.

A **traditional box plot** that only displays summary statistics like **median, quartiles, and outliers**.

5. BOXPLOT

A Box plot, also known as a box-and-whisker plot, is a standardized way of displaying the distribution of a dataset based on a **five-number summary: the minimum, first quartile (Q1), median, third quartile (Q3), and maximum.**



Others (ssc_b)

The Boxplot is used by **Percentile** concept. In the Above Diagram,

X Axis→ssc_b(others)(Qual)

YAxis→ssc_p(Quan)

From this Dataset, Using of Percentile concept,In **Others** (ssc_b), **Initial** denotes→The students got the marks from the range 40.

Q1 to Q2 →62-68 Marks got by Students.

Q2-Q3→70-78 Marks got by Students.

Q4→90Marks got by Students.

Central(ssc_b)

X Axis→ssc_b(central)(Qual)

YAxis→ssc_p(Quan)

From this Dataset, Using of Percentile concept,In **Central** (ssc_p), **Initial** denotes→The students got the marks from the range 40.

Q1 to Q2 →60-64 Marks got by Students.

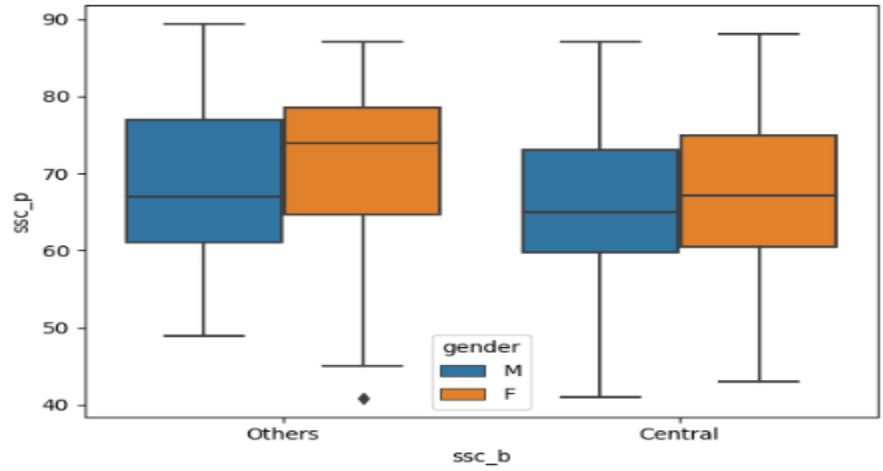
Q2-Q3→65-73 Marks got by Students.

Q4→90Marks got by Students.

summary

Compare to Central, In Others(ssc_b) More Students got(62-78) Marks.

```
sb.boxplot(x = "ssc_b", y = "ssc_p", data = dataset,hue="gender" )
plt.show()
```



<u>Others</u> (ssc_b)

The Boxplot is used by **Percentile** concept. In the Above Diagram,

Gender(Male):-

X Axis→ssc_b(others)(Qual)

YAxis→ssc_p(Quan)

From this Dataset, Using of Percentile concept,In **Others** (ssc_b), **Initial** denotes→The Male students got the marks from the range 45.

Q1 to Q2 →61-66 Marks got by Students.

Q2-Q3→66-76 Marks got by Students.

Q4→90Marks got by Students.

Gender(Female):-

X Axis→ssc_b(others)(Qual)

YAxis→ssc_p(Quan)

From this Dataset, Using of Percentile concept,In **Others** (ssc_b), **Initial** denotes→The Male students got the marks from the range 48.

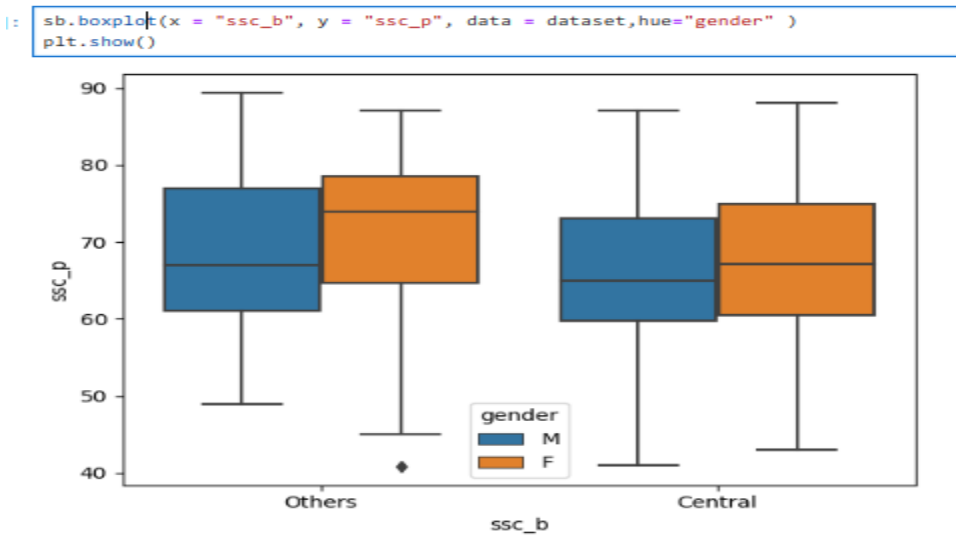
Q1 to Q2 →63-74 Marks got by Students.

