Team #6 - Encouraging Sustainable Waste Management

ITSC 3155 Final Project Report

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1 Introduction

We are inspired to make a difference in our world because as it stands now most people aren't aware of the current situation of the world's waste. We hope to convey the sheer amount of waste in the world to make people more aware of the amount of trash that currently exists. Mr. Beast was one of the main inspirations and motivation for us as we hope to help communities around the world with our website.

1.1 Product Vision

For community service-oriented organizations and people, Worlds Waste Management is a website that provides valuable information on the state of waste management around the world. Unlike other websites, Worlds Waste Management provides an intuitive and easy to navigate center of information.
The goal of Worlds Waste Management is to create an easy to use center of information that organizations around the world can use to provide help to communities that need help with waste management. Using the provided information, organizations can provide short-term improvements such as helping develop a waste management system. In conclusion, World Waste Management hopes to provide information that will lead to communities developing and maintaining a proper waste management system.

1.2 Customer Description

Our target audience is waste development organizations that are focused on helping communities around the world develop proper waste management systems. Furthermore, active community service organizations and members can use the information provided to find areas that need improvement or plan projects.

1.3 Project Scope and Objectives

The objective of our project is to not only show the current hotspots of waste around the world but to provide information that can lead to helping communities that need help. In our site you will be able to find current hotspots of waste and get an in-depth image of the amount that's in that area. You can also be given the current location of the hotspot and signup to participate in the removal of the trash if desired. The website will also provide information on the state of waste management systems for countries and cities around the world.

1.4 Ethical concerns

As of now, there are no ethical concerns.

2 Project Resources

1. Google Doc.
2. GitHub.
3. Amazon Web Services

2.1 Group Members

1. Ronak Patel
2. Dennis White
3. Miki Solomon
4. Elvis Velasquez

2.2 Data

https://drive.google.com/file/d/1r7DmXX2dHG2ihNxavy1Tj4BuF16uZGQD/view?usp=sharing
https://drive.google.com/file/d/1oJpvisJGn2GUcTaGQ6ySYOVHlqhyKKWo/view?usp=sharing
These datasets provide extensive information about the state of waste management around the world, the composition of waste, and country and city information.

2.3 Hardware and Software Resources

1. Visual Studio Code
2. Pycharm
3. Amazon Web Services

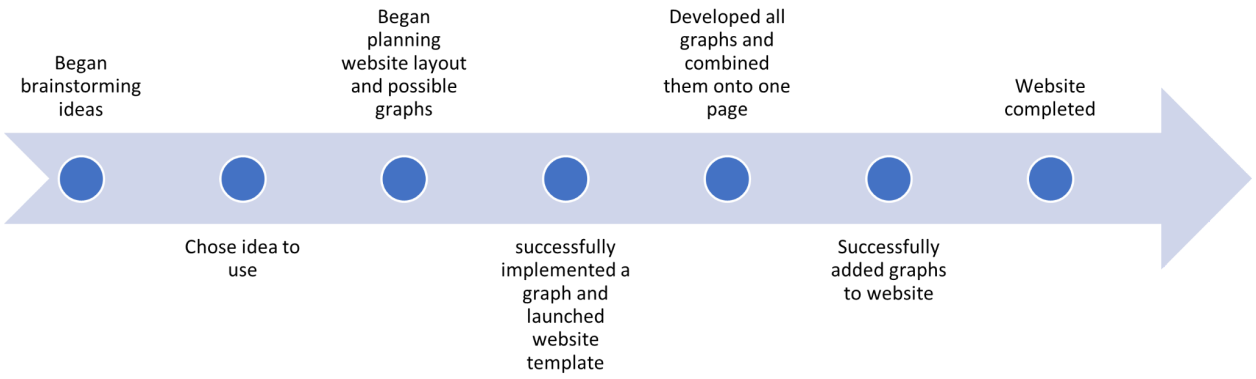
2.4 Special Resources

CSV database files, Github

3 Plan

This section contains is a list of tasks and deliverables associated with the project, a Gantt chart depicting task durations, dependencies, and completion dates, and a summary of the resource requirements and assignments for each task.

