

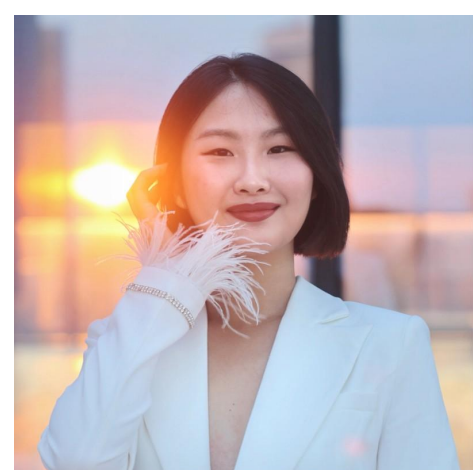
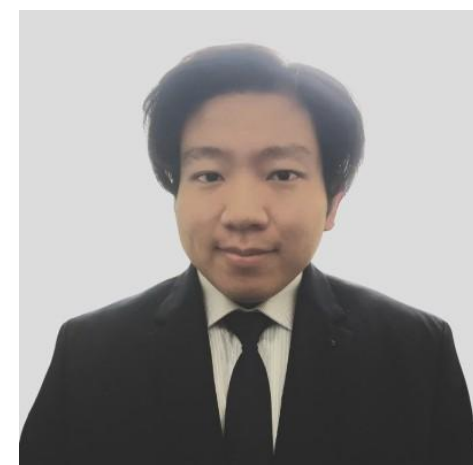


# DS594 Data Visualization X-Lab: ConnectED

## Anshi Mittal, Sam Offsey, Javeria Jalil, Seokhoon Shin



### Meet the Team



### ConnectEd

ConnectED is a community organization that **promotes mental, emotional, and behavioral health** through **coaching, training, program development, and evaluation**.

The goal of this project is to better understand factors impacting student belonging by analyzing social network graph data collected in St. Helen's Oregon.

These insights can help ConnectED create more effective programs to foster belonging in these schools.

### Reflections

- This project highlighted the importance of data quality in the ability to make inferences about a population.
- Additionally, it illustrated the value of considering diverse methods to address the same questions.
- We also gained skills into project scoping and interactive iteration with the client
- Future work could focus on a student facing visualization of the data.

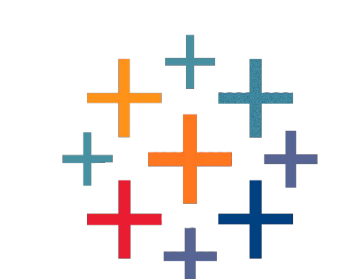
### Project Outline

1. Data cleaning/processing
2. Analyze trends across user stories
3. Create visualizations
4. Share results with client

### Key User Stories:

- **Participation:** What type of students were more or less likely to participate in the survey?
- **Belonging:** What factors were associated with higher self reported belonging scores?
- **Diversity:** Do belonging scores and factors differ across demographic groups?
- **Network Patterns:** Are belonging scores correlated with any network centrality metrics?
- **Mental Health:** How is belonging and connection related to self reported mental health metrics?
- **Barriers to Belonging:** Are there any obstacles that prevent students from belonging.

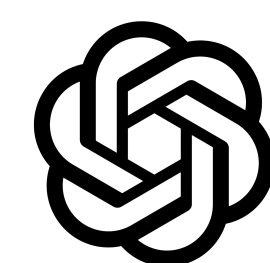
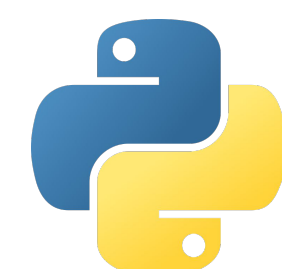
### Tech Stack



