SEVA/SATVA COURSE ANALYTICS

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Contents

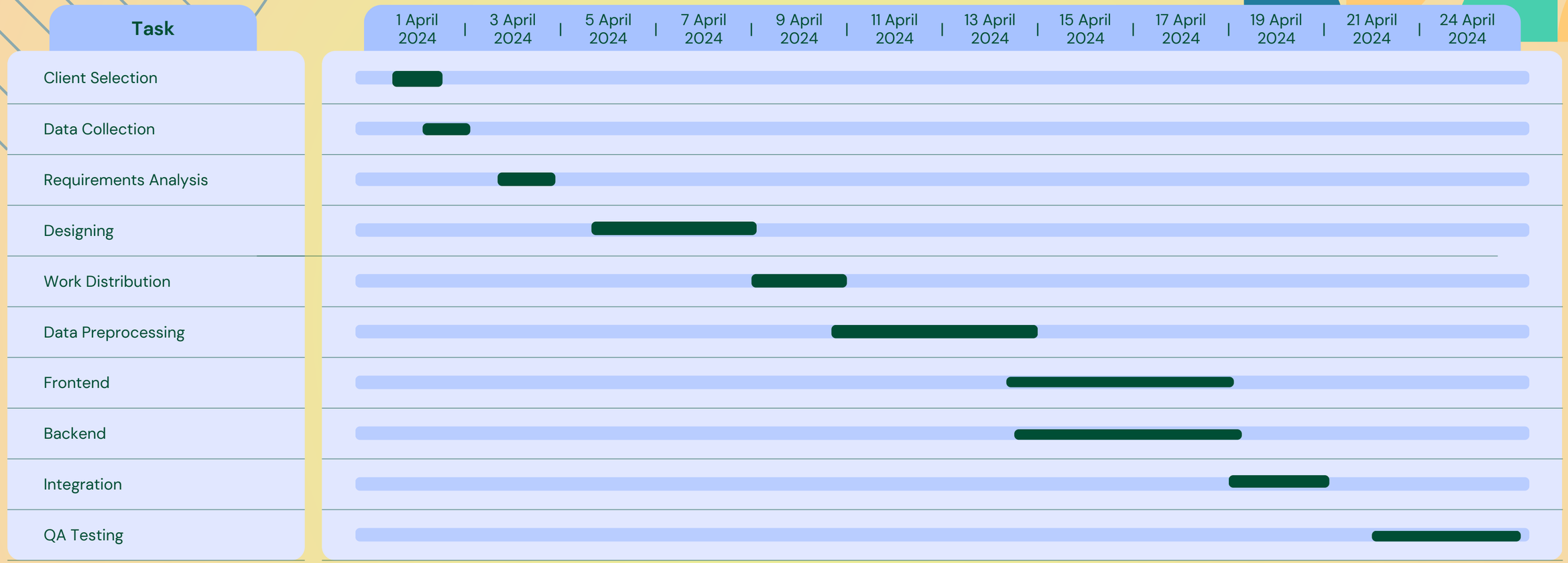
Problem Statement

Analyzing the various Seva/Satva courses offered over the semesters to understand the popularity of the courses among students by leveraging data analytics to enhance the overall learning experience for students and optimize course offerings.

Proposed Solution

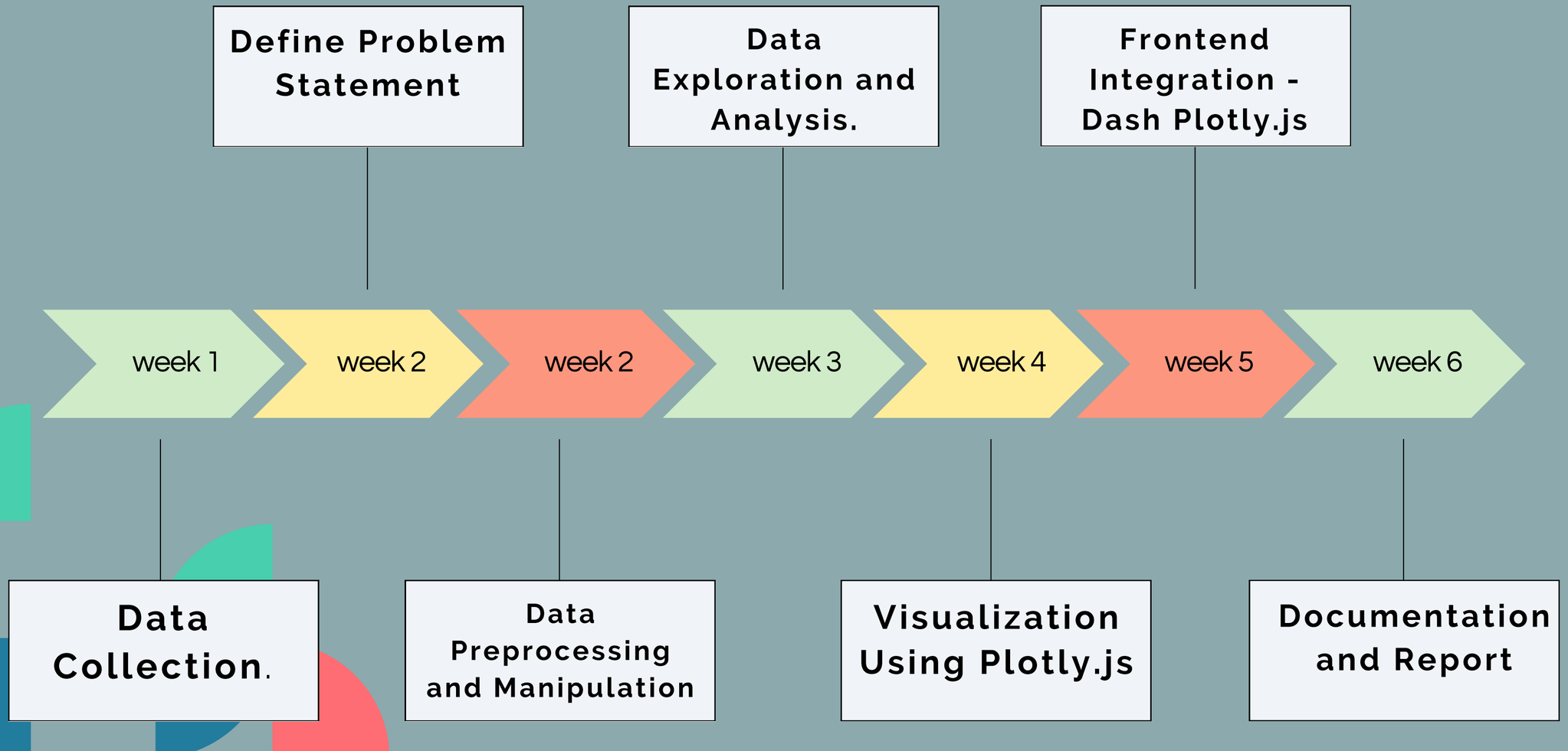
- Segregate the courses offered according the development of the student through them.
- A dashboard to analyze the popularity of the courses across different demographics eg. course category, branch and semester.
- Create student profiles showcasing their overall enhancement in different aspects