3.1 Timeline Chart



3.2 Task/Milestone Descriptions

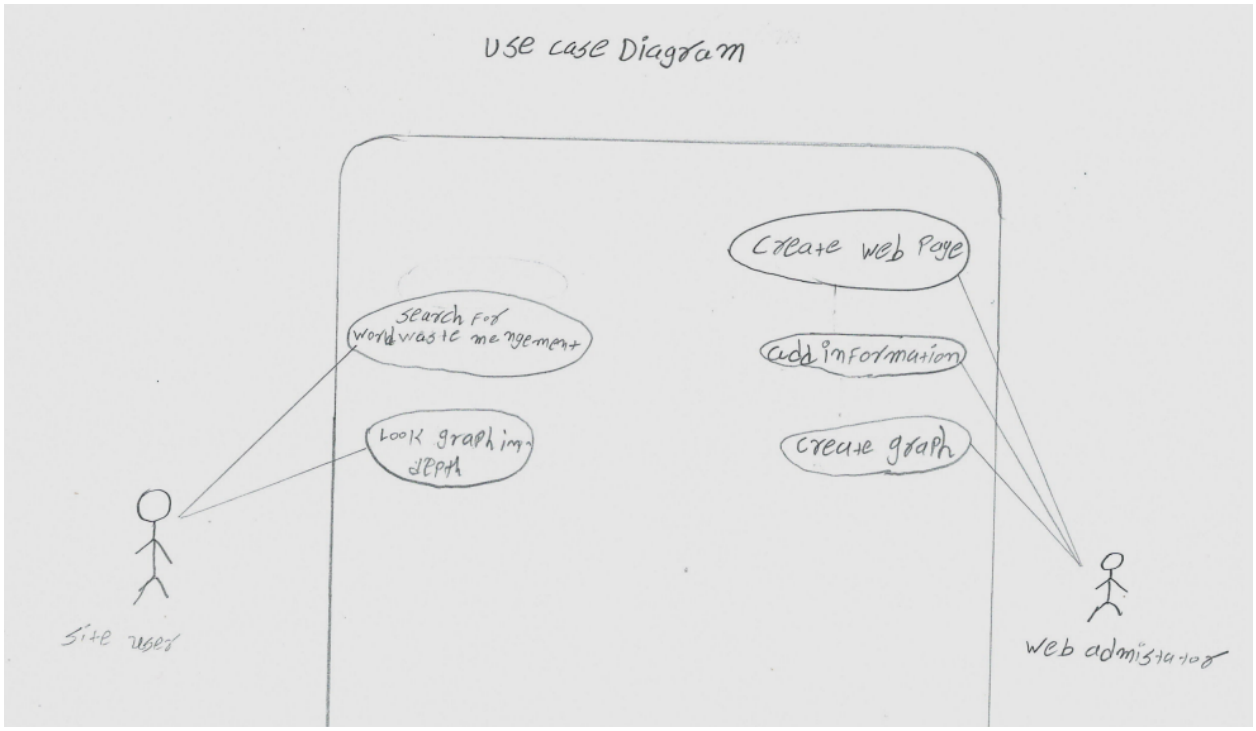
Consider the following milestones:
Milestone 0: Brainstorming ideas
Milestone 1: Chose an idea to use from the list of ideas by discussing structure and feasibility
Milestone 2: Developed First Graph using CSV file
Milestone 3: Successful implementation of Website
Milestone 4: Completed Documentation and presentation video

