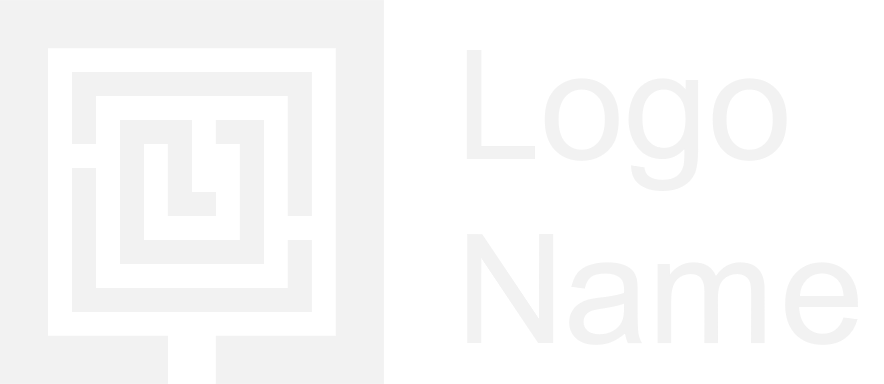


|  |
| --- |
| Zewail University Dashboard |
| “Visualization Course Final Project (Fall 2023)”  -Mahmoud Tarek Mahmoud 202202051 |
| January 2 |



[I] Design Phase:

[a]: -My clients” who will use the dashboard” :

-University Administrators.

-Faculty and Department Heads.

-Student Services.

-Students.

-Admissions and Enrollment Teams.

-Information that will be provided by my client:

[grades, departments, capacity, history].

-Questions that your dashboard should answer:

-what is the average grades of students?

-How many students are in each department?

-what is the average of each of the 7 exams in each of the 8 semesters?

-what is precedence of the presence of departments in the university based on the date of their establishment?

[b]: -Each chart in the dashboard:

A blue pie chart with numbers and a few percentages

Description automatically generated

-This Pie chart displays the average grades of students depending on 3 ranges of marks: from 0 to 50, 51 to 80, and from 81 to 100.

-this chart will answer that question: what are the average grades of students?

-the colors are consistent because I have chosen them from online pallets.

-The legend can be controlled to display some ranges of marks.

-This Pie chart always shows up, but you can interact by tapping and legends.

- I have chosen the Pie chart because Pie charts are effective in illustrating the proportion of each component in relation to the whole. Each slice of the pie represents a part of the total, making it easy to understand the contribution of each category.

A graph of different colored lines

Description automatically generated with medium confidence

* The Bar chart displays the number of students in each department of the university which means the capacity in each department.
* -this chart will answer that question: How many students are in each department?

-This Pie chart always shows up, but you can interact by tapping.

-we have used the Bar chart because it displays many elements so we can compare the data.

A graph of numbers and a number

Description automatically generated with medium confidence

-this Stacked Bar Chart displays the average of the 7 exams “papers” in each of the 8 semesters.

-this chart will answer that question: what is the average of each of the 7 exams in each of the 8 semesters?

-The legend can be controlled to display some ranges of marks.

-the colors are consistent because I have chosen them from online pallets.

- This Stacked Bar Chart always shows up with a slider to move it and visualize the chart well.

-I have chosen the Stacked Bar Chart to visualize the average “performance” of the students in each semester, so the Stacked Bar Chart is the most recommended one.

A graph with blue dots

Description automatically generated

-The chart displayed is a scatter plot, generally used to show the distribution and relationship between two quantitative variables.

In this context, it appears to be showing the distribution of average grades across semesters, with each point's placement on the Y-axis indicating the average grade and the X-axis representing the semester.

If the standard deviation affects the bubble size, larger bubbles would indicate a greater spread in grades (more variability) for that semester, while smaller bubbles would indicate that the grades were more tightly clustered around the mean (less variability).

[c]:- Positions for each chart:

- the pie chart should be on the left above the page to be clear and obvious, and the other bigger elements should be under it, the title of the page should be in the middle of the page, but the title of the chart should be in the left side of the chart, the slider should be down or above or right the chart.

-Criticized in your design:

-maybe I was have to divide the page with two white lines to be 4 quarters but it’s not bad now too.

The Complete Dashboard:

A screenshot of a computer

Description automatically generated

- Source code of the dashboard :

-Java Script: each chart has a java script file “chart “and it is different from chart to another, I have taken the java code from the documentation on the classroom “from Assignment1”.

-Html: I have put the links of the chart div on the html” index” and the headers of the charts and the page.

-CSS: I have edited the size and the space “indentation” of the texts and the charts.

-python : I have written the “app.route” and the function of each graph with its loops and codes.

Snapshot of the provided data:A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a video

Description automatically generated

A white grid with black lines

Description automatically generated

-Suggested future work:

- Further Data Collection and Analysis.

- In-Depth Statistical Analysis.

- Integration with Other Systems.

- Technology Upgrades.

“how\_to\_run.doc” : from the python file, “server file”.