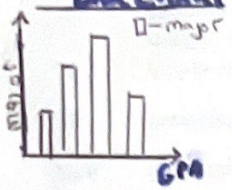
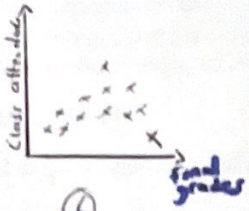
IDEAS

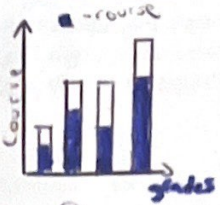
① **BAR CHART**



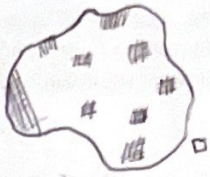
② **Scatterplot**



③ **Stacked bar chart**

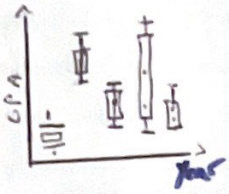


④ **Heat Map**



⑤ **Line Graph**

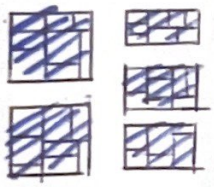
⑥ **Boxplot**



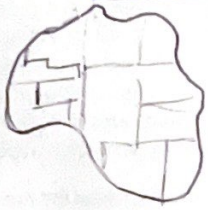
⑦ **Pie Chart**

⑧ **Bubble Chart**

⑨ **Tree Map**



⑩ **Chloropeth Map**



QUESTION

→ How will the GPA-related visualizations help to understand the performance of college students

→ How will the stacked bar chart effectively convey the distribution of grades across different courses.

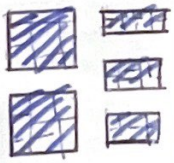
→ How might the use of color effectively convey additional information.

FILTER

⑦ Pie Chart

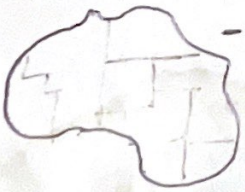
— Irrelevant as this is a duplicate of idea ①

⑨ Tree Map



— Similar to stacked bar chart

⑩ Chloropeth Map



— Irrelevant concept for exploring performance since it focuses on geographical location, rather than academic performance

CATEGORIZE

GPA-related

①, ⑤, ⑥

Grade-related

③

Attendance & Assignment

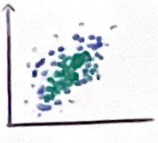
②, ④

COMBINE & REFINE

①, ⑤ can be combined into a bar chart with line graph on the same x-axis to show the two variables (GPA, Time)

③ can be refined as a data filter instead.

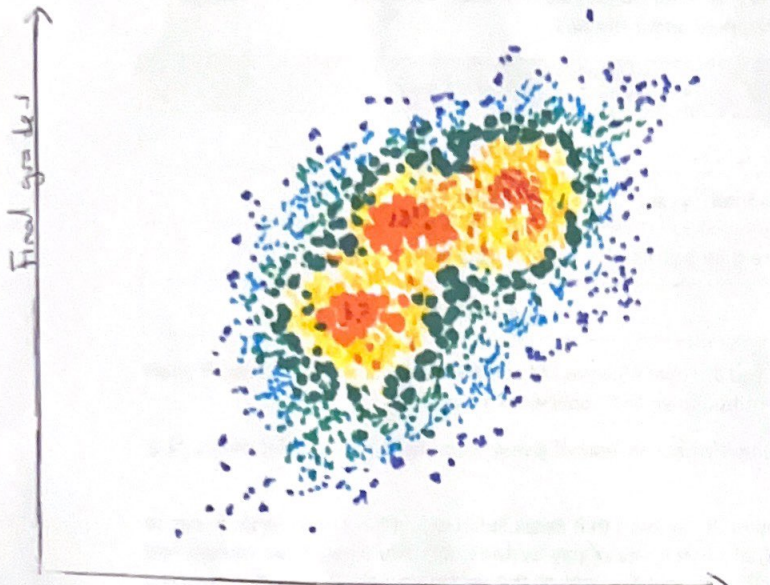
②, ④ can be be refined where each data point represents a student, and the x-axis shows the attendance rate while the y-axis shows the final grade.