matplotlib



NetworkX  
Network Analysis in Python





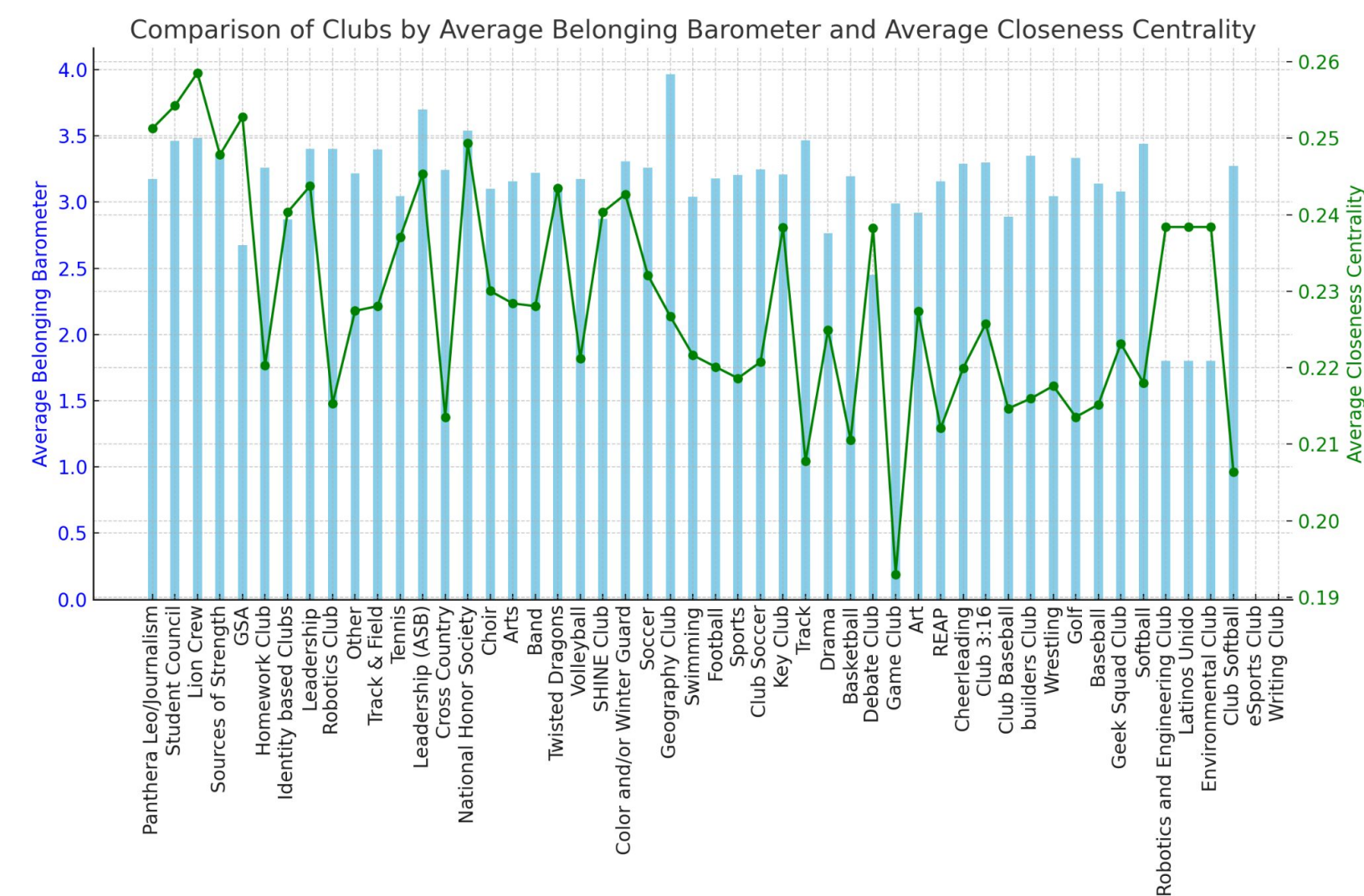
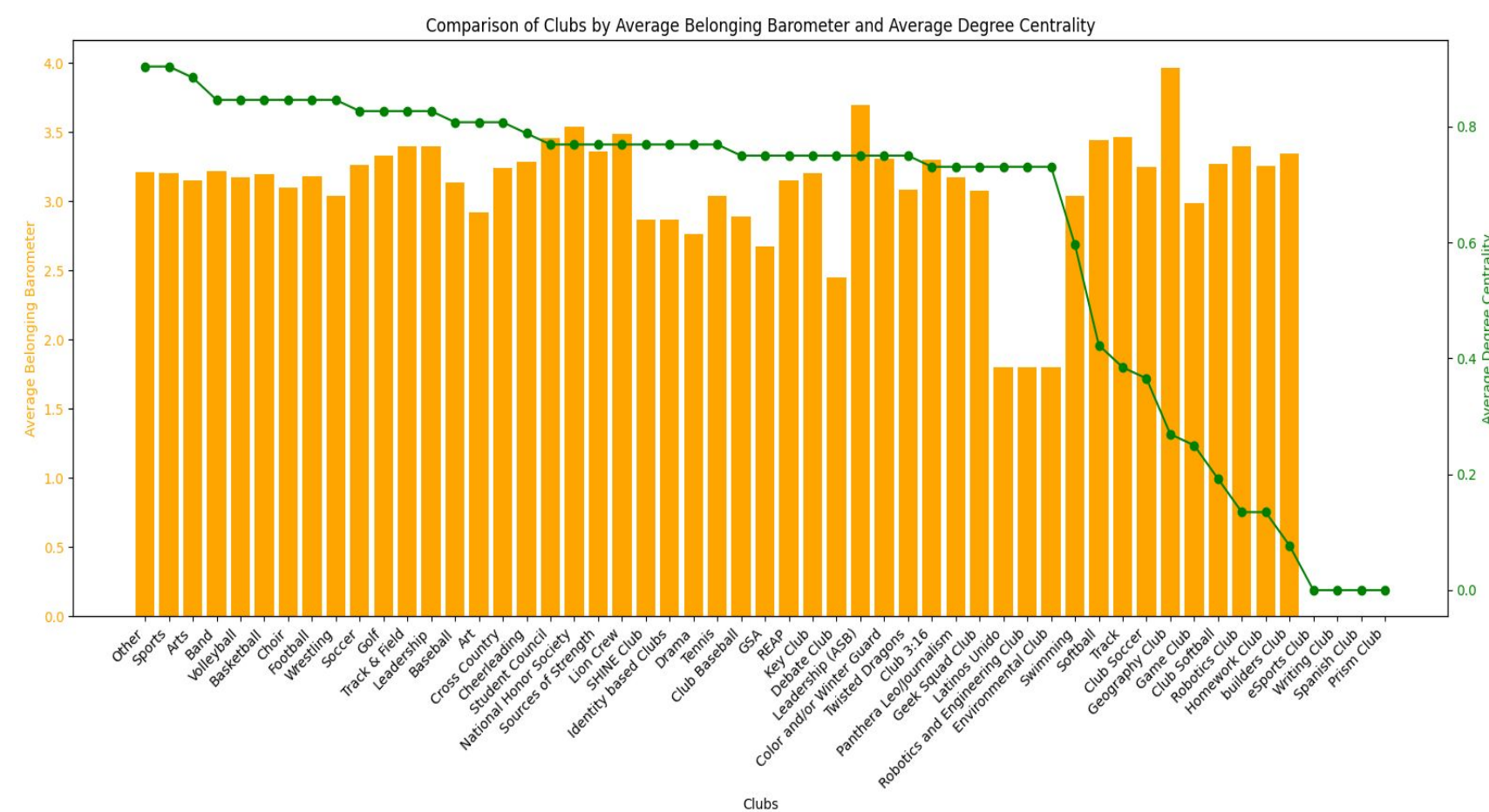