Gantt Chart


Task
1 April 2024
3 April 2024
5 April 2024
7 April 2024
9 April 2024
11 April 2024
13 April 2024
15 April 2024
17 April 2024
19 April 2024
21 April 2024
24 April 2024
Client Selection
Data Collection
Requirements Analysis
Designing
Work Distribution
Data Preprocessing
Frontend
Backend
Integration
QA Testing

Project Timeline

Crafting a dynamic dashboard leveraging Seva course data, transforming insights into actionable decisions for enhanced performance and impact..



WORKFLOW

Data Processing

- Converted semester column to numeric datatype from string.
- Added all sheets into a single CSV for each excel file.
- Removed irrelevant columns to finally get our schema as:
  EMAIL NAME BRANCH SEM COURSE
- Converted names to title case
- Normalized course names and correcting all spelling mistakes.
- Dropped rows with missing values
- Deleted duplicated rows and resolved conflicts.

COURSE CATEGORIZATION

We categorized the courses in the following categories in terms of the student's development area:

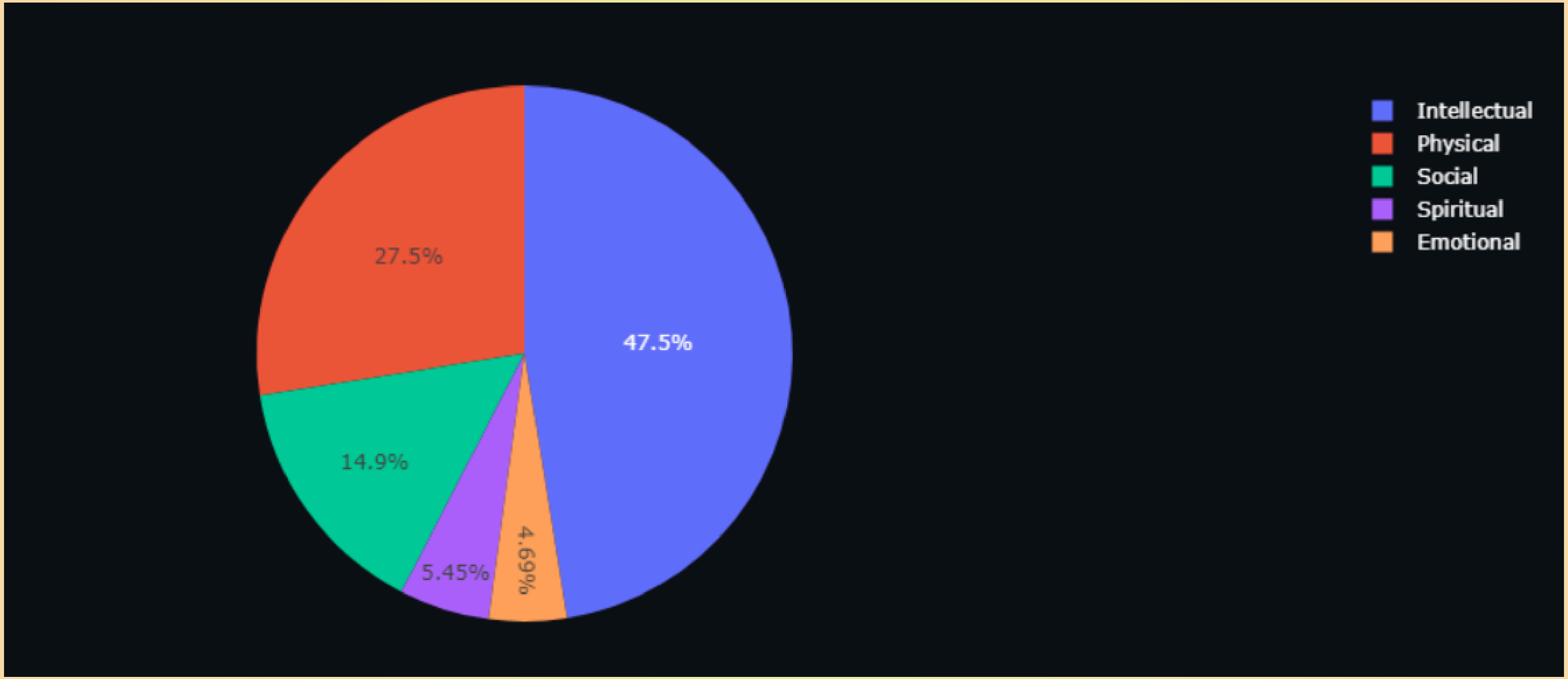
- Physical (Running, Staircase Climbing)
- Emotional (Jeevan Vidya, IPD)
- Spiritual (Yog Vidya, Pran Vidya)
- Intellectual (Design Thinking and Read a Book)
- Social (Abhyudaya, Working with NGO)

