**IFT 598 Data Visualization and Reporting for IT**

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**Project - Phase III: Dashboard Implementation**

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**Section 1: The Dashboard**

Graphical user interface, application

Description automatically generated

**Explanation:**

The dashboard is consisting of different plots for SAT test results for California (2015-2016) dataset. Every plot addresses different questions. It has the filter and parameters, which will be helpful to select the required number from the entire data. The dashboard consists of count of students from various schools, counties where test takers are more than 1000, Top N schools having high Average Math score, relationship between the district enrollment size and the average score for reading in each district, count of schools in every county, number of test taker and number greater than 1500 at school level, Top N average school in math at district level, median-max-min value for AvgScrRead, AvgScrWrit, AvgScrMath, max test takers in different counties and so on. In order to represent the dashboard, we used Bar charts, scatter plots, Stacked bar charts. This dashboard will be helpful for University/college administration, government, faculty and students, tutoring centers.

**Section 2: The Dataset**

For this project we consider SAT test result of California for the period of 2015 to 2016. The dataset consists of California districts, schools, and counties name along with enrollment, average read, average math, average write scores, number of test takers, students who got greater than 1500 and its percentage form. In this SAT Report dataset is having the period of 2015 to 2016. The columns enrollment has range of 0 to 492835, NumTstTakr has minimum value as 0 and maximum value as 214262, AvgScrRead is ranging between the 261 and 657, AvgScrMath has minimum value as 264 and maximum value as 710, AvgScrWrit is ranging from 263 to 677, number that is greater than 1500 with column name NumGE1500 has minimum value as 0 and maximum value 89840 and the percentage of greater than 1500 are ranging between the 0 to 98.53. We pre-processed dataset of SAT Test Results Over the Years (California) like  AvgScrRead ,AvgScrMath, AvgScrWrit,NumGE1500,PctGE1500 these values are column names which contain null values where we removed those values for that we used tableau tool for data preprocessing.

Graphical user interface, application, table, Excel

Description automatically generatedFig: Portion of SAT Test result dataset

**Section 3: Dashboard Users**

**University or College Administration –** This dashboard can be helpful for the university or college admission department to make a decision on student admission whether the student can get a admission or not and it can also be useful to analyze the student skills where he/she can make a top score or a normal score. Based on that admission department can give suitable major and if any courses need to be taken, they can inform before.

**Government –** Government can use this dashboard to see the student’s performance district wise, school wise and county wise. Government can offer the scholarships to the students who scored good marks. It can also be helpful to develop the schools or districts where the percentage is low. Government can provide better schemes to help the students in different informative and interactive ways.

**Faculty and Students –** Students and faculty can make the best usage of this dashboard to make a decision on students’ performance by the marks and where to improve for the next exams onwards. In all subjects the students’ performance can be seen in the dashboard. Based on the students’ performance, faculty teaching skills also can be determined. To analyze the school standards this faculty and student dashboard can be useful.

**Tutoring Center**

Tutoring centers may utilize dashboards to review students' performances and teach them on ideas they are missing, as well as enhance their performance by delivering practice sessions, problems, and training on concepts that were difficult for them, and guiding them to correct their mistakes.

**Section 3: Interactivity**

A static dashboard offers all the information required, but users are unable to modify their presentations. Therefore, interactive dashboards are required. With our dashboard user have that accessibility to the dashboard, based on user needs and required information, user can change the dashboard. This will give the only required information in a easy manner for every user. By using the tableau features like filters, top N filters, analytics, reference lines, parameters, calculated fields, live database connections, thresholds etc are helpful to create an interactive dashboard. These features will help the users to get a better understanding and representation of the data. We used these features for this visualization to filter out counties, districts, schools with respect to the scores and finding the maximum values/scores, minimum values/scores, average scores/values by adding the reference lines to the visualizations by setting the ranges.

**References**

**Dataset -** <https://www.kaggle.com/datasets/thedevastator/unlocking-achievement-understanding-california-s>

**Teams Mural Dashbaord-** <https://app.mural.co/invitation/mural/dvproject5323/1680676027808?sender=ua5659191228b4b81c2cb8181&key=5829eab9-a973-4b13-bd64-ae8a5d59f360>

**Published Link:**

<https://public.tableau.com/views/598_16823155715350/Dashboard1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link>