3.3 2.3 Resource Table

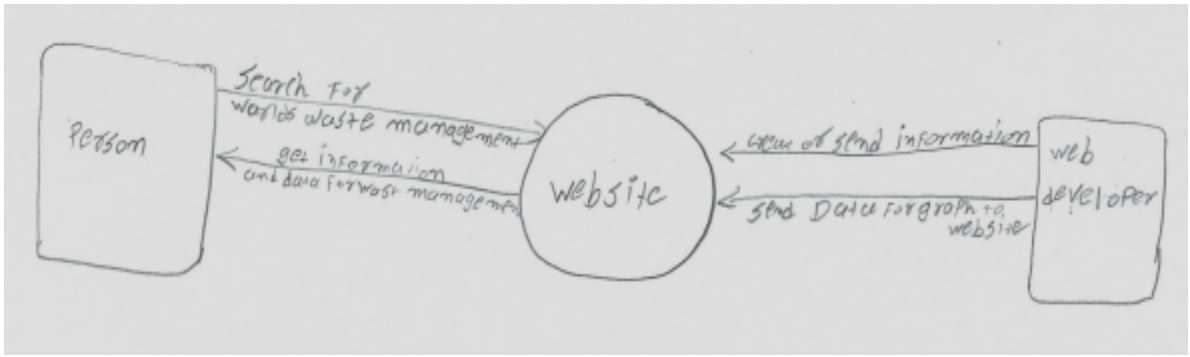
Task	People
Develop Graphs	**Elvis, Ronak**
Develop Website	**Miki**
Maintain Documentation	**Dennis, Ronak**
Video Production	**Elvis**