LAYOUT

Course filter
- ☐ Math
- ☐ Reading
- ☐ Writing

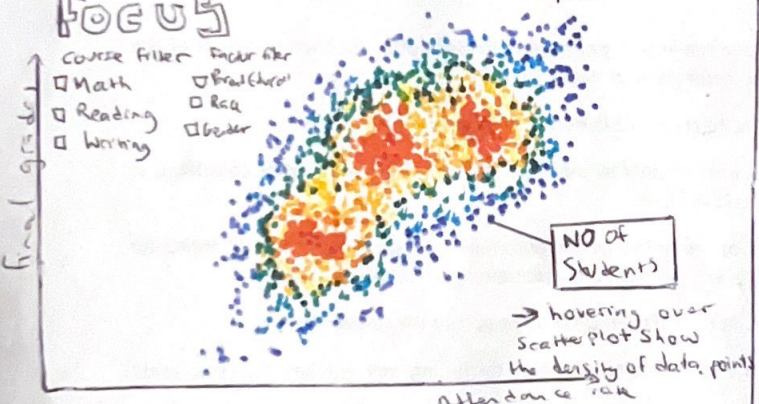
Factor filter
- ☐ Parent Education
- ☐ Race
- ☐ Gender



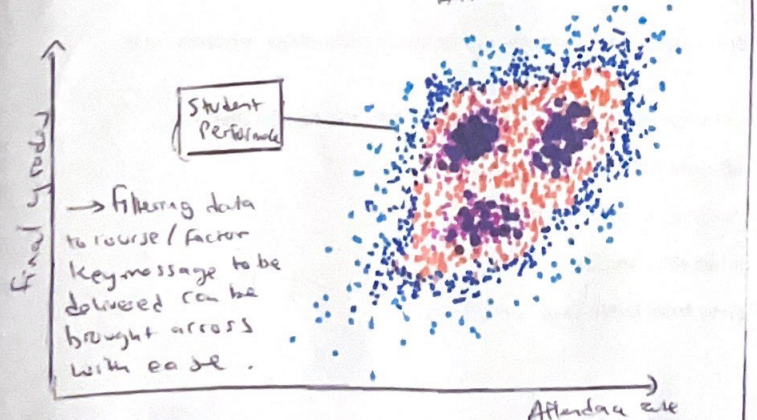
FOCUS

Course filter
- ☐ Math
- ☐ Reading
- ☐ Writing

Factor filter
- ☐ Parent Education
- ☐ Race
- ☐ Gender



→ hovering over scatterplot show the density of data points



→ filtering data to course / factor key message to be delivered can be brought across with ease.

INFO

Title : FIT5147 Data Visualisation project

Author : OLANWALE LAWAL

Date : 13/05/2023

Sheet number : 2

OPERATION

→ Users can hover over each data point to see the details of that students performance.

→ Users can use filters to narrow down the dataset based on the criteria.

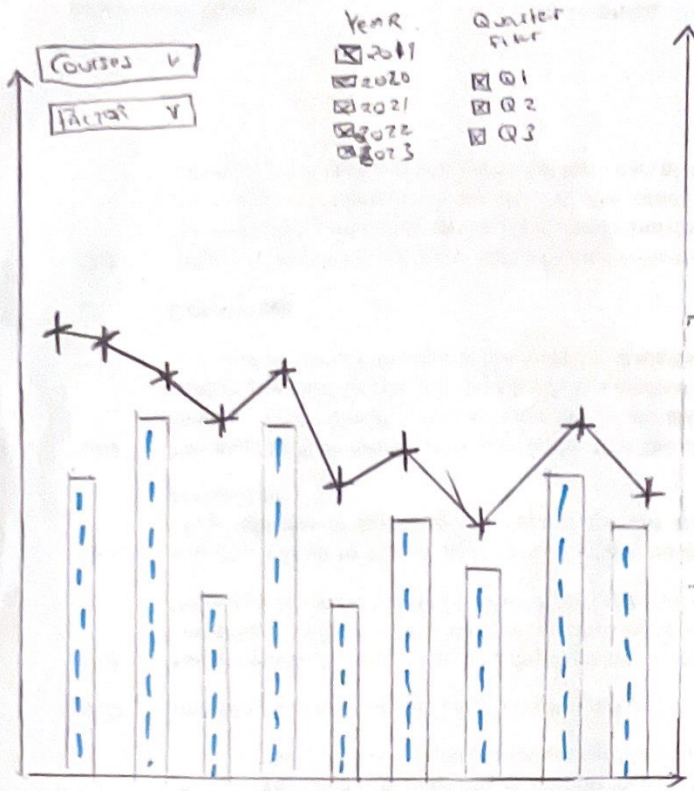
- Users can also zoom in on specific regions or plot to see more detail

DISCUSS

+ve
- Combination of a scatter plot & heatmap allows users to see the density of data points which can help to identify patterns and trends in the data.
- Scatterplot allows users to see the individual data points and examine the relationship between attendance rate & final grades.