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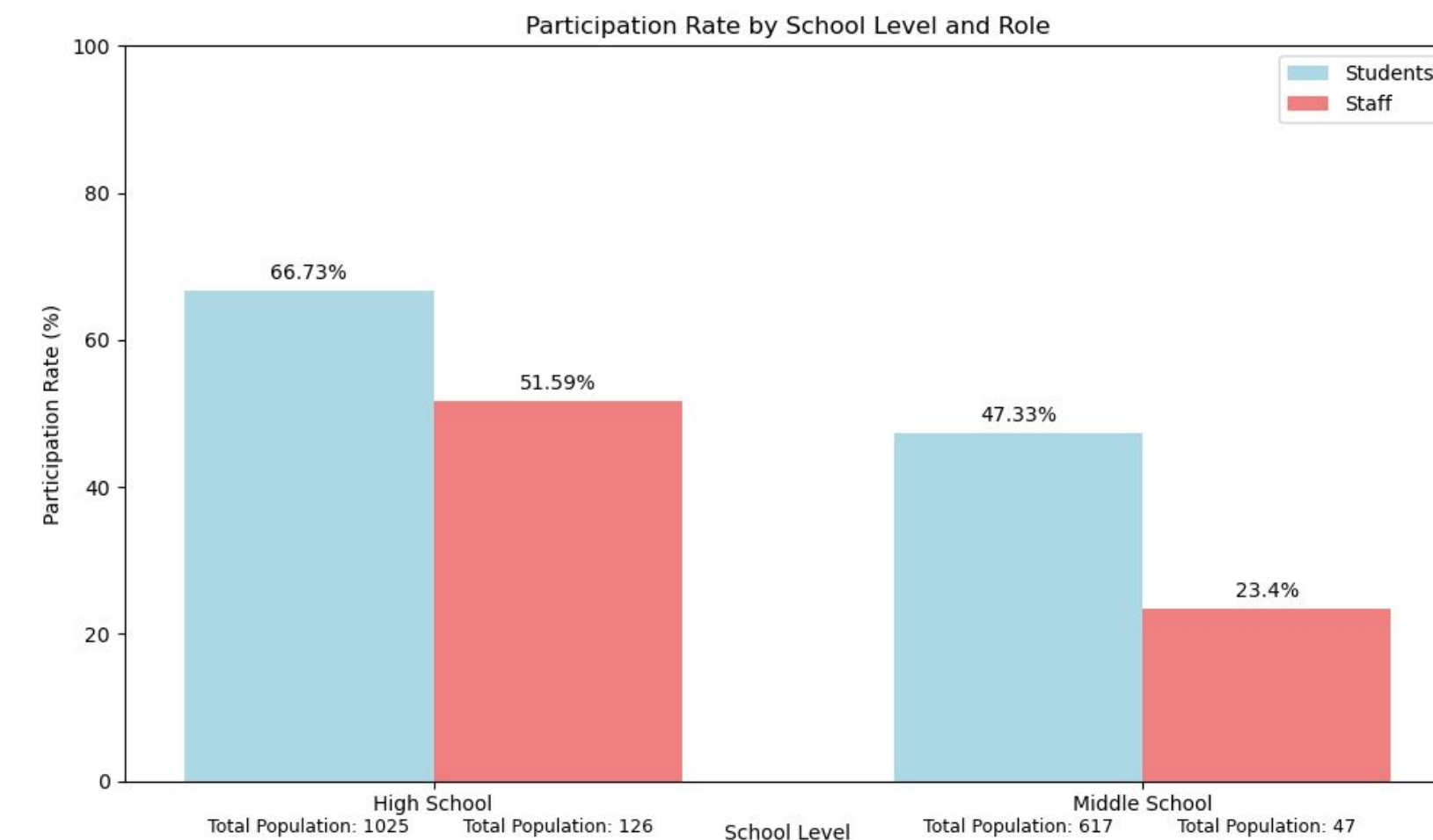
