**BHARATIYA VIDYA BHAVAN'S**
# SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Empowered Autonomous Institute Affiliated to University of Mumbai)
[Knowledge is Nectar]
## Department of Computer Engineering
### Advanced Data Visualization

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| **Class** | BE CSE DS |

**Experiment 10:**

**Aim: Design Big Data Dashboard using Tableau on the dataset -Education Sector**

**DATASET LINK: Student Performance Dataset**

**Dataset Columns :**

**School ID**: A unique identifier for each school, used to track and differentiate between various institutions.

**Gender**: Indicates the sex of the student, typically categorized as male or female, which may be relevant for analyzing gender-based trends in education.

**Age**: The age of the student, which can be used to study the impact of age on academic performance and social factors.

**Size of Family**: The number of members in the student's family, which may influence the student's academic and social environment.

**Father Education**: The highest level of education attained by the father, which can impact the educational aspirations and support provided to the student.

**Mother Education**: The highest level of education attained by the mother, similarly affecting the student's educational opportunities and support.

**Occupation of Father**: The job or profession of the father, which can provide insights into the family's socio-economic status and its potential influence on the student's education.

**Occupation of Mother**: The job or profession of the mother, also relevant for understanding the family's socio-economic context and its impact on education.

**Family Relation**: Describes the relationships among family members (e.g., siblings, guardians), which can affect the student's emotional and social development.

**Health**: Refers to the general health status of the student, which can influence attendance, participation, and overall academic performance.
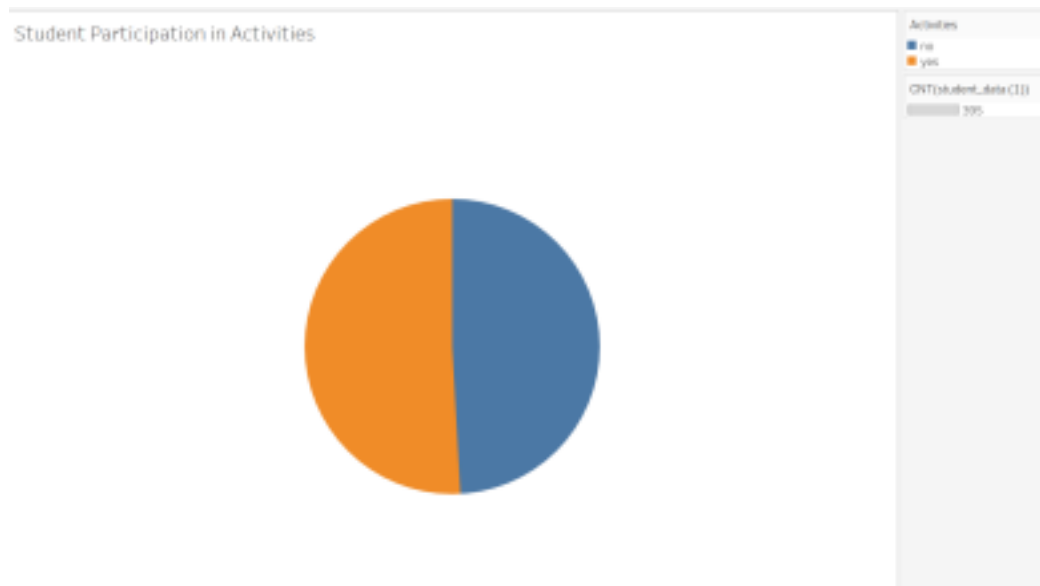
**Grades**: The academic performance of the student, typically represented by scores or letter grades, used to assess educational outcomes and effectiveness.
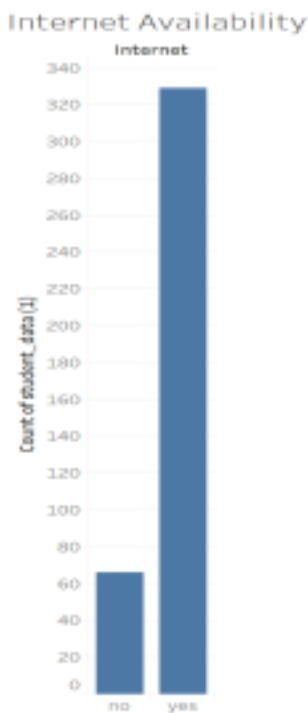
## DASHBOARD USING TABLEAU:
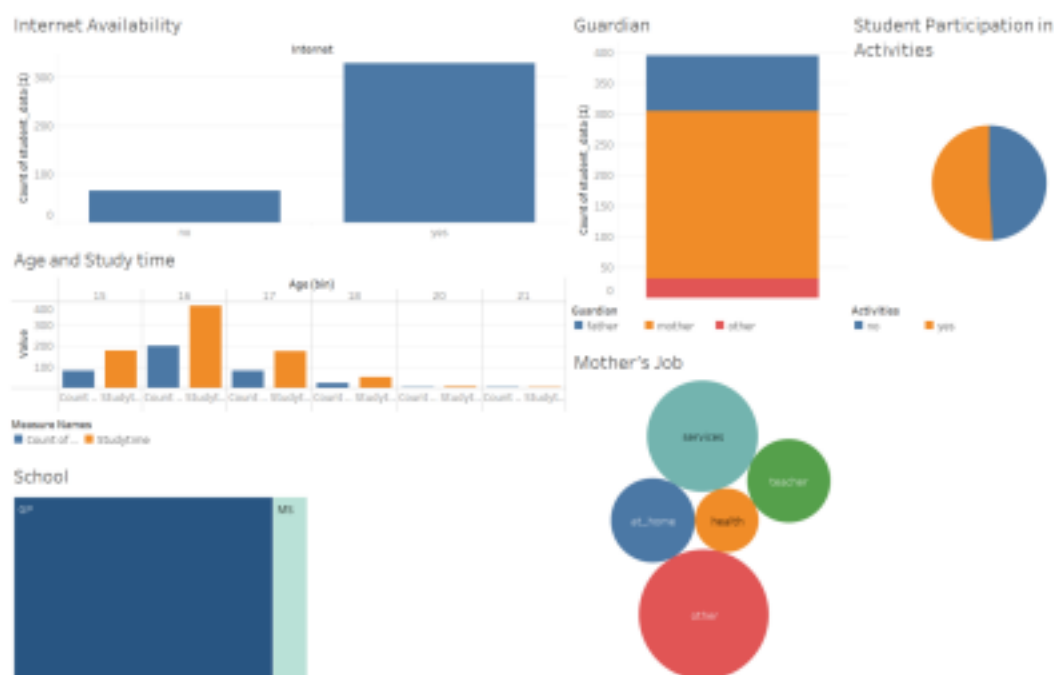