Q2-Q3→74-84 Marks got by Students.

Q4→87Marks got by Students.

<u>Summary In Board</u>

Compare to Female, The More Male got Greater, 61-90 marks. Lesser Female got marks from the range 63-87.



<u>Central</u> (<u>ssc</u>_b)

The Boxplot is used by **Percentile** concept. In the Above Diagram,

Gender(Male):-

X Axis→ssc_b(others)(Qual)

YAxis→ssc_p(Quan)

From this Dataset, Using of Percentile concept,In **Others** (ssc_b), **Initial** denotes→The Male students got the marks from the range 43.

Q1 to Q2 →59-65 Marks got by Students.

Q2-Q3→66-74 Marks got by Students.

Q4→87Marks got by Students.

Gender(Female):-

X Axis→ssc_b(others)(Qual)

YAxis→ssc_p(Quan)

From this Dataset, Using of Percentile concept,In **Others** (ssc_b), **Initial** denotes→The Male students got the marks from the range 44.

Q1 to Q2 →63-68 Marks got by Students.

Q2-Q3→68-73 Marks got by Students.

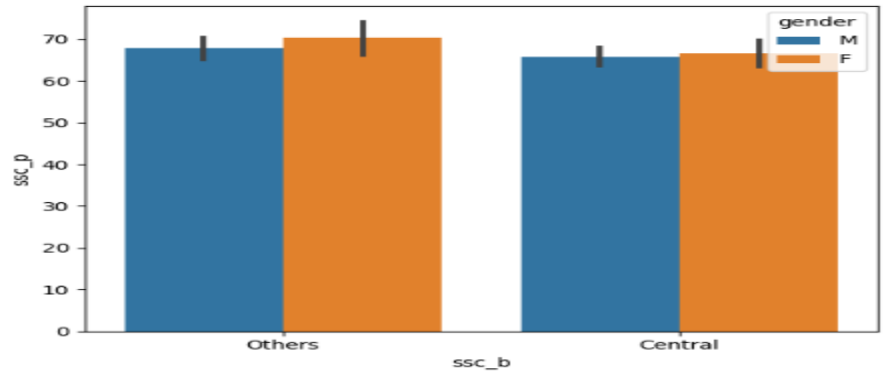
Q4→88Marks got by Students.

Summary In Central

Compare to Male, The More Female got Greater, 63-88 marks. Lesser Female got marks from the range 59-87.

6. BARPLOT

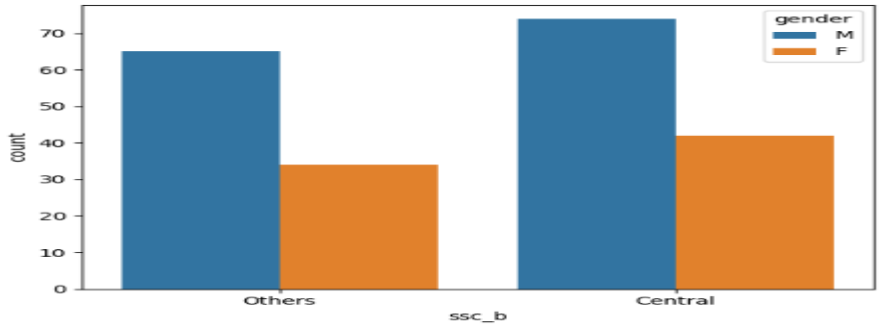
```
sb.barplot(x = "ssc_b", y = "ssc_p", data = dataset,hue='gender')
plt.show()
```



A bar plot or bar chart is a graphical representation that uses **rectangular** bars to display and compare the **values or magnitudes** of different **categories or groups**.

