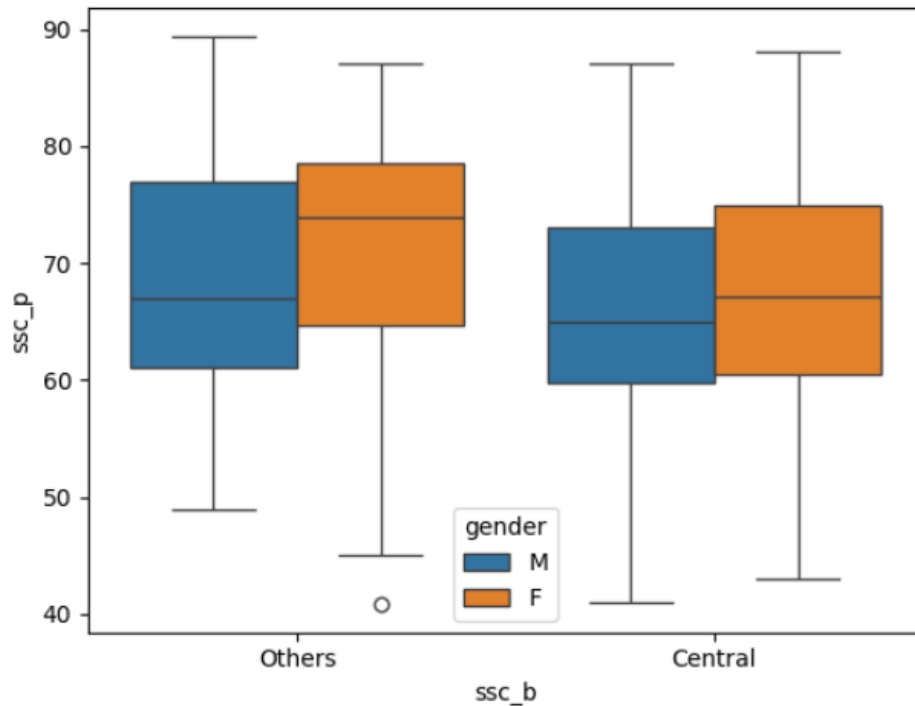# Box Plot

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


Relationship

- Relationship between the **ssc_p** (10th std) and **school board** types (Central & Others) for both **Males** and **Females**.
- Helps to compare how male & female of 10th standard students perform in their examination when they come from different board of school.
- Explains about the IQR and the relationship between the central tendency.

Differences:

Others board (Male) :

- Students scored between 48 – 88
- 25% of the students scored between the range of 45 - 65
- Median score is 74 mentioned with a horizontal line middle of the box.
- Most of the students scored between 62 – 66, shows the relationship of central tendency where the mode of the data is high from Q1 to Q2
- Variability is high over the longer space in the box in this case it is towards right.

- Since Highest scores is on the left side of the box this comes under **positive skew.**

Others board (Female) :

- Students scored between 45 – 86
- 25% of the students scored between the range of 48 – 62
- Median score is 67 mentioned with a horizontal line middle of the box.
- Most of the students scored between 74 – 78, shows the relationship of central tendency where the mode of the data is high from Q2 - Q3
- Variability is high over the longer space in the box here it is towards the left.
- Since Highest scores is on the right side of the box this comes under **negative skew**.
- Longer whisker line shows there is high variability compared to the short whisker line
- There is a outlier which is lesser than the lower outlier range.

Central board (Male) :

- Students scored between 42 - 88
- 25% of the students scored between the range of 42 - 60
- Median score is 65 mentioned with a horizontal line middle of the box.
- Most of the students scored between 58 - 65, shows the relationship of central tendency where the mode of the data is high from Q1 to Q2
- Variability is high over the longer space in the box in this case it is towards right.
- Since Highest scores is on the left side of the box this comes under **positive skew.**

Central board (Female) :

- Students scored between 44 - 87
- 25% of the students scored between the range of 44 - 61
- Median score is 68 mentioned with a horizontal line middle of the box.
- Most of the students scored between 68 - 75, shows the relationship of central tendency where the mode of the data is high from Q2 - Q3
- There is no much variability in the IQR, so we can say that most the female students have scored between 62 -75
- Since Highest scores is on the right side of the box this comes under **negative skew**.
- Longer whisker line shows there is high variability compared to the short whisker line

Comparison of Trends

Others Board (Male & Female) :

- Most the females scored better than the males
- Top score is obtained by the male
- The difference in the males score is higher than the difference in the female score

Central Board (Male & Female):

- Female students have scored slightly better than the males
- There is no much difference between male and female students in this board.

Inference:

- Other board students have performed better than the central board students.
- High initial marks and top score marks are scored by males in other boards and Female in central boards.