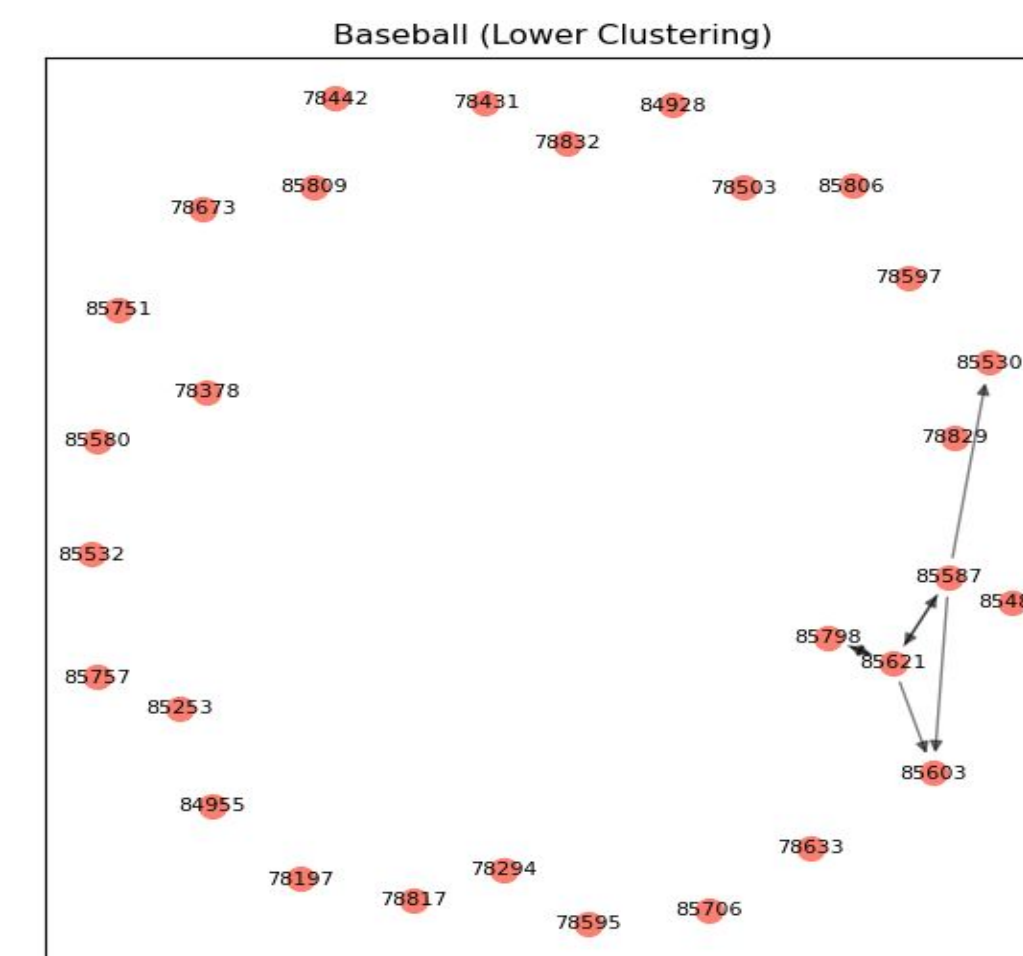
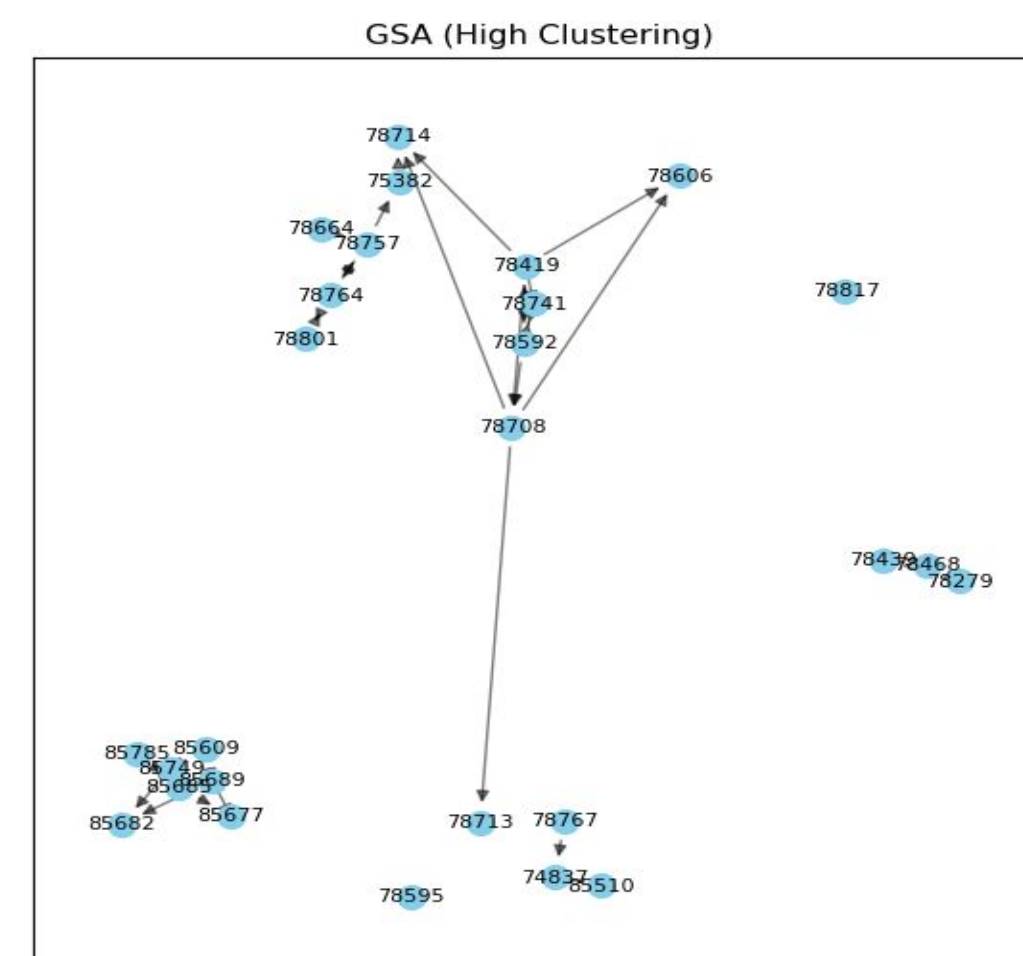
### Social Network Patterns