-ve
- Design may become cluttered with a large dataset and it may be difficult to identify specific trends without additional data visualizations

LAYOUT



INFO

Title: FIT5147 Data Visualisation Project

Author: OLAWALE LAWAL

Date: 13/5/2023

Sheet number: 3

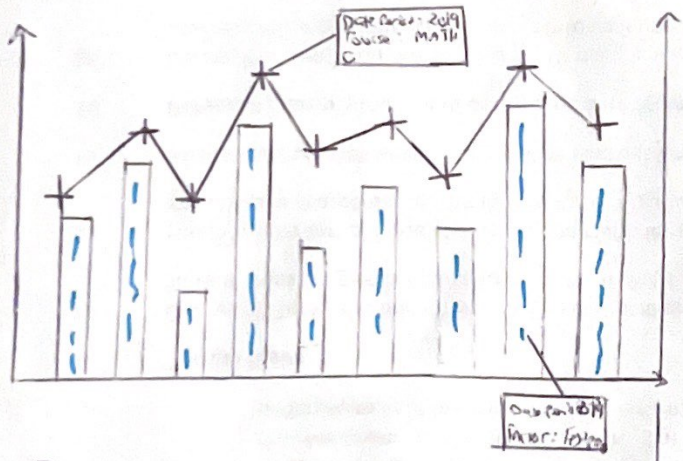
OPERATION

→ Users can filter the data to the desired year and Quarter

→ Users can filter between different courses using a drop-down menu

→ Users can compare the average grade and attendance rate of different courses using the bar chart ad line chart respectively.

FOCUS



→ Bar chart and line chart will allow users to have an overall grasp of how the average grade and attendance rate of different courses compare across different quarters by filtering the data to just Q1 in the menu filter, the key message can be interpreted with ease.

→ For greater clarity, tooltip will be shown when user hover the bar chart or line chart to display the course / factor

DESIGN

+Ve

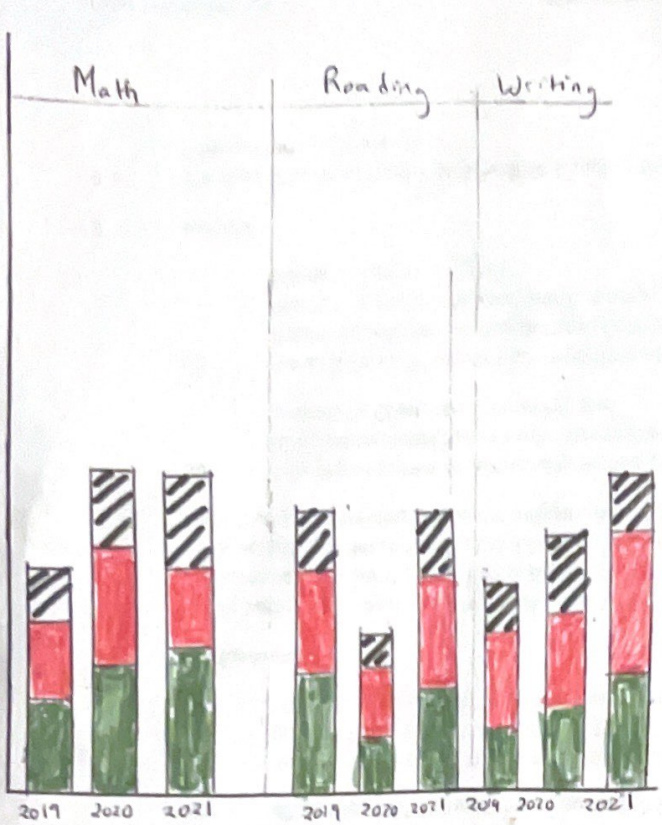
→ Combination of bar chart and line chart helps to provide a clear comparison between the two data factors.

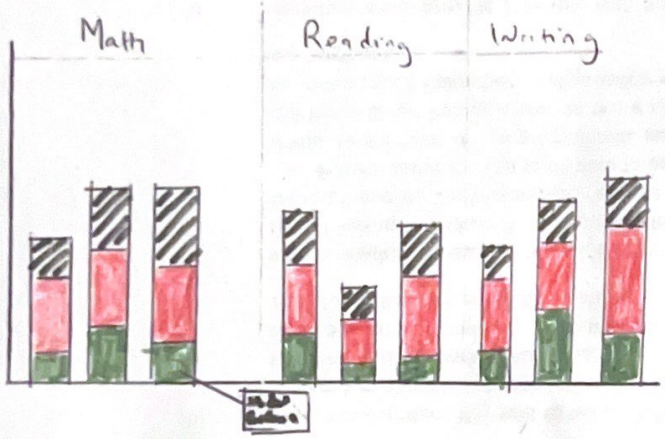
→ The use of a drop-down menu to filter between different courses helps to focus on the selected course.