7. COUNTPLOT

```
[23]: sb.countplot(x = "ssc_b",data = dataset,hue='gender');
      plt.show()
```



The countplot() method in Seaborn is used to display the count of **categorical observations in each bin** in the dataset**.**

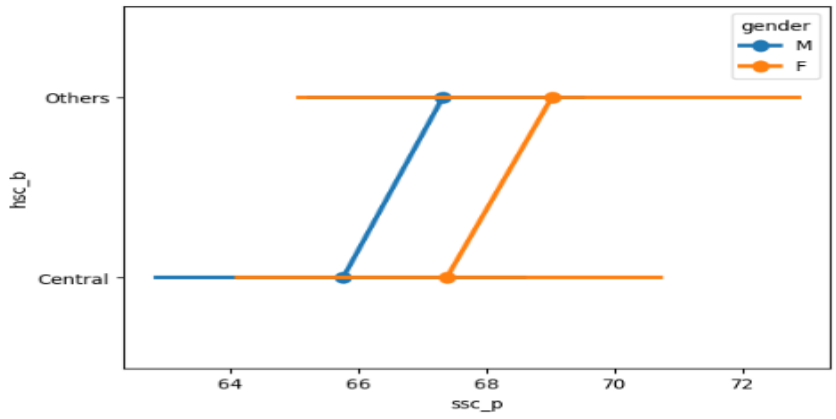
This method is particularly useful for comparing counts across **nested variables** and can be used to create bar charts of the number of observations per category.

8. POINTPLOT

Seaborn is a visualization method that uses scatter plot points to represent the **central tendency** of numeric data. It is particularly useful for visualizing features like point estimates and confidence intervals.

Confidence Interval the purpose of a confidence interval in statistics is to provide a measure of uncertainty, assess statistical significance, compare estimates, communicate results effectively, and support **decision-making based on the level of confidence** in the estimate.

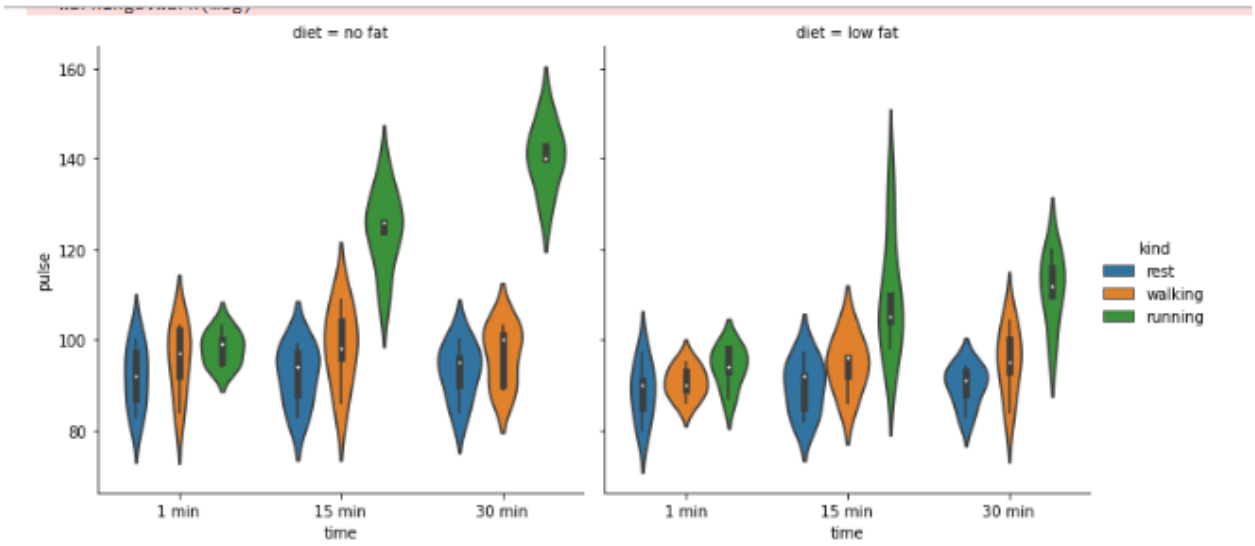
```
sb.pointplot(x = "ssc_p",y="hsc_b",data =dataset,hue='gender')
plt.show()
```



9. CATPLOT or FACTORPLOT

The catplot() function in Seaborn is used to create a **categorical** plot on a FacetGrid.

The catplot() function is a high-level interface that allows you to create a **variety of categorical plots, including point plots, bar plots, and violin plots,** among others



The relationship between **numerical and one or more categorical variables** using various visual representations.

summary

In **NoFat persons** ,chart both violin and boxplot is present.The box plot represents the density of pulse rate range, represents outliers.The More pulse rate range is between 75-115.some person while running the pulse is 123-125 and in 30 min time 136-142.

In **Low Fat persons**, chart both violin and boxplot is present. The box plot represents the density of pulse rate range, represents outliers. The More pulse rate range is between 75-120