TERM PROJECT

Classifications using US University Grad School Ranking Data

1. Dashboard 1 – Branch Specific University choices & Comparisons

   a) In the Left side we see a graph with circles, each depicting the possible university choices that a student can apply to a specific Department of Engineering with a specific Average GRE Quant score and his feasible budget (in-state or out-state tuition) range. On the extreme right side of the dashboard, the top three slider filters namely "Avg GRE Quant Score" for setting the Avg. GRE Quant score range, "tution_split_instate" for setting the desired Instate Tuition fees (in USD) and "tution_split_outstate" for setting the desired Outstate Tuition fees (in USD) . In case only one type of tuition fees applies, the other one is kept in default position i.e. covering the entire range. The Department of Engineering can be selected by choosing one of the options from the "Branch_Engineering" dropdown, placed on the extreme right of the dashboard.

   b) In the Right side we see a graph with vertical bar plots, each depicting the university choices selected in the School Name dropdown section which is present at the extreme right side of the dashboard(just below the "Branch_Engineering" dropdown option)

      The purpose of this graph is for any person who wants to compare one university versus the other(s) by selecting the checkboxes against their respective names or "All" option. Here the every department of engineering of the universities are compared on basis of the following parameters:

      i. Average of Peer and Recruiter assessment score
      ii. Rank
      iii. GRE quant score (the usual cut off score)
      iv. Acceptance Rate
      v. The number of PhDs granted in the year of 2016.
      vi. Engineering school Research Expenditure
      vii. Graduate Engineering annual enrolment
      viii. Tuition In-state
      ix. Tuition Out-state
      x. Faculty Reputation – This is calculated by finding the total number of faculty members in a university who are members of the prestigious National Academy of Engineering. This is calculated as follows:

         The product of Faculty membership in National Academy of Engineering (percentage) with the quotient we get after dividing Engineering school research expenditures (2016 fiscal year) by Research expenditures per faculty member (2016 fiscal year).

      The above mentioned parameters can be chosen using the radio button option. This way we can figure out where and in which case does our favourite university overshadow its peers or has scope to improve.

2. Dashboard 2 – University Comparison depending on Rank & Faculty Reputation

a) On the left side we see a graph showing the faculty reputation of various Graduate schools in the decreasing order. It is calculated by finding the number of faculties in a University who are members of National Academy of Engineering. The number of faculties is calculated by dividing the value of Engineering school research expenditures (2016 fiscal year) by Research expenditures per faculty member (2016 fiscal year) for each university.

b) On the Right side we see a graph with graph with circles, each depicting the possible university choices that a student can apply to with a specific Average GRE Quant score and his/her feasible budget (in-state or out-state tuition) range. On the bottom of extreme right side of the dashboard, the three slider filters namely "Avg GRE Quant Score" for setting the Avg. GRE Quant score range, "tution_split_instate" for setting the desired Instate Tuition fees (in USD) and "tution_split_outstate" for setting the desired Outstate Tuition fees (in USD) . In case only one type of tuition fees applies, the other one is kept in default position i.e. covering the entire range. This gives a general list of universities depending on their overall ranking. On hovering, we can see whether the tuition fees is quoted is per year or per credit.

3. Dashboard 3 – University classification & density of enrolments on Map

a) On the upper side we see a map of United States of America showing the density of graduate students enrolled in the fiscal year of 2016 across various states. The bigger the blob, the higher is the number of number of graduate students enrolled in that particular state. The state's abbreviated names are marked on the map and on hovering on each of them the total number of graduate students that are enrolled is displayed. On the right side, the colour pallet for every state is also shown.

b) On the lower side we see a Classification graph with small solid circles, each depicting a particular university. The circles are coloured differently as per their ranking (the colour range is shown in the extreme bottom right corner). This graph is plotted Avg. GRE Quant score versus Acceptance rate of the universities as given in the US News Data. We observe the circles with darker shades of green are in the top-left quadrant – depicting the most competitive or in other words, highly ambitious universities who have a higher than average GRE Quant score and very low acceptance rate. The ones in the top-right quadrant with high avg. GRE Quant score but a higher acceptance falls under the ambitious category. The ones in the bottom-left quadrant with low avg. GRE Quant score and a low acceptance falls under the moderate category and the remaining quadrant has mostly all red circles (ones ranked low) with low avg. GRE quant score and sufficiently high acceptance rate.

This graph is ideally helpful to anyone who would want to apply to the universities, knowing where to invest time and money. For the school admins, one can analyse in which category their university lies and use the previous comparison graphs to understand how and where they can improve.

Team members

Tulika Sengupta(50208677)

Rimi Das(50206511)