- Involvement in clubs with most connections does not correlate with higher belonging barometer
- Niche clubs like Writing club or Environmental Club helps gain broader connections to other clubs



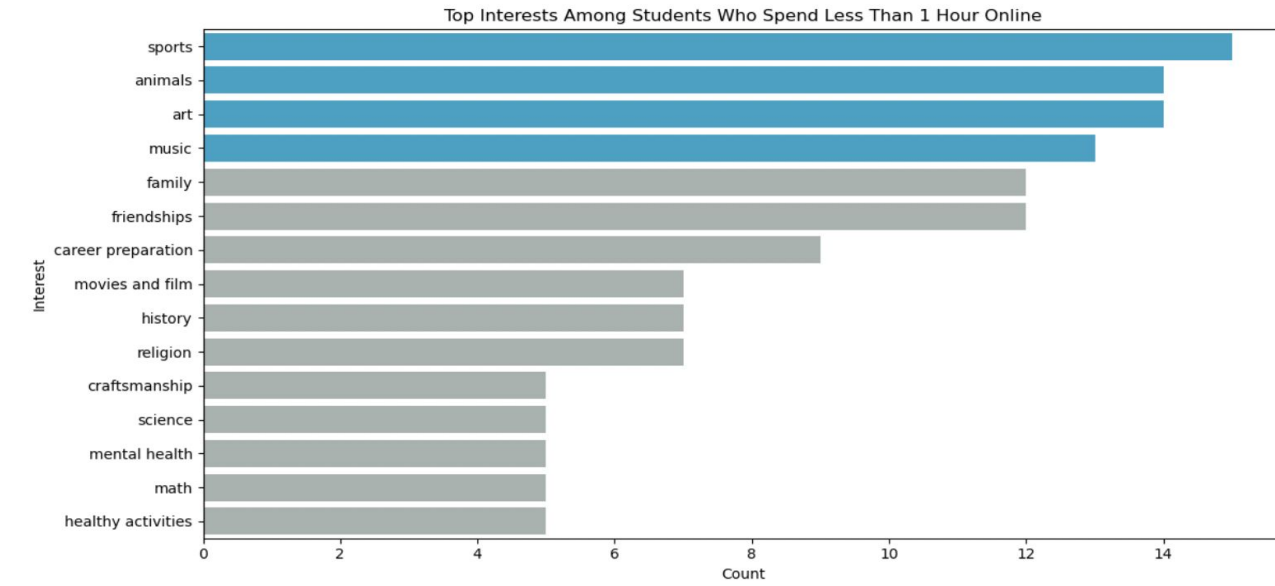
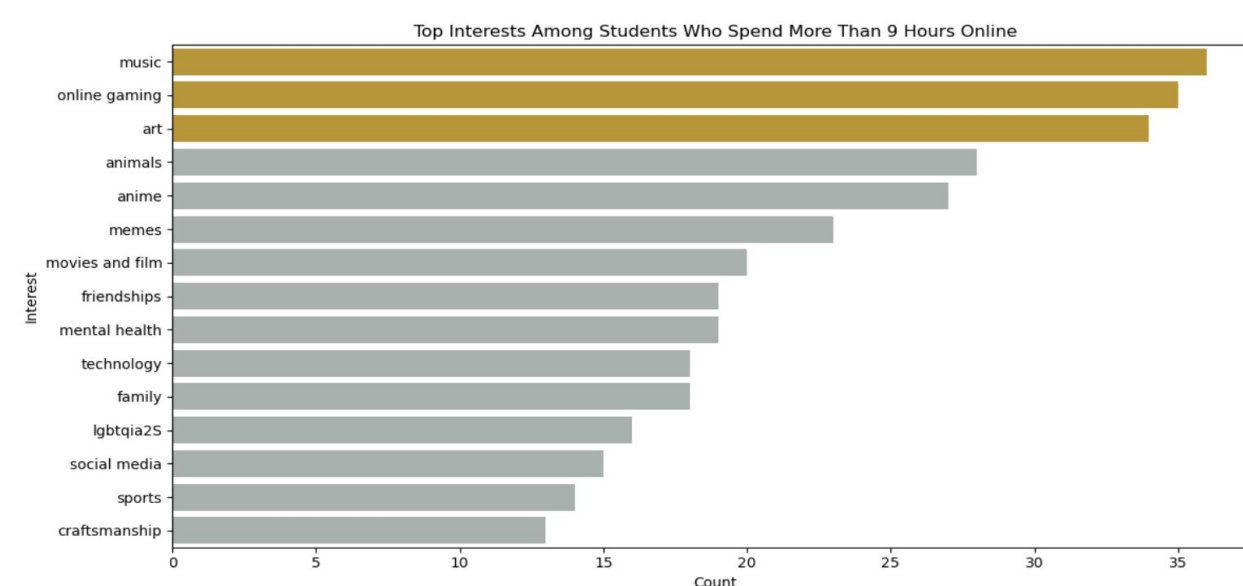
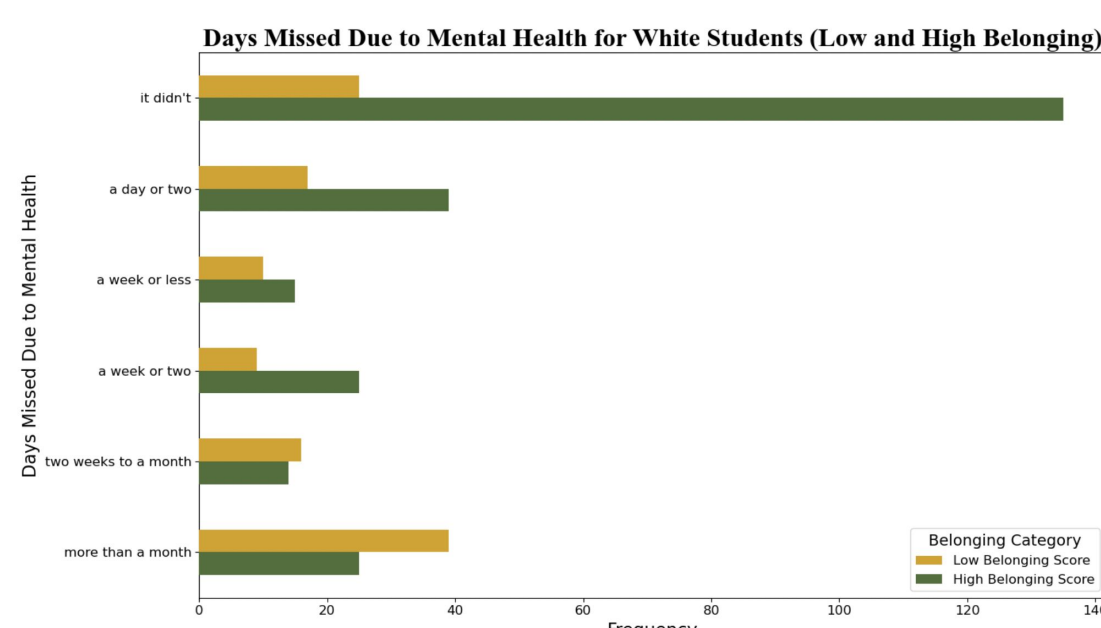
### Participation & Belonging Factors