-Ve

→ the design is not suitable if the dataset includes a large number of courses.

LAYOUT





- X-axis represents the different subjects, and the y-axis represents the percentage score of the students.
- The bars are stacked with different colours representing the different performance levels
- There is also a filter available to select the desired year

INFO

Title: FIT5147 Data Visualization Project

Author: OLAWALE LAWAL

Date: 15/5/2023

Sheet number: 4

OPERATION

-> Users can filter the data based on the year they want to view.

-> Users can hover each bar to see the exact percentage score for each subject and performance level

-> Users can click on a specific bar to highlight it and compare it with the rest of the bars in the chart

DISCUSS

+ve

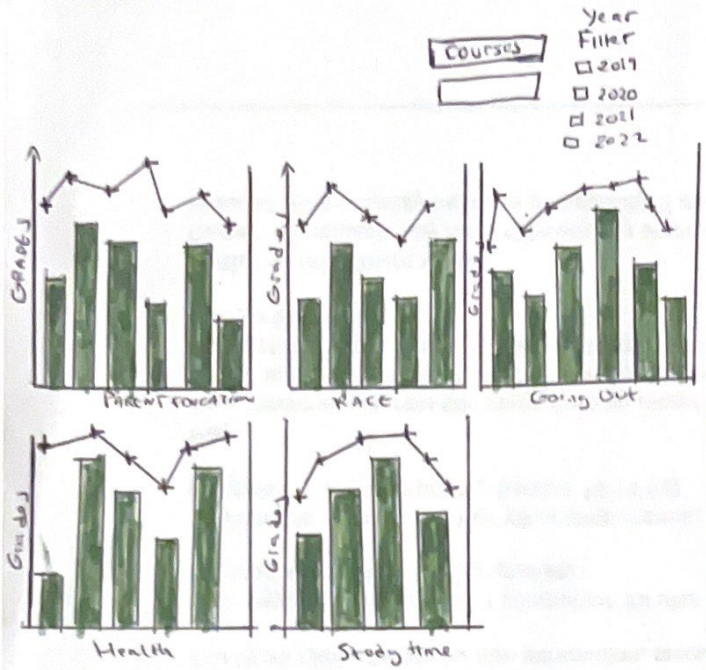
-> It communicates the key message of comparing the performance of students across different subjects and performance levels

- The different colours used to represent the performance levels make it easy for users to identify which students are performing above or below

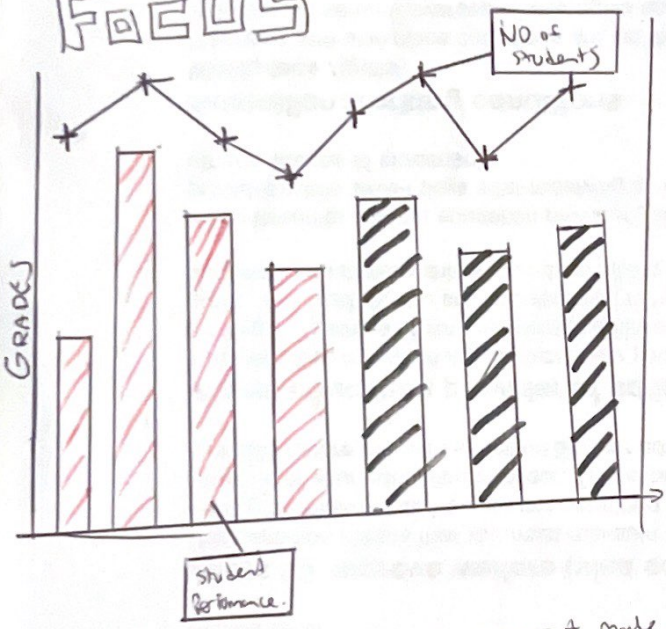
-ve

- It may be difficult to compare the performance of students across different years.

LAYOUT



FOCUS



-> Colour of bars chosen to represent male and female

-> Upon filtering, individual bars will be highlighted to another colour

-> Tooltips will be shown when user hovers over the bars or lines

INFO

Title: FIT 5147 Data Visualization Project

Author: OLAIWALE

Date: 15/05/2023

Sheet number 5

OPERATION

-> Drop down menu that allows user to filter between courses and year filter will highlight the bars and line to another colour.

-> Hovering over bars and line symbols will show the tooltip showing number of students and performance

DETAILS

-> A Combined dataset from Kaggle for student performance and a dataset from UCI Machine for Student performance in Math & portugese.

DEPENDENCIES

-> TABLEAU

ESTIMATES

-> Cost: NIL

-> 30/5/2023: line & bar graphs

-> 1/06/2023. User interactions
- drop-down menu
- filters

-> 2/06/2023 - testing.