4 System Design

4.1 Use Case Diagram



4.2 DFD diagram



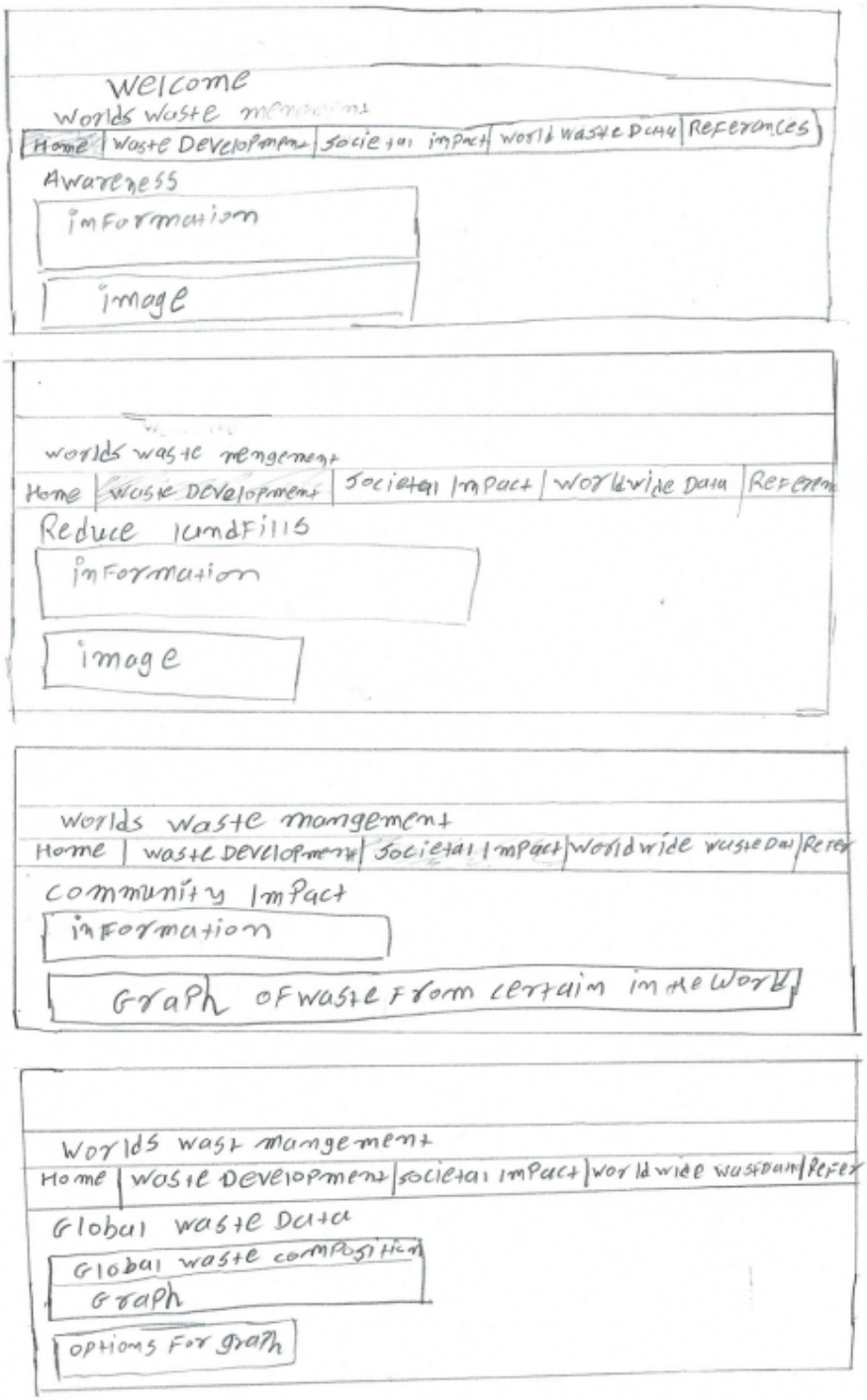
4.3 User Stories

- Elvis: As a leader for a waste system development project, I want to see what countries need help covering their population in a waste management system in order to focus resources there.
- Dennis: as a government official for the city of Asheville, NC, I want to see waste cut down and be more competitive with communities that have good waste management numbers.
- Miki: As the president of the United States I have tried to make others more aware of the damage being done by not taking care of our environment. All I want is for others to actually know the amount of waste that's actually in our world.
- Ronak: As a waste management officer for Mecklenburg county. I want to make people aware that the waste they make is bad for the environment and encourage them to reduce their waste.

4.4 Feature List

- Interactive Maps
- Global waste information
- Links to helpful waste management resources

4.5 Storyboard



5 User Tests

5.1 Test procedure

Group 19 tested our website by using the provided user stories that cover the functionality. Using these stories we hoped to test the functionality of the website. Throughout the test, we took notes on observations made by the partner team and by us.

5.2 User Test and Results

#	User Story	Test Results
1	As a user, I want to be able to see interactive maps for percent of the population covered by a waste system.	User successfully finds the map on the website.
2	As a user, I want to find the data about how to match the waste produced by the region around the world by their composition type.	User successfully was able to find the interactive bar chart on the website.
3	As a user, I would like to see the percent composition of waste by the city in their region.	User successfully finds the information about the graph by their percent composition by city.
4	As a user, I would like to find the special types of waste around the world.	User successfully finds specific information about types of waste around the world.

5.3 Conclusion

The website performed well and the partner team was able to test the entire website and graph functionality successfully. Notes were taken on what future improvements could be made. Lastly, the partner team provided helpful comments on their thoughts on the website.

