Team B Technology Plan

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About

This document lays out the planned use of technology in delivering an interactive dashboard. The document describes the usage of, intent, and reasoning behind using various tools related to:

1. Development
2. Design
3. Interpersonal communication
4. Shared workspaces

Development

The primary method of displaying and presenting our final deliverable will be achieved through a combination of HTML, CSS, and Javascript(JS). These programming languages will set the foundation of what will be an interactive and accessible dashboard used to visualize data.

Additionally, we plan on using the JS libraries NodeJS, CanvasJS, and SigmaJS.

- **NodeJS** will help simplify the implementation and construction of a server maintaining our interactive data.
- **CanvasJS** will allow us to easily convert server data into interactive graphic visualizations displayed within the dashboard.
- **SigmaJS** will be used to perform and display interactive network analysis

In order to quickly visualize our data before committing to visuals that will be displayed in the dashboard, *Tableau* will be used to help ensure what is included in the final deliverable is meaningful. This will also be a way of testing what we create in CanvasJS is accurate.

Additionally, the open source software *Gephi* will be used to quickly view and compare network analysis that will be done within the dashboard using SigmaJS.

Our final application will be hosted through *Heroku*. Heroku allows us to pipeline our deliverable directly from *GitHub*, while also allotting for a dynamic server.

Design

Another key part of the creation of our interactive dashboard will be the design process. We wish to create a design that is both easy to use and aesthetically pleasing. The plan we have now is to use Paint and Adobe Illustrator to create basic designs of the overall dashboard. Then we will create wireframes that represent many of the pages of the dashboard. The designs will then be implemented by the development team.

The job of each design tool is:

- **Paint** will allow us to create a basic design for our dashboard.
- **Illustrator** will be used to improve the basic design and add more of the smaller details.

- **PowerPoint** will be used to finalize the designs of each and every page of the dashboard.

Design choices are not limited to aesthetics, as information architecture is a key to the success of this project. We will likely use *MySQL* and *Ludo* for this need; however, we have alternative methods that can be used if necessary. This area of concern is contingent upon cohesion with a different group whose data will be used by our deliverable.

Interpersonal Communication

Due to the circumstances raised by COVID-19, our group will be using various mediums to maintain communication. To assist with this endeavor, we will take advantage of group chats such as *GroupMe* and *Google Hangouts*. GroupMe is useful for quick and casual communication. Google Hangouts is more effective for formal communications when working on things at the same time. As is the case with many companies and organizations during the time of this project, we will likely adjust things as necessary to ensure communication is not mitigated. This means we will likely adopt the practice of using other means of communication such as *WebEx* or *Zoom*.

Shared Workspaces

In order to collaborate effectively, every member of the group would need access to group files. From a development perspective, GitHub makes great sense for anything related to coding. For documents such as this Technology Plan, Google Drive and Google Docs are effective and will be the standard for collaboration.

Table Breakdown of Technologies

Development Tech	**Description**
HTML	HTML will form the structure of the webpage.
CSS	CSS will allow us to style our dashboard as we see fit and is compatible with HTML.
Javascript(JS)	JS allows us to make our dashboard dynamic to user input and allows us to generate graphics and visualization as data changes.
NodeJS	NodeJS allows us to set up a server in the express framework to convert data in real time to charts and graphs. It will also allow us to do error handling and dynamic data management.
CanvasJS	CanvasJS will allow us to easily convert raw data into graphics to be displayed on the website using Javascript.
SigmaJS	SigmaJS allows for dynamic network analysis.

Tableau	Tableau will allow us to create preliminary models for our graphics that we will be able to build on as we progress.
Gephy	Open source software that allows for easy to use network analysis.
Heroku	Hosting service that accommodates dynamic servers.

Design Tech	**Description**
Illustrator	Adobe Illustrator allows us to experiment with different designs and color palettes for our dashboard so we can evaluate it. We can also use it to create logos and symbols.
MySQL Workbench	MySQL Workbench has the design for the database Ludo, which we will use for our project.
PowerPoint	MS PowerPoint is an easy to use application that is helpful for creating basic wireframes.

Comms/Shared Workspace Tech	**Description**
GitHub	Hosts our repository and will serve necessary documents to Heroku needed to host our application. The ability to use GitHub in conjunction with Heroku will expedite the process of sharing, hosting, and posting our work to our website.
Google Hangouts	Google Hangouts allow us to work cohesively while being remote by using things like video chat and screen sharing capabilities.
Trello	Trello would allow us to track tasks and keep track of who is getting work done.