**CHARTS IN THE DASHBOARD:**
**Pie chart:**

Student Participation in Activities

Activities
■ no
■ yes

CNT(student_data (1))
▭ 395

**Indicates half of the total students participating in activities and other half does not participate in the activities.**

**Bar Chart:**

Internet Availability

Internet

340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0

Count of student_data (1)

no    yes

**This bar chart shows that the majority number of students have internet connection i.e about 330 students and about 70 students do not have internet connection.**

**Packed Bubble Chart:**



Mother's Job

Mjob
- at_home
- health
- other
- services
- teacher

services

Teacher

at_home
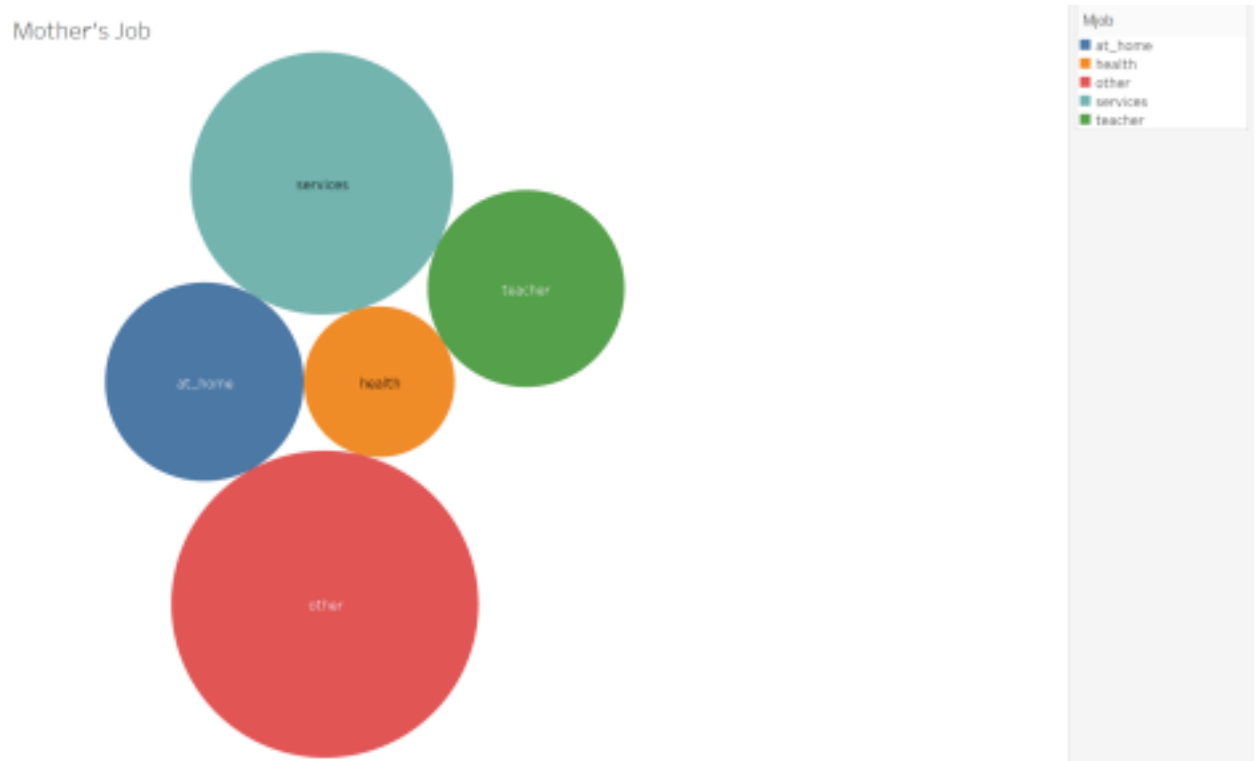
health

other

**This bubble chart shows that the majority of the mothers work in the service sector or have other unspecified jobs while the least amount of them work in the health sector.**
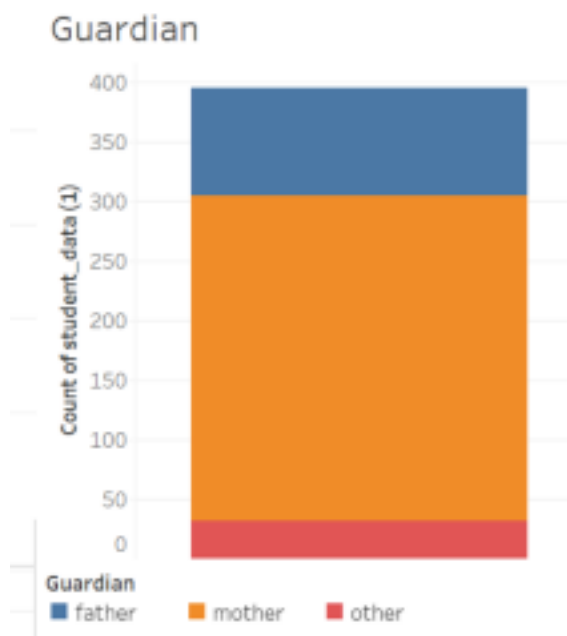
**Tree chart:**



School

GP

MS