FRONTEND

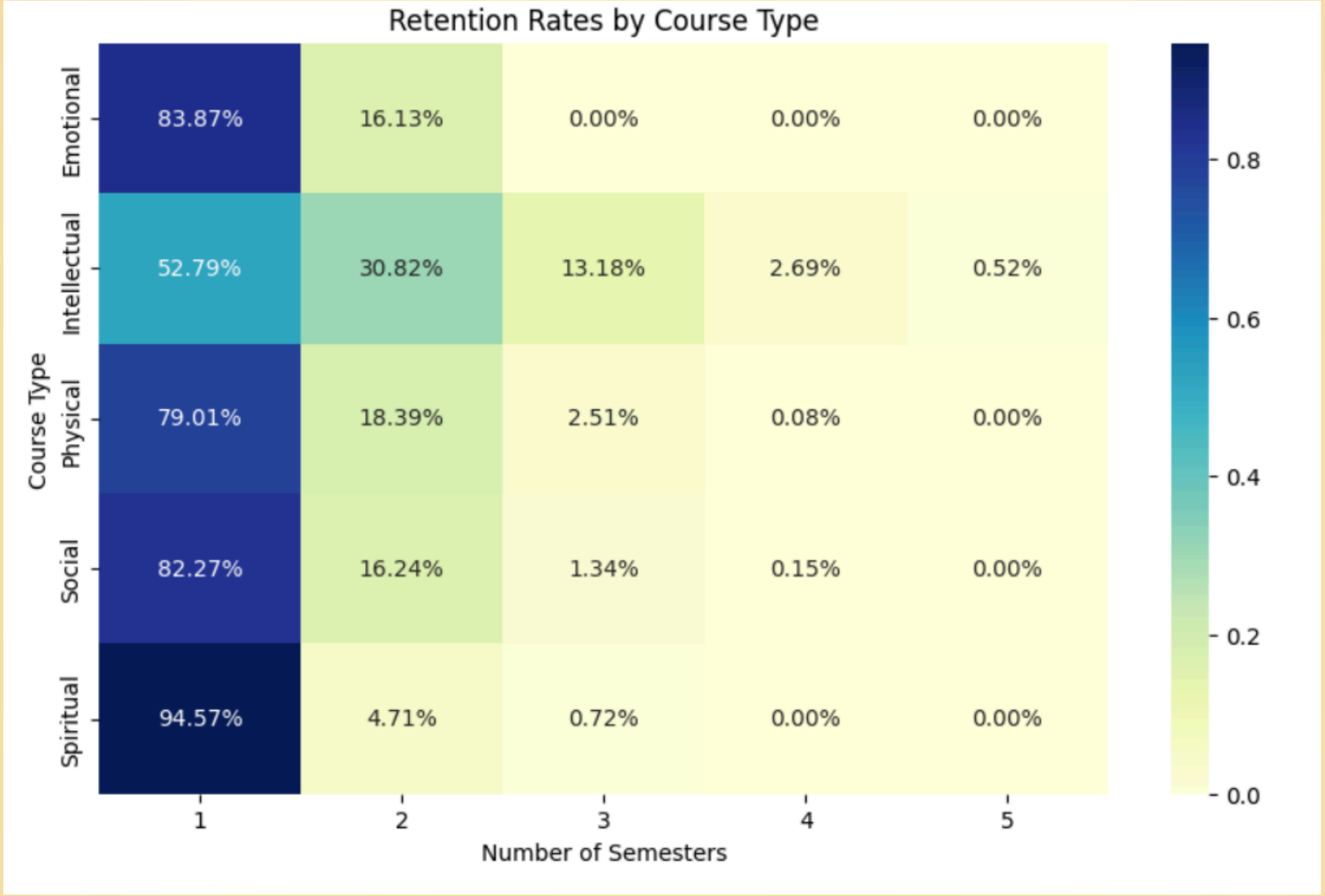
- Created visually appealing, responsive, and user-friendly web application by using human-machine interaction guidelines.
- Utilized HTML, CSS and Dash Bootstrap Components to build the frontend design
- Usage of buttons and drop down lists for ease of use.
- Using familiar navigations to make the website user-friendly.

ANALYTICS

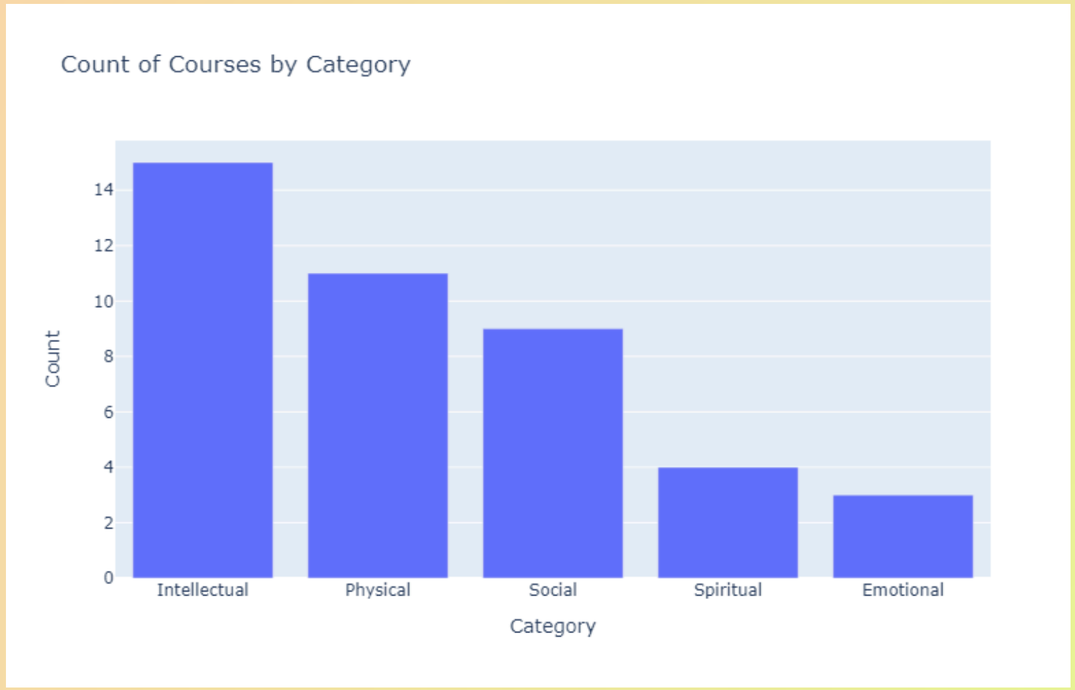
- Identified key metrics for assessing course popularity
- Utilized data visualization tools to develop an interactive dashboard
- Utilized sunburst chart, horizontal bar graph and line chart to get various insights.

