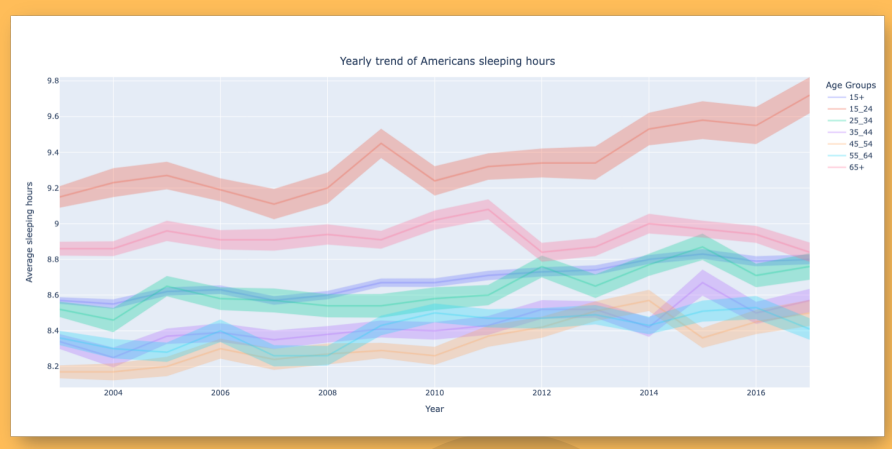
#2. Word cloud

Visualize the most frequently appeared words in over 770,000+ tweets using D3.

- If you hover over each word, it shows the word count
- We spot some frequently occurring words, e.g., stress, anxiety, and love, that can reveal the person's emotional activity for us to analyze in the network case study.
- Strengths: discriminable as mark high frequency words with salient colors
- Limitations: The words displayed do not show distinct emotional indications.



#1. Line Graph

--Trend of American sleeping hour

Visualize how average sleeping hours variate over the years from 2003 to 2017 among different age groups using Plotly

- the overall trend is increasing
- People (15-24 years old or >65 years old) sleep more than others
- Strengths: explicitly shows the trend and variation
- Limitations: The dataset is limited to years 2003-2017, update needed

Introduction

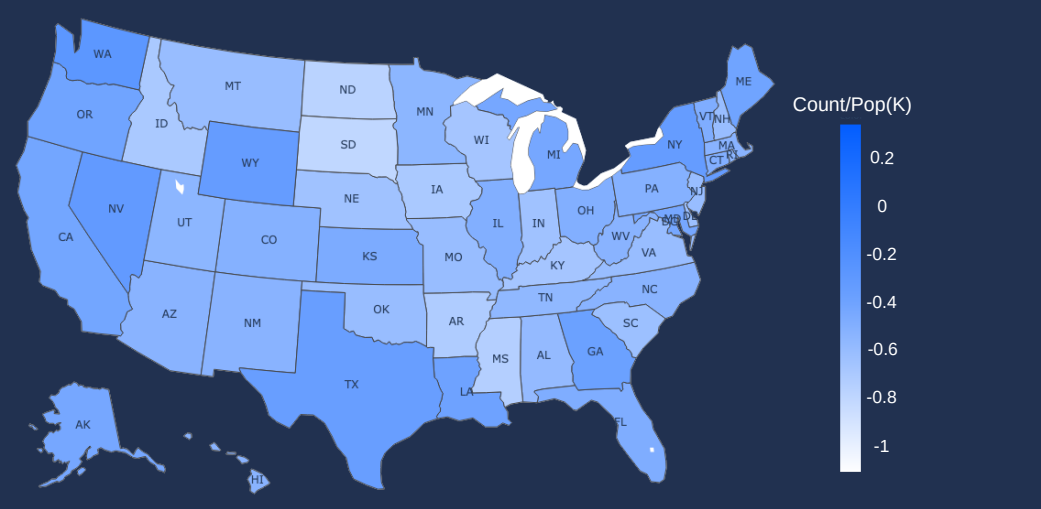
Having difficulty sleeping is receiving considerable attention nowadays, which is also a common concern among students at DKU. Lack of sleep can result in severe psychological and physical problems, such as daytime fatigue, anxiety, and heart-related diseases, which lead to serious health concerns and unproductiveness at work.

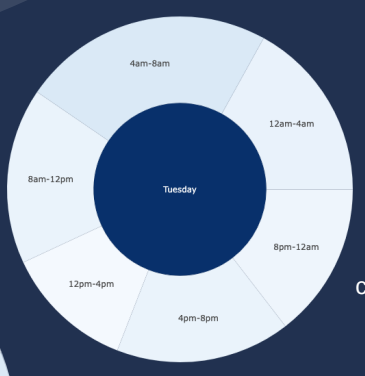
Therefore, our group seeks to find out the portrait of sleepless Twitter users, for instance, the spatial distribution, periodic pattern, etc.

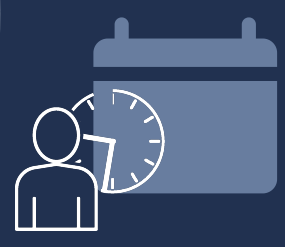
Our tweets dataset contains 770,000+ tweets scraped via snscraper. The yearly trend dataset comes from *The American Time Use Survey* between 2003 - 2017

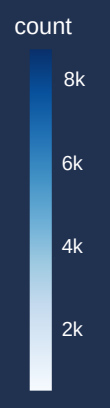
Sleepless Twitter Users portrait analysis

Yufei Dong, Rui Jiang, Ziying Ye









#3. Choropleth Map

--Geological distribution of sleepless Twitter users in the US.

- When hovering on each state, it displays the count of tweets posted in that area. The visualization is made by Plotly.
- The map shows that the number of posted tweets in specific regions like D.C., Washington and New York are slightly higher than in other parts of the US.
- Strengths: Visually effective in spotting general patterns.
- Limitations: Hard to display on a global scale due to limitations in Twitter IP address capture and Python package

#4 Sunburst Diagram

--Periodic pattern of sleepless Twitter users

Visualize the weekly and daily periodic pattern of sleepless users The average number of tweets determines area and color during that period by Plotly

- Users are more active on weekdays and 4 am-8 am daily
- Strengths: can view the overall weekly and daily distribution pattern
- Limitations: Our visualization cannot sort the sector in time order and the inner week circle displays meaningless hovering information

#5. Network Graph

--Connection between users and keywords

Explores the shared traits and links among users who actively post using Pyvis. We chose the top 5 keywords that show certain sentiment traits of the users and 100 active users to these keywords.

- Central nodes are five keywords, while side nodes are users
- When hovering over each node, it lights up the selected node, the connection with its neighbors, and the user ID.
- Strengths: can quickly identify the connection between users and keywords
- Potential Improvement: expand the network by including more keywords.