**This tree chart indicates that the majority of students go to GP school and a very few of them go to MS school.**

**Grouped Bar Chart:**



Age and Study time
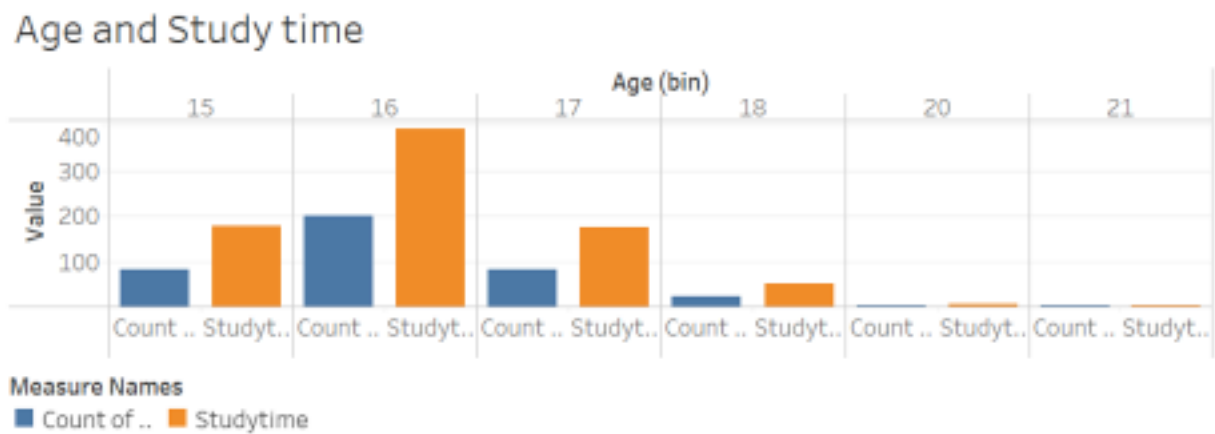
**This chart helps to find the correlation between the age of the students and the study time. It shows that maximum students are of age 16 and they have the maximum study time.**

**Stacked Bar Chart:**



Guardian

**This chart shows that maximum students have mothers as their guardians indicating that mothers take care of the child's education while fathers are at full time jobs.**

# Conclusion:

Tableau helps transform complex data into clear, visually appealing insights.The dashboard effectively visualizes key aspects of the student population, revealing insights into participation, access to resources, employment patterns among parents, educational choices, and family dynamics. By addressing the identified gaps and leveraging the strengths observed, stakeholders can work towards creating a more supportive and effective educational environment for all students.