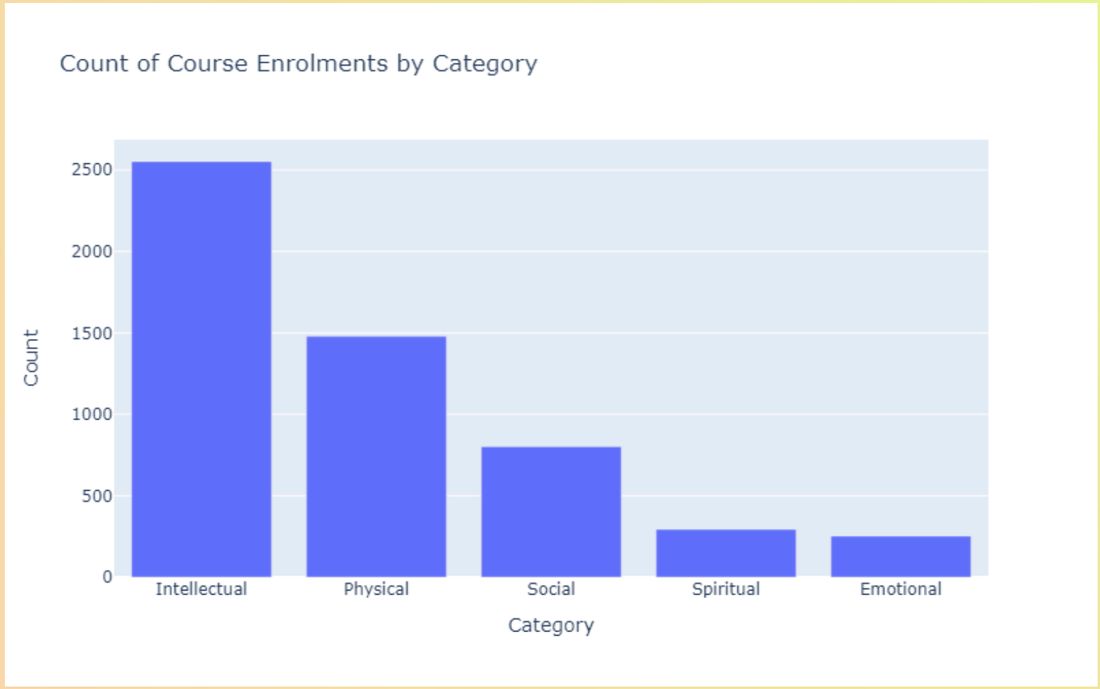


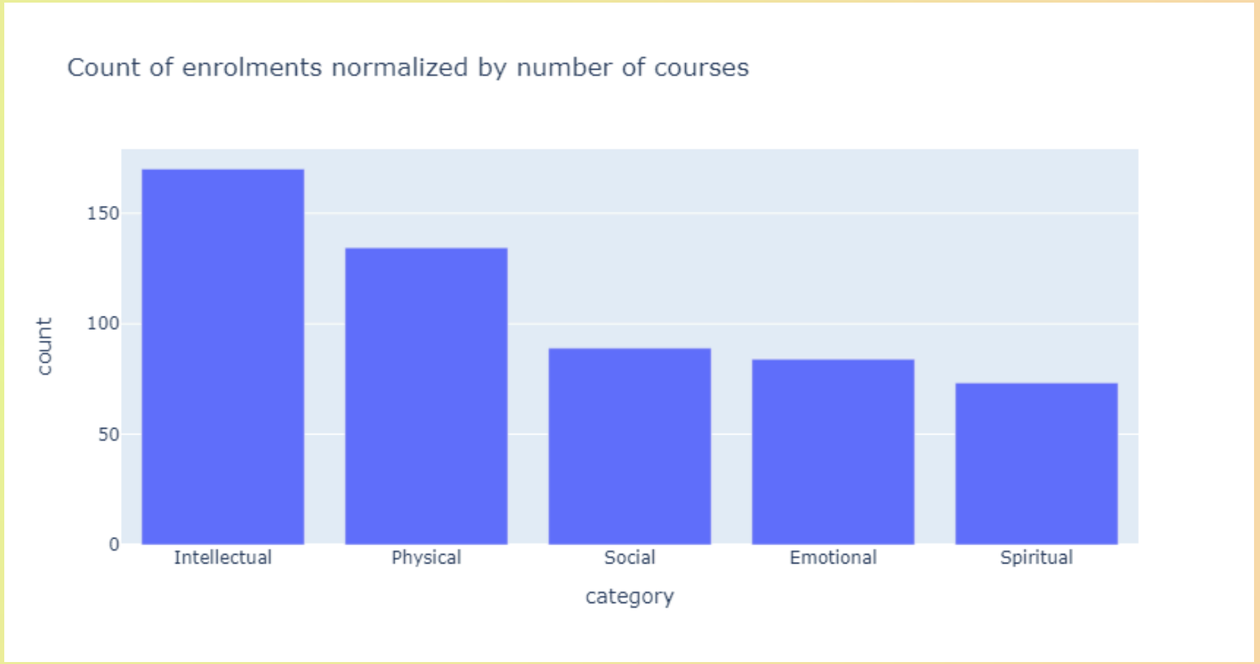
Pie chart of student enrollment according to course type



