

Data Visualization using Tableau

– CSE587

By

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Introduction:

Class room scheduling for courses is complex problem. It is all the more difficult in a department where the enrollments are increasing and number of courses and class sizes are increasing. In this project we will design a set of 20 questions that will provide insights into the situation of classroom scheduling at UB North Campus and provide answers by implementing MapReduce algorithms using Hadoop.

Data Source:

For this project we will use the Class room of University At Buffalo. The data is for courses and class rooms from 1931 to 2017. There are two .csv files which have the Class Room scheduling for Courses and One .tsv file for exam rooms scheduling. Following are the headers for Class Room Scheduling:

Semester ID, Semester Name, Location, Days of the Week, Class Time, Course Number, Course Name, Current Number of Students, Max Number of Students Allowed

utilization_dashboard :

We visualized the below questions in this Dashboard:

Question1:

What is the Utilization of different Courses over all the years?

This gives the cumulative utilization of all the courses held in a year. Created a bar graph for this.

Question:4

What are Buildings which are Efficiently Utilized over all the years?

Created a bar graph for this. This gives only those buildings which have an utilization greater than 1.

Question:6

What are all the Courses which have Efficient Seating Arrangement?

This gives only those courses which have an utilization greater than 1. Created a bar graph and applied a filter over courses

Question3:

What are the Different Departments and their Utilization of Classrooms?

This gives the utilization department wise for all the courses offered by it. Created a bar graph and applied a filter over departments

Top Ten Popular Dashboard:

We visualized the below questions in this Dashboard:

Question:3

What are the Top Ten Timings which are popular over all the years?

This gives the top ten timings according to number of students enrolled for courses which are held in that particular time. Created a bar graph for visualization.

Question:7

What are Top Ten Courses across all the departments which most of the Students Were Enrolled?

This gives the top ten courses according to number of students enrolled for courses. Created a bar graph for visualization.

Question:9

What are the Top Ten Popular Departments in UB in terms of students Enrollment?

This gives the top ten popular departments according to number of students enrolled for courses offered by those respective departments. Created a bar graph for visualization.

Question:20

What are the Top Ten Buildings which are more populated over all the years?

This gives the top ten buildings according to number of students enrolled for courses which are held in those buildings. Created a bar graph for visualization.

Popular Day Dashboard:

We visualized the below questions in this Dashboard:

Question:3

What are the Top ten Days across year?

This gives the top ten days over all the years based on the number of students attending the courses on those days. Created a bar graph for visualization.

Online Seminar Dashboard:

Question:14

How many Online courses were offered in total?

This shows the number of online courses offered across all years. Created a bar graph for visualization.

Question:15

How many number of Seminars are offered in each Semester over all the years?

This shows the number of Seminars offered across all years. Created a bar graph for visualization.

Exam Dashboard:

Question:17

How many Exams Each Building have server over all the years?

This shows the number of exams every building has hosted over all the years. Created a bar graph for visualization.

Question:18

What are the total number of exams happened in each Semester over all the years?

This shows the number of exams happened every semester. Created a bar graph for visualization with filter on department.

Question:19

What are the total number of exams happened for each department over all the years?

This shows the total number of exams happened for the courses offered by every department across all the years. Created a bar graph for visualization with filter on year.

Dashboard Misc:

Question:12

How many students each building have served over all the years combined?

It shows the number of students each building has served over all the years combined. Created a bar graph for visualization and applied filters on building and year.

Question:10

How many Courses each Building have served over all the years?

It shows the number of courses each building has served over all the years. Created a bar graph for visualization

Question:16

How many students were enrolled in each department over all the years ?

It shows the number of students enrolled in all of the courses combined for a department. Created a bar graph for visualization