

Sardar Patel Institute of Technology  
**SEM VII:ADVANCE DATA VISUALIZATION.**

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<b>Branch</b>	BE CSE DS (BATCH B)
<b>Experiment no.</b>	10

<b>Topic:</b>	<p>Design Big Data Dashboards using Tableau on the datasets - Education sector</p> <ul style="list-style-type: none"><li>● Basic - Bar chart, Pie chart, Histogram, Time line chart, Scatter plot, Bubble plot</li><li>● Advanced - Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, Jitter</li><li>● Write observations from each chart</li></ul>
<b>Theory:</b>	<p>Link of dataset: <a href="https://www.kaggle.com/datasets/vidyapb/indian-school-education-statistics">https://www.kaggle.com/datasets/vidyapb/indian-school-education-statistics</a></p> <p>Purpose of the Dataset:</p> <ul style="list-style-type: none"><li>● The dataset is used to analyze <b>gender-wise enrollment patterns</b> across <b>different education levels</b> (Primary, Upper Primary, Secondary, and Higher Secondary) in various states and union territories of India.</li><li>● It helps track trends in <b>gender parity</b> in education, the <b>total enrollment numbers</b>, and provides insights into <b>regional disparities</b> in the education system.</li><li>● The dataset can be used to generate visualizations, such as <b>comparative bar charts, line charts</b>, and <b>geographical maps</b> to understand enrollment patterns across states and over different years.</li><li>● <b>State_UT</b>: The state or union territory in India where the enrollment data is recorded.</li><li>● <b>Year</b>: The academic year in which the data was collected.</li><li>● <b>Primary_Boys</b>: The number of boys enrolled in primary education (grades 1 to 5).</li><li>● <b>Primary_Girls</b>: The number of girls enrolled in primary education (grades 1 to 5).</li><li>● <b>Primary_Total</b>: The total number of students enrolled in primary education, including both boys and girls.</li><li>● <b>Upper_Primary_Boys</b>: The number of boys enrolled in upper primary</li></ul>

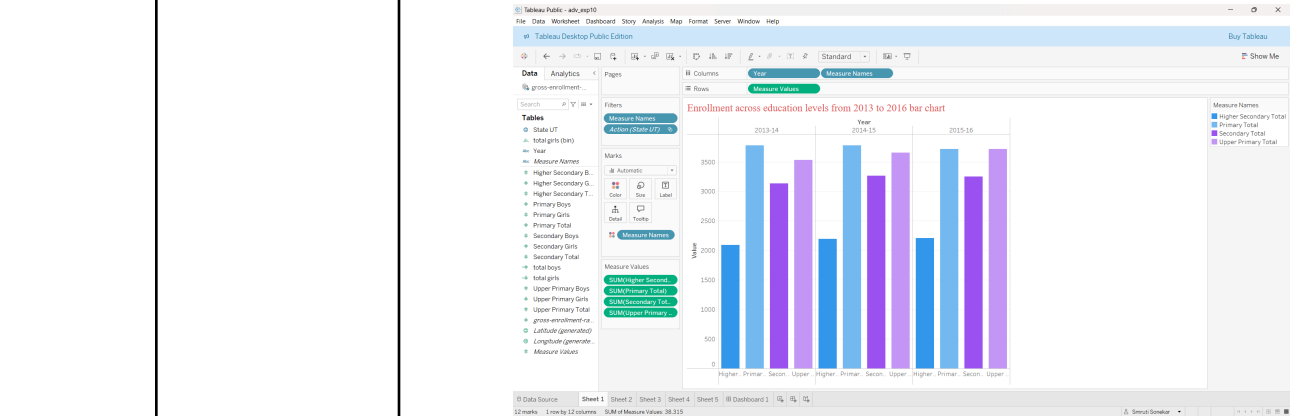
education (grades 6 to 8).

- **Upper\_Primary\_Girls:** The number of girls enrolled in upper primary education (grades 6 to 8).
- **Upper\_Primary\_Total:** The total number of students enrolled in upper primary education, including both boys and girls.
- **Secondary\_Boys:** The number of boys enrolled in secondary education (grades 9 and 10).
- **Secondary\_Girls:** The number of girls enrolled in secondary education (grades 9 and 10).
- **Secondary\_Total:** The total number of students enrolled in secondary education, including both boys and girls.
- **Higher\_Secondary\_Boys:** The number of boys enrolled in higher secondary education (grades 11 and 12).
- **Higher\_Secondary\_Girls:** The number of girls enrolled in higher secondary education (grades 11 and 12).
- **Higher\_Secondary\_Total:** The total number of students enrolled in higher secondary education, including both boys and girls.

**Program:**

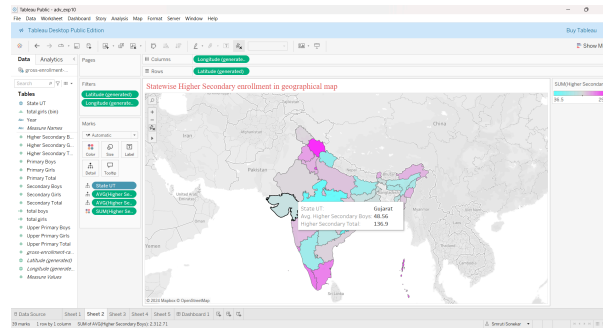
**Enrollment Across Education Levels (2013-2016) - Bar Chart:**

- This bar chart visualizes the enrollment data for different education levels (Primary, Upper Primary, Secondary, and Higher Secondary) for the years 2013 to 2016. It compares the **total enrollment** at each education level over these years, highlighting trends and changes in the enrollment rates across different levels of education.