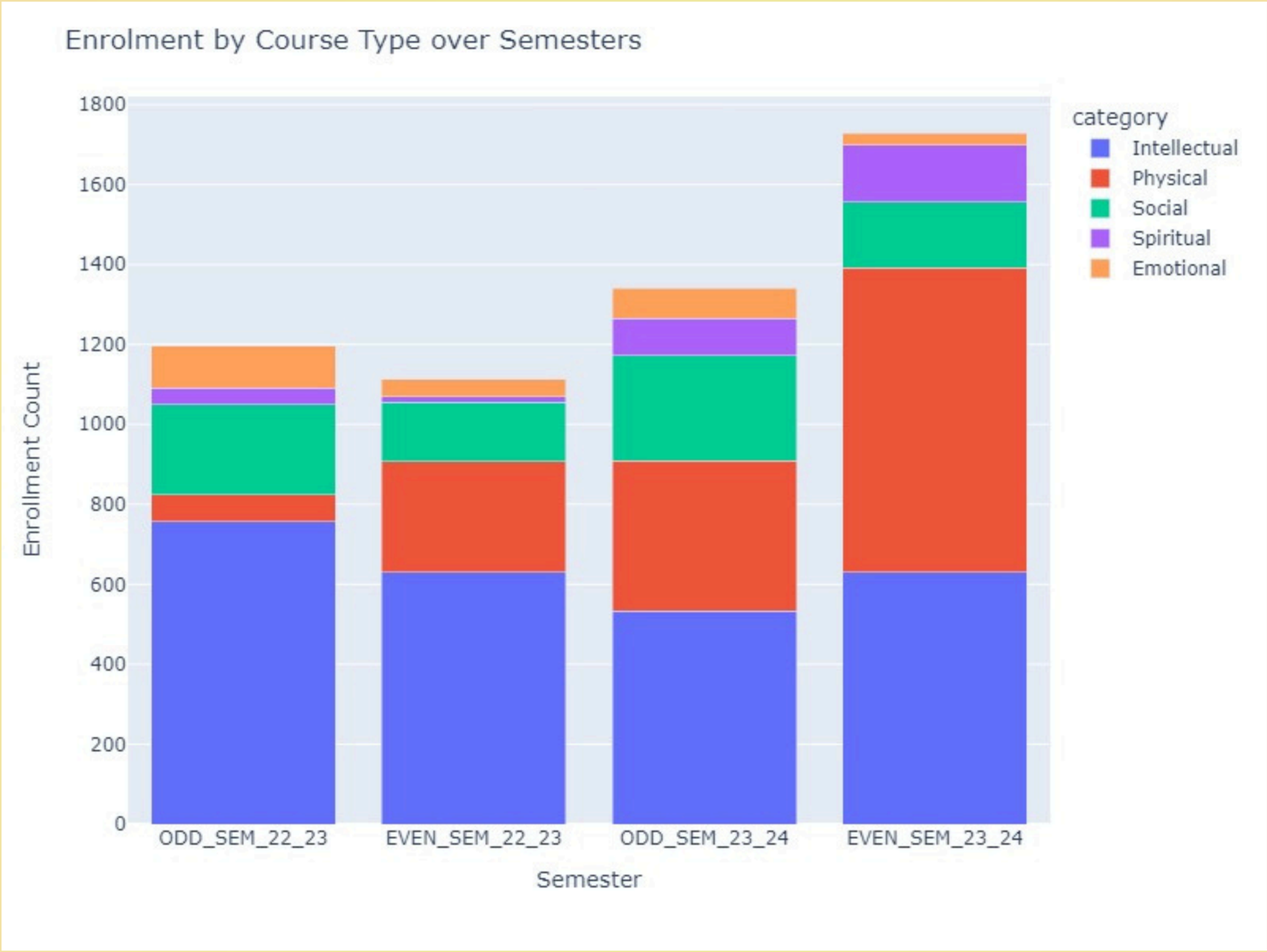
Heat Map of course type retention rate



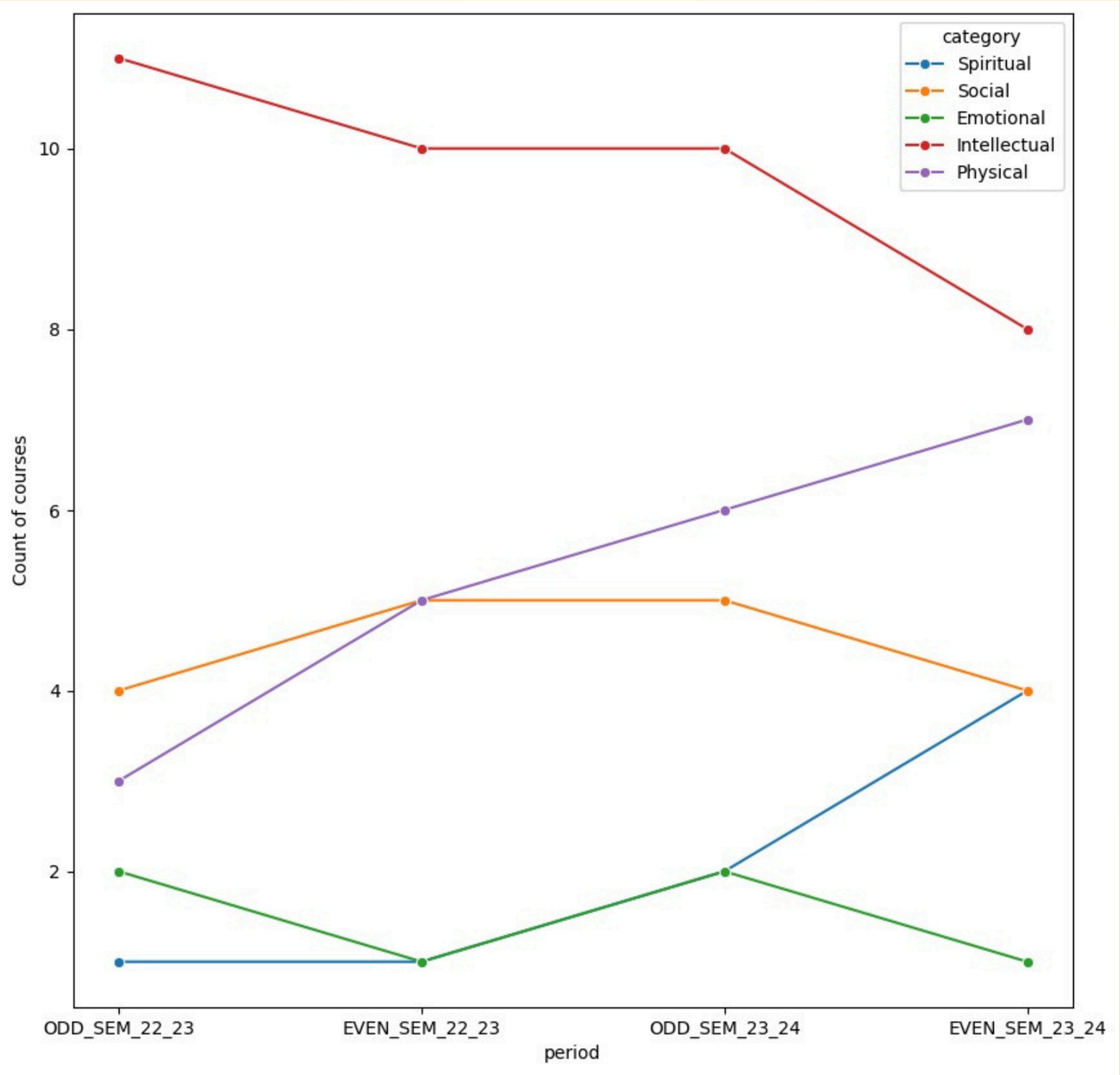




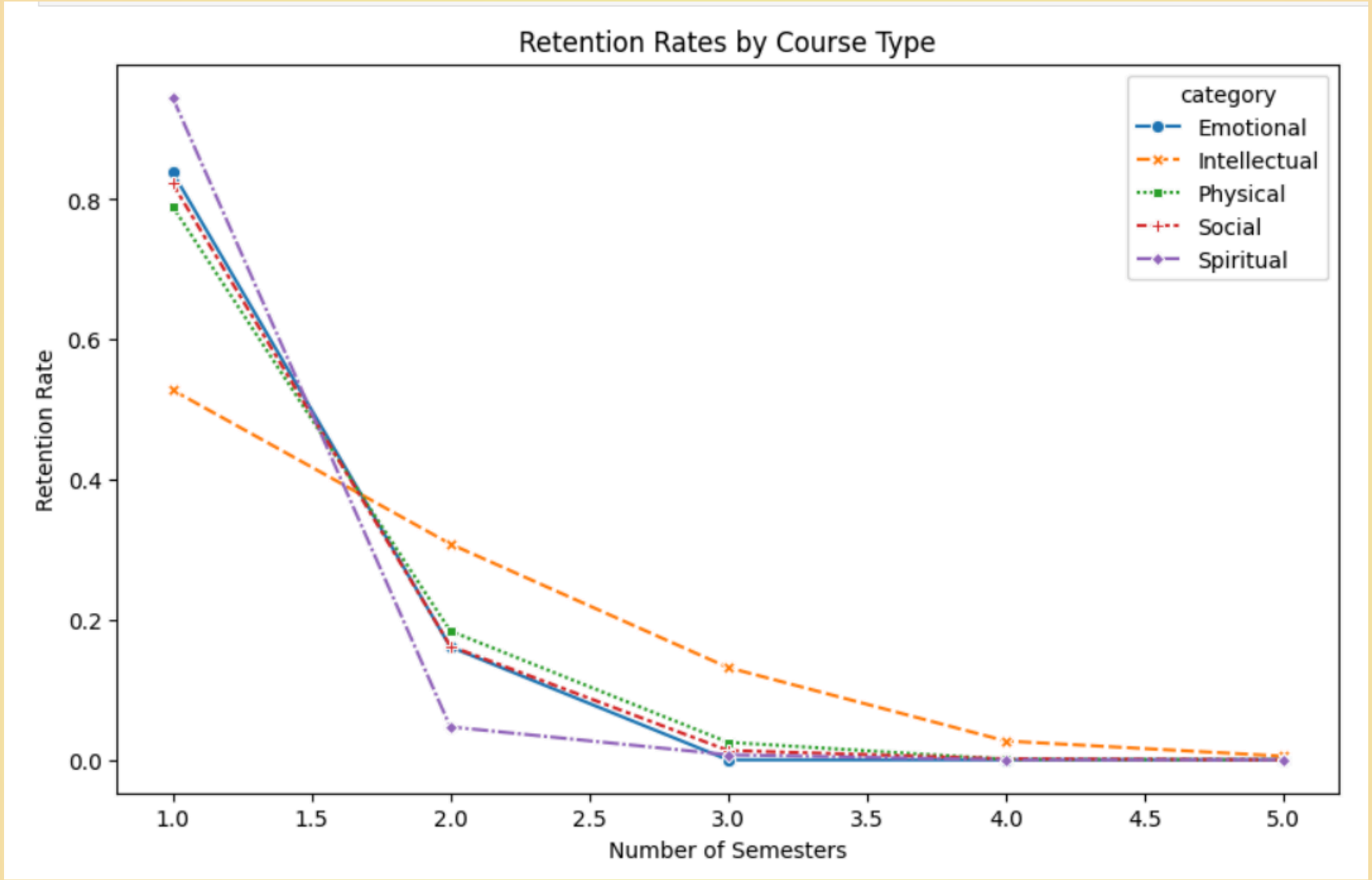
Bar Graphs for enrolments



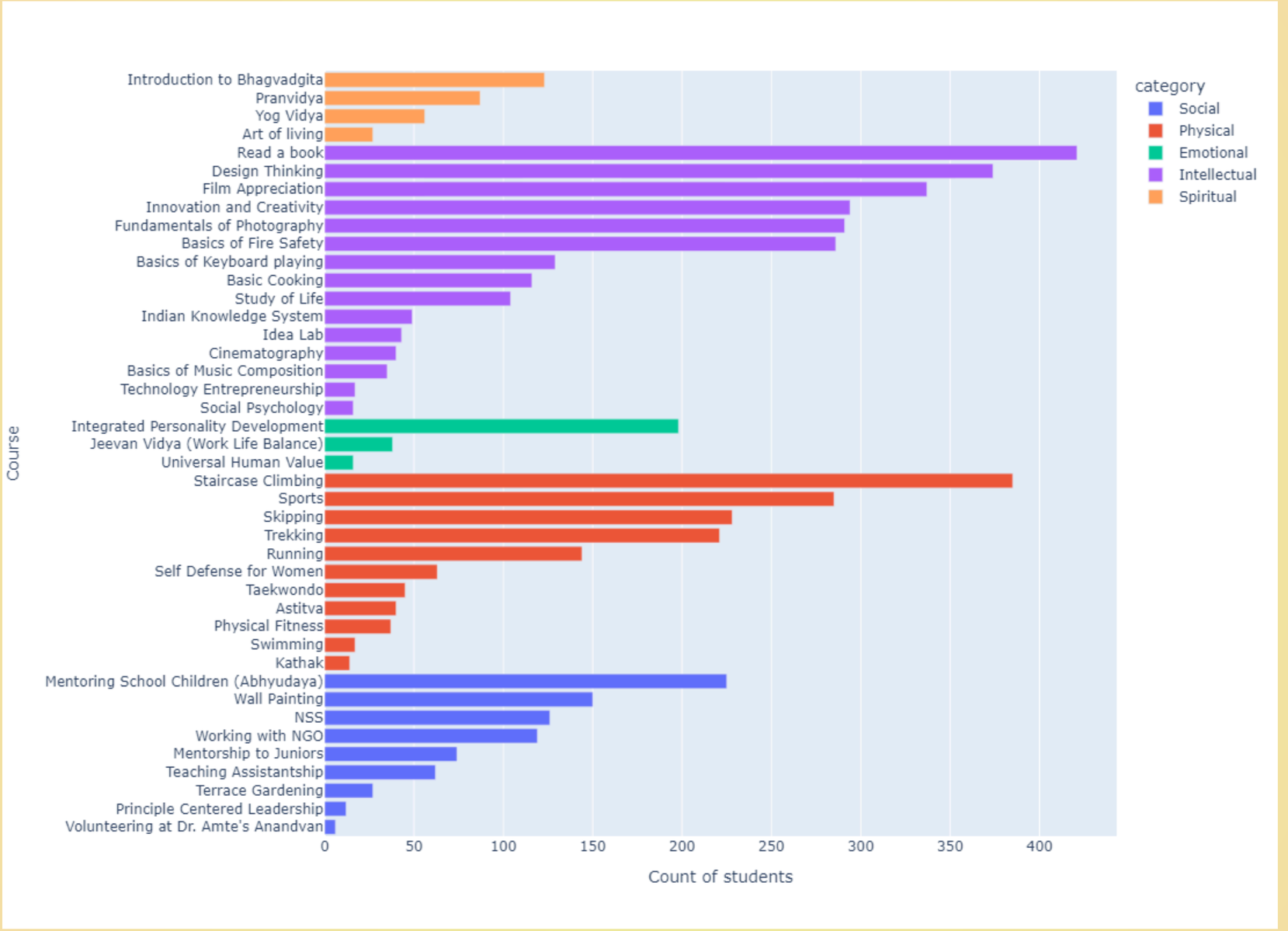
Stack Chart for Course enrolments



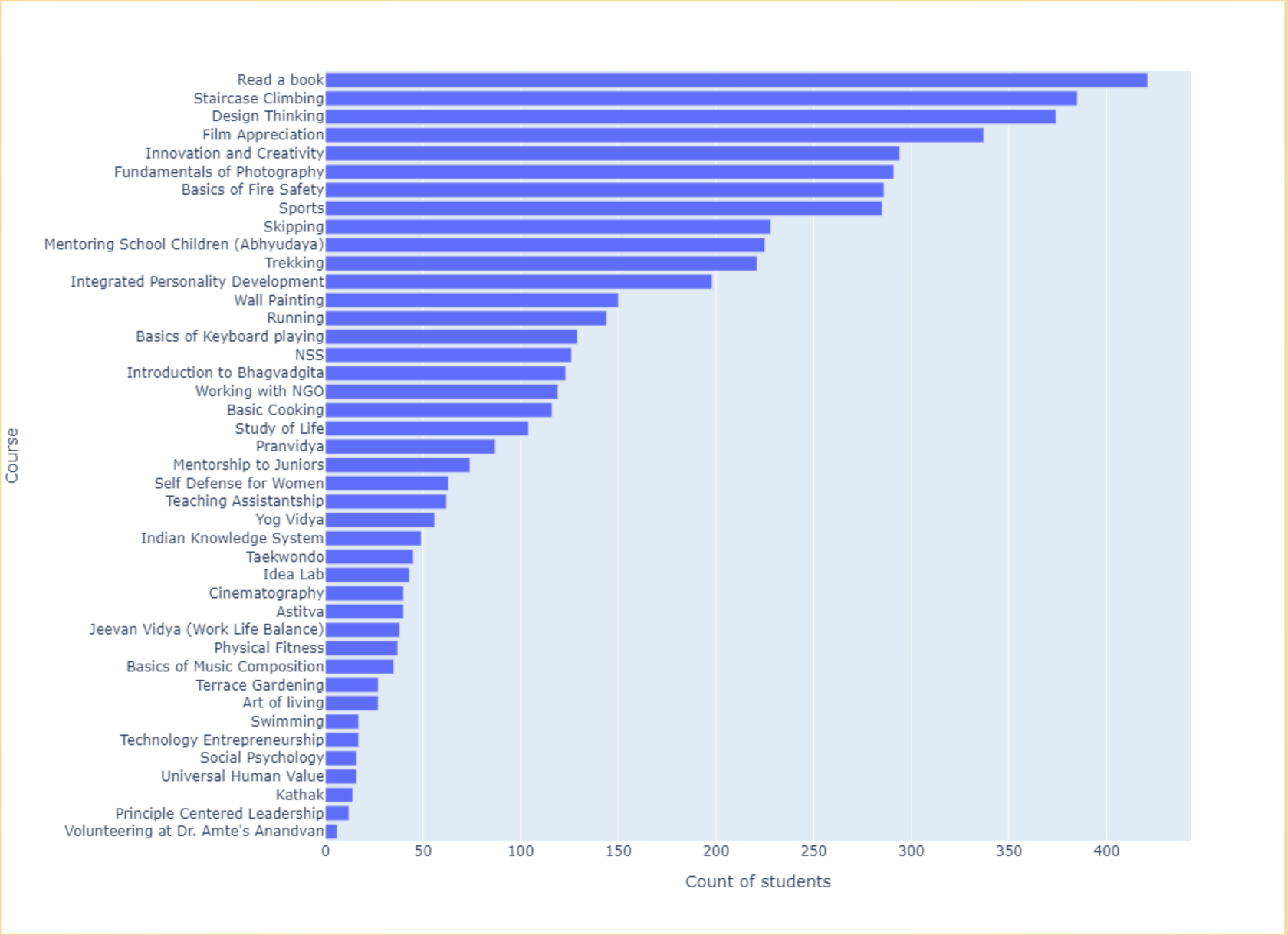
Count of courses by category over the semesters



Line Graph of retention rates over the semesters



Count of students for different courses according to category



Count of students for different courses

KEY FINDINGS