- Wide range of the population participated, but greater distribution could improve insights on connections
- Belonging barometer and network centrality metrics not always correlated with each other
- High variance across clubs with level of interconnectivity.
- Leadership and identity based clubs had the highest average clustering



### Belonging & Demographics

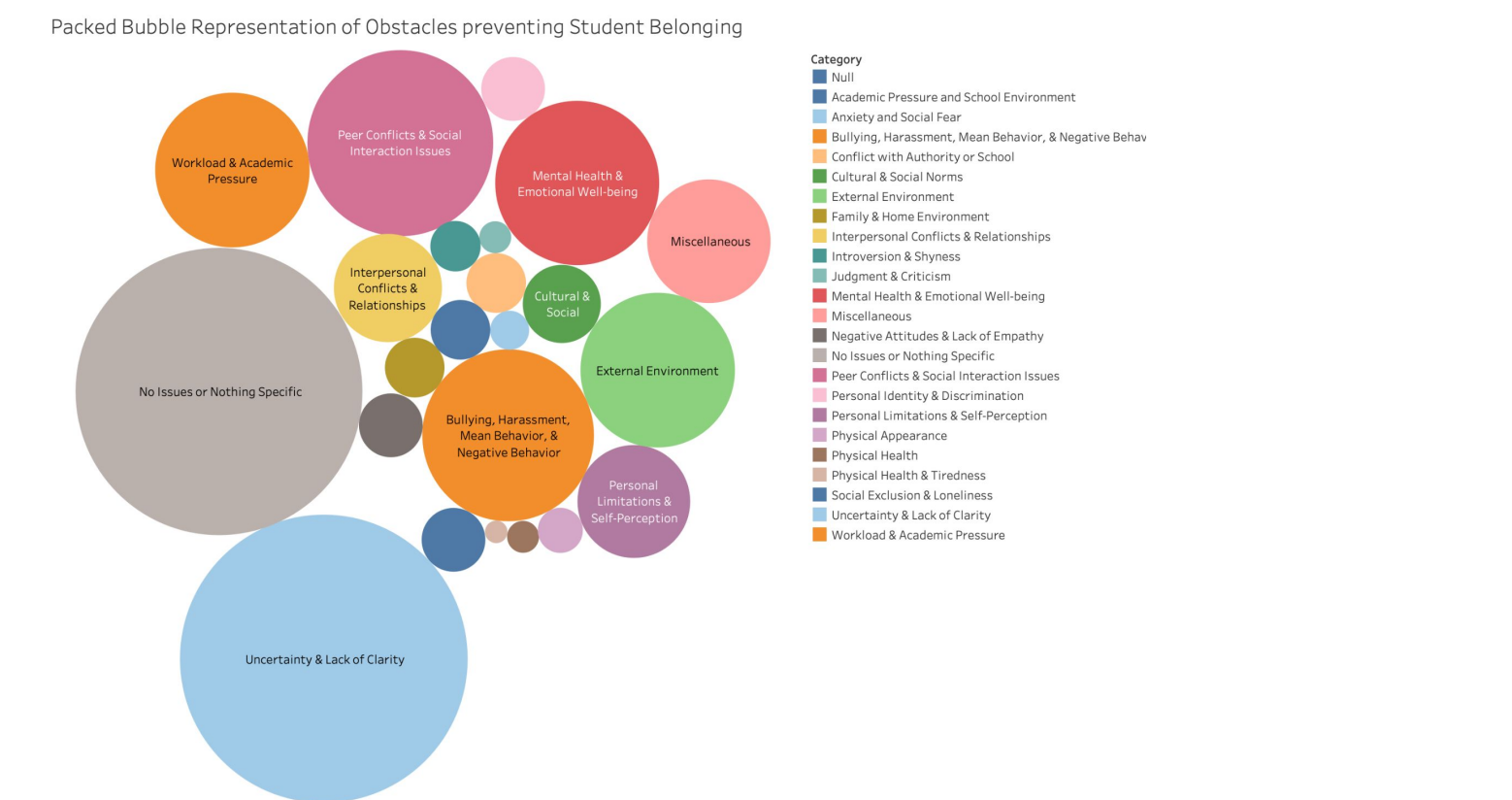
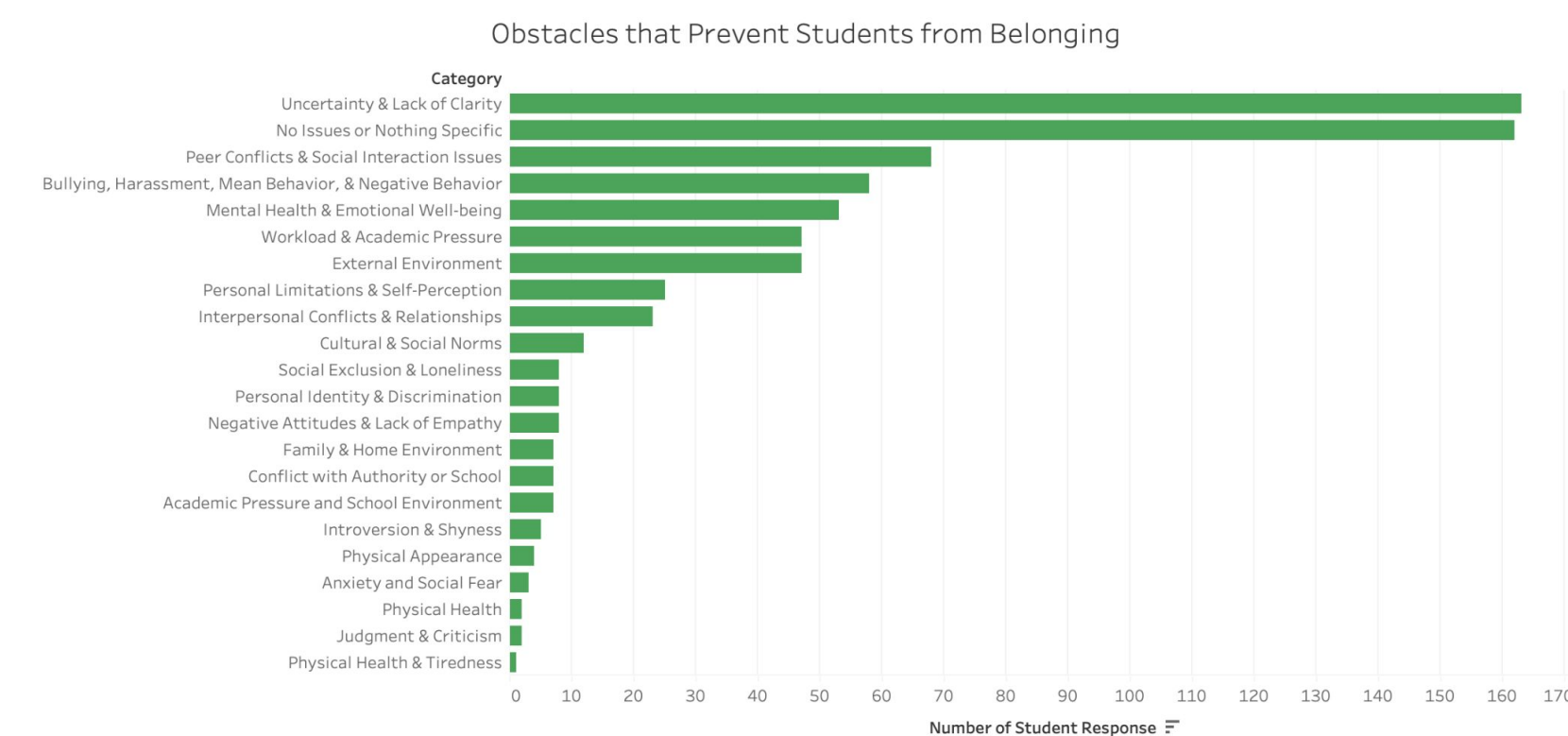
- Average Belonging Scores are relatively close to each other (Race, Grade, Gender).
- Students with low score tend to miss more days due to mental health impact → Same for Race & Gender.
- Explored students time spent online (Most & Least).
- Interests varied between groups.



### Barriers to Belonging

#### Top 3 Obstacles that prevented students from belonging:

- Uncertainty & Lack of Clarity, No issues or Nothing Specific, Peer Conflict & Social Interactions
- Diversity in student answers suggest the need of support groups for students.



Count of cleaned\_data.csv for each Category. The data is filtered on Exclusions (Category,Response), which keeps 546 members. The view is filtered on Category, which excludes Miscellaneous.