Team 21 - Sprint 1 Planning Document
Transforming Drainage Project

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Sprint Overview

For the first sprint we are going to work on our stakeholders' main goal: adding functionality to display the results of the entire database as layers on top of a copy of our main regional map. On the front end, users should be able to see and click on an extra tab at the top of the website which will then display a large regional map where the users can pick from several options to view the corresponding results as charts layered onto the regional map. On the back end the algorithm will be updated to support the calculations, and new code will be added to take in the new output provided by the updated algorithm to display the newly created layers for the regional map.

Scrum Master: Jacob Conley

Meeting Schedule: Tuesday/Thursday 6pm-8pm

Risks/Challenges: Our team as a whole is very inexperienced with the current framework made by the previous group which uses JavaScript, Python, Node.js, HTML, among others. This means that we are going to need some time to learn how to use these languages and time to understand how the previous team's code works. However, we do have a base to work off of which will help us a lot. In addition, setting up a local environment to work on the site may take some time.

Current Sprint Detail

User Story #1

As a user, I would like to be able to locate and navigate to the results of the mass database calculation

#	Task Description	Estimated Time	Owner
1.	Add extra tab to view results	3 hours	Alexis
2.	Implement code to have tab open new area to view results	3 hours	Alexis
3.	Be able to see an explanation of the tab's purpose	1 hour	Alexis
4.	"Unit Test"- assert that tab remains visible	1 hour	Alexis

Acceptance Criteria

- Given that the code is successfully implemented, when a user opens the website then a new tab should be visible that says "Regional Results."
- Given that the code is successfully implemented, when a user clicks on the tab then a new area is opened to see results.
- Given that an explanation is written, when a user opens the website then there should be an explanation given somewhere that explains the purpose of the new tab.

User Story #2

As a user, I would like to be able to view the results of mass database calculation as a map

#	Task Description	Estimated Time	Owner
1.	Setup testing/development server for website	6 hours	Jordan
2.	Implement algorithm to iterate through and return each grid cell's data in database	5 hours	Brandon
3.	Implement algorithm to calculate each grid cell's data in database	5 hours	Brandon
4.	Implement data structure to hold newly calculated data from the algorithm	5 hours	Brandon

5.	Implement code to transfer newly calculated data from the server to the client	5 hours	Jordan
6.	Implement code to accept and parse data from the server	5 hours	Brandon
7.	Add another google map with GeoJson as an overlay	5 hours	Jacob
8.	Implement code to take parsed data and assign data to correct grid location	5 hours	Jacob
9.	Color each GeoJson grid to represent data calculated	5 hours	Jacob
10.	"Unit Test"- use predetermined numbers to see if we receive expected outcome	1 hour	Brandon

Acceptance Criteria

- Given that the algorithms are completed, when the algorithm is run to calculate the database data then it will return accurate output to a data structure
- Given that the transfer code is complete, when the algorithm computes the new data then the transfer code will send that data to the client
- Given that the parser code is complete, when data is returned to the client then it will be clearly and neatly parsed
- Given that the google map code is complete, when the user enters the new tab a new google map with GeoJson as an overlay will be displayed
- Given that the data manipulation and output code is complete, when the data is finished parsing from the client then the client will be able to display a google map with colors that represent the data points calculated per each grid cell

User Story #3

As a user, I would like to be able to compare the map results with mappings directly from the database

#	Task Description	Estimated Time	Owner
1.	Create a button below the existing map that shows/hides comparison map	1 hours	Jacob
2.	Create another toggleable legend that is shown/hidden with the comparison map	4 hours	Jacob
3.	Add a Google map with overlay capability	4 hours	Alexis

4.	Pull relevant data from database to server	2 hours	Alexis
5.	Transfer data from server to the map overlay values	4 hours	Alexis
6.	“Unit Test”-test user input via console output for confirmation that server received command	1 hour	Jacob

Acceptance Criteria

- Given that the website code is complete, when a user selects the button to view/hide more comparison maps then the website should show/hide the maps as needed
- Given that the code is implemented to fetch the data, when a client asks for the specific data needed then the server sends that data back to the client
- Given that the map code is complete, when the client receives the data from the server then the client should be able to display the data as colors on the GeoJson overlay of the map

User Story #4

As a user, I would like to interact with the results of the mass data calculation and comparison map

#	Task Description	Estimated Time	Owner
1.	Implement map functionality to change input values (both maps)	4 hours	Jacob
2.	Create map legend with toggleable inputs (checkboxes) to interface the input changes on the front end	4 hours	Brandon
4.	Create options to change output displayed on map	4 hours	Jordan
5.	Make the interactions very responsive	10 hours	Jordan
6.	Integrate the interaction interface with existing CSS	6 hours	Alexis
7.	“Unit Test”-test responsiveness via console output if object was pressed	1 hour	Jordan

Acceptance Criteria

- Given that the input legend is completed, when a user selects different input from the legends, then the maps should respond to show the appropriate output
- Given that the output options are complete, when a user selects a different output from the options, then the maps should respond to show the appropriate output
- Given that the CSS/JavaScript is implemented, when a user views/interacts with the maps then they should be styled similar to the other outputs and should be just as responsive as the other outputs

User Story #5

As a user, I would like to be able to see what the map output means in a clear way

#	Task Description	Estimated Time	Owner
1.	Add descriptions of what each output accounts for	1 hour	Alexis
2.	Add interactive legend which shows the range of values that correspond to each grid's color	4 hours	Brandon
3.	Make legend interactions responsive	4 hours	Alexis
4.	"Unit Test"-check predetermined output for grids cells	1 hour	Alexis

Acceptance Criteria

- Given that the descriptions are written, when a user sees the map output then a description should be visible on the page that explains what the output is
- Given that the legend is made, when a user hovers their mouse over a grid cell then the number associated with that output should be displayed on the screen
- Given that the legend is responsive, when a user interacts with the legend/map the corresponding actions are fluid and responsive

Backlog:

As the project owner, I would like to:

1. have user uploaded data categorized/named properly
2. be able to analyze user uploaded data
3. have a way to determine uploaded data quality

As a user, I would like to:

1. more easily download results of individual computations
2. have the option to download results in different file formats
3. see more than just the average in the result charts
4. have the option to download each layer of results of all grid cells separately

5. have the option to download each layer of results of all grid cells together

6. have an option to save my data to the website database for later use/for other people to use

7. have the option to rename my data to help with identifying what it does if I choose to save it to the website database

8. have an option to use other people's data from the website database

9. see a pop-up that explains the quality of other people's data if I choose to use theirs

10. have access to more sophisticated graphing capabilities than what is currently present

11. have the option to submit metric measurements as inputs

12. have the option to see charts and results in metric units