- Intellectual Courses have a higher retention rate overall. Students are more likely to repeat intellectual courses.
- There are very few courses that focus on emotional and spiritual development of students, which naturally leads to low enrolment rates. For true holistic development the number of these courses must be increased.
- Enrolments for physical courses have signifactly improved over the past four semesters. Four semesters ago, the enrolment in intellectual courses was seen to be the most whereas in the current semester students are more inclined towards physical courses.

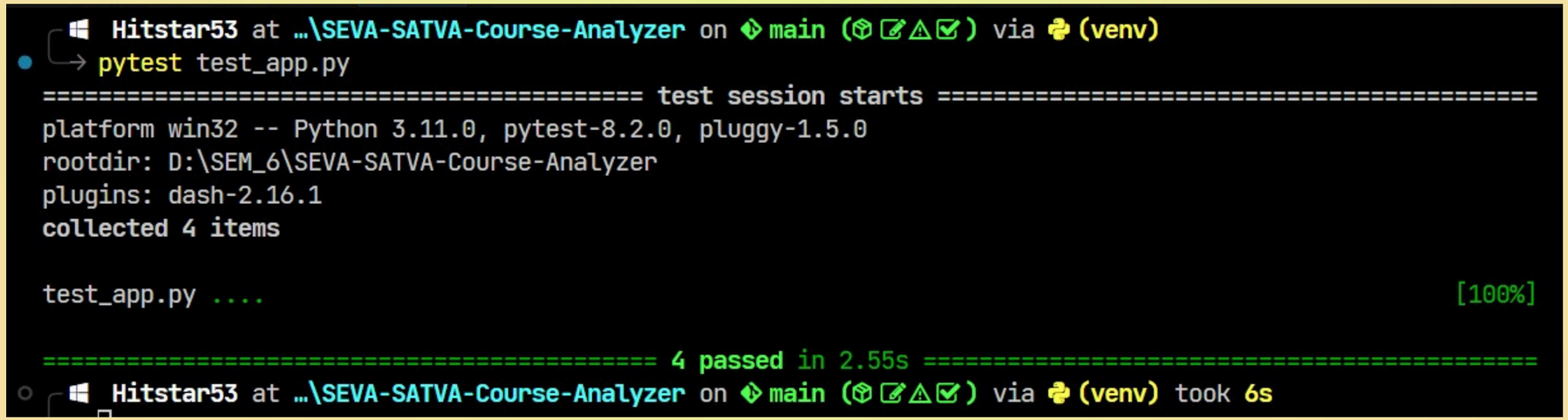
BACKEND

- Database: AzureSQL database selected for scalability, reliability and performance.
- The cloud based nature allows seamless integration with other Azure services
- Utilized Plotly using Flask for backend infrastructure.

TESTING

We performed tests on functions in our project which include:

- Function to render course and student details data from database
- Function to update the details



BENEFITS TO CLIENT

- **Informed Decision Making**
  Our project enables clients to make an informed decision to optimize course offerings and enhance the overall learning experience.

- **Improved Course Planning**
  Clients can identify areas of strength and improvement within the curriculum, leading to more effective course planning and allocation of resources.

- **Efficient Resource Allocation**
  Our project enables clients to allocate resources more efficiently, focusing investments on courses and initiatives that yield the highest impact and value for students

ANY QUESTIONS?

THANK YOU