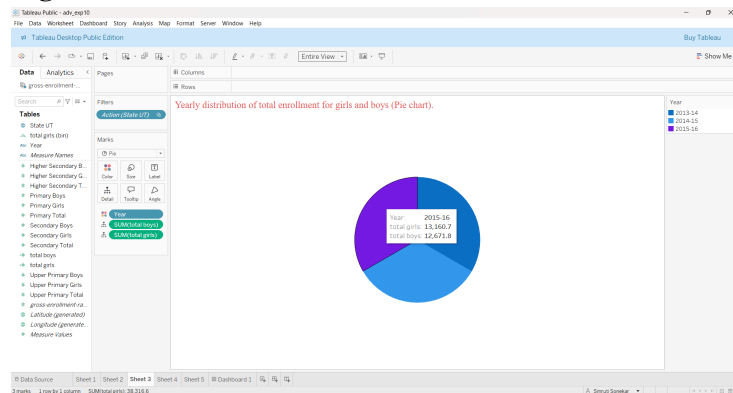
**Statewise Higher Secondary Enrollment in Geographical Map:**

- This map visualizes the **Higher Secondary enrollment data** across Indian states and union territories. The color intensity or size of the markers represents the enrollment numbers, allowing for a geographical comparison of **higher secondary enrollment** across different regions of India. It helps identify areas with high or low enrollment.



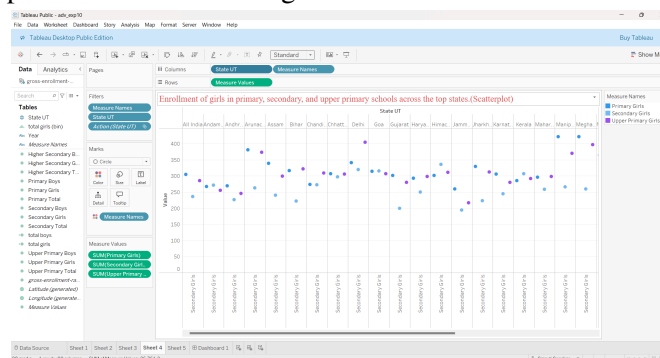
## Yearly Distribution of Total Enrollment for Girls and Boys (Pie Chart):

- This pie chart shows the **gender-wise total enrollment** (boys vs. girls) across different education levels for a specific year. It highlights the proportion of boys and girls in the education system, giving a clear picture of **gender distribution** within the overall enrollment.



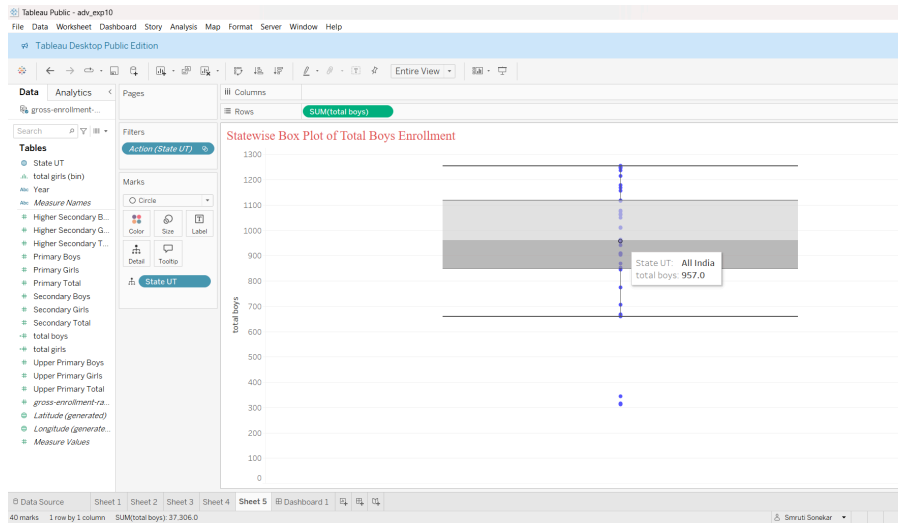
## Enrollment of Girls in Primary, Secondary, and Upper Primary Schools Across the Top 30 States (Scatterplot):

- This scatter plot visualizes the **enrollment of girls** in Primary, Secondary, and Upper Primary education across the **top 30 states**. Each data point represents a state, with the x-axis denoting the educational level and the y-axis representing the enrollment numbers. The scatter plot helps identify patterns and outliers in girls' enrollment across various educational stages.

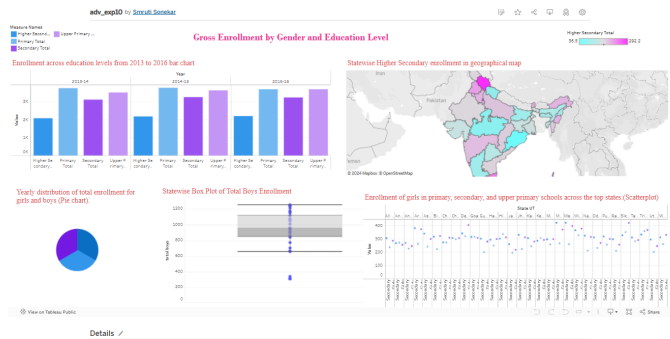


Statewise Box Plot of Total Boys Enrollment:

- The box plot visualizes the **distribution of total boys' enrollment** across different states and union territories. It shows the **median, quartiles**, and any potential **outliers** in the enrollment numbers. This helps understand the variation in boys' enrollment across states and provides insights into states with significantly high or low enrollment.



Result:



Link : [https://public.tableau.com/views/adv\\_exp10\\_17313229384930/Dashboard1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/adv_exp10_17313229384930/Dashboard1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link)

Conclusion:

These charts collectively offer a detailed analysis of enrollment trends, gender distribution, and regional disparities in India's education system, which can be effectively communicated using Tableau.