6 Lessons Learned

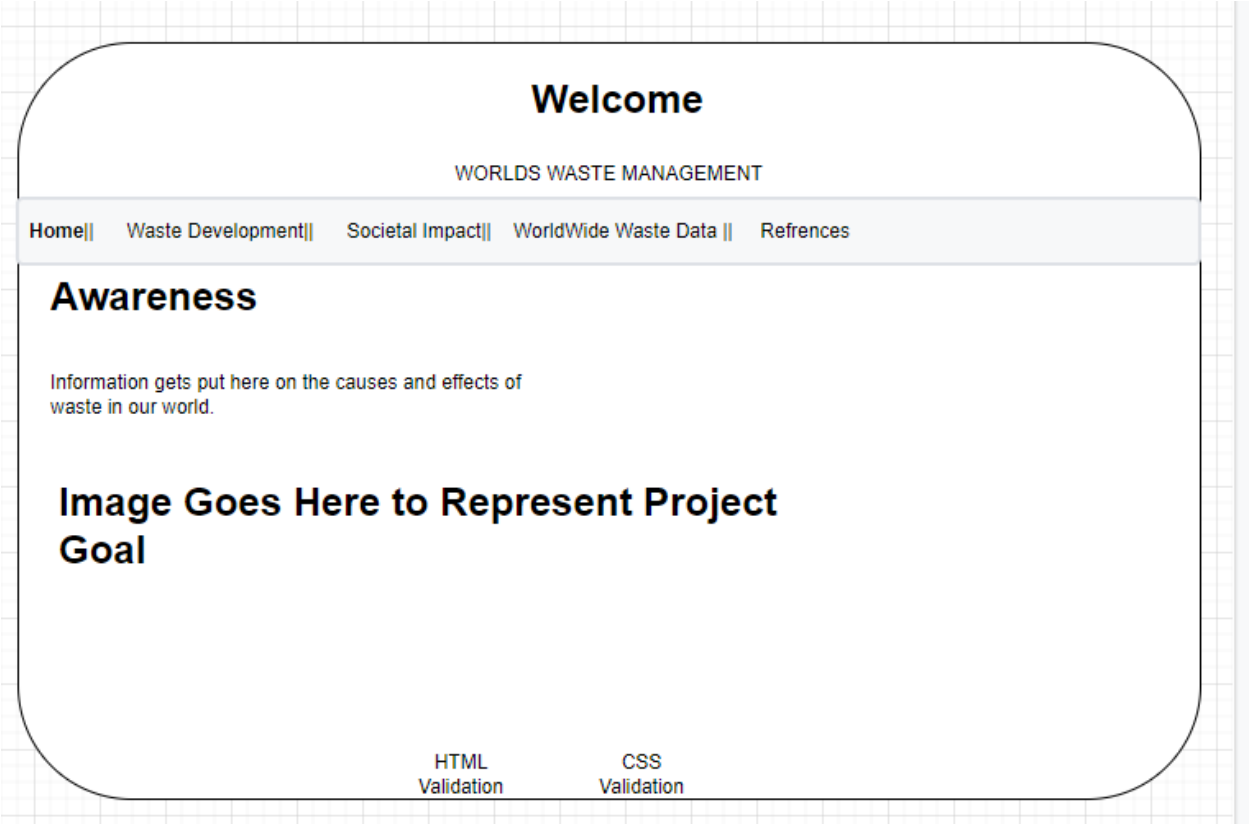
- An efficient method of planning structure of code
- How to use data from files to create visualizations
- Proper time management and team communication
- How to effectively troubleshoot errors

7 Future work

- Add ability to donate
- Update CSV files with new information for countries with previously no data
- Implement graphs directly on the website
- Launch website to a permanent server

8 Appendices

8.1 Sketches



WORLDS WASTE MANAGEMENT

Home|| **Waste Development**|| Societal Impact|| WorldWide Waste Data || Refrences

Reduce Landfills

Text goes here under bullet points

Image Goes Here to Represent Project Goal

HTML Validation CSS Validation

WORLDS WASTE MANAGEMENT

Home|| Waste Development|| **Societal Impact**|| WorldWide Waste Data || Refrences

Community Impact

Text goes here too emphazing the impact people have on the world

Graph goes here showing the impact of waste in areas of the world

HTML Validation CSS Validation

WORLDS WASTE MANAGEMENT

Home|| Waste Development|| Societal Impact|| **WorldWide Waste Data** || Refrences

Global Wase Data

Image of graph goes here linking to python coding of the real graphs

HTML Validation CSS Validation

WORLDS WASTE MANAGEMENT

Home|| Waste Development|| Societal Impact|| WorldWide Waste Data || **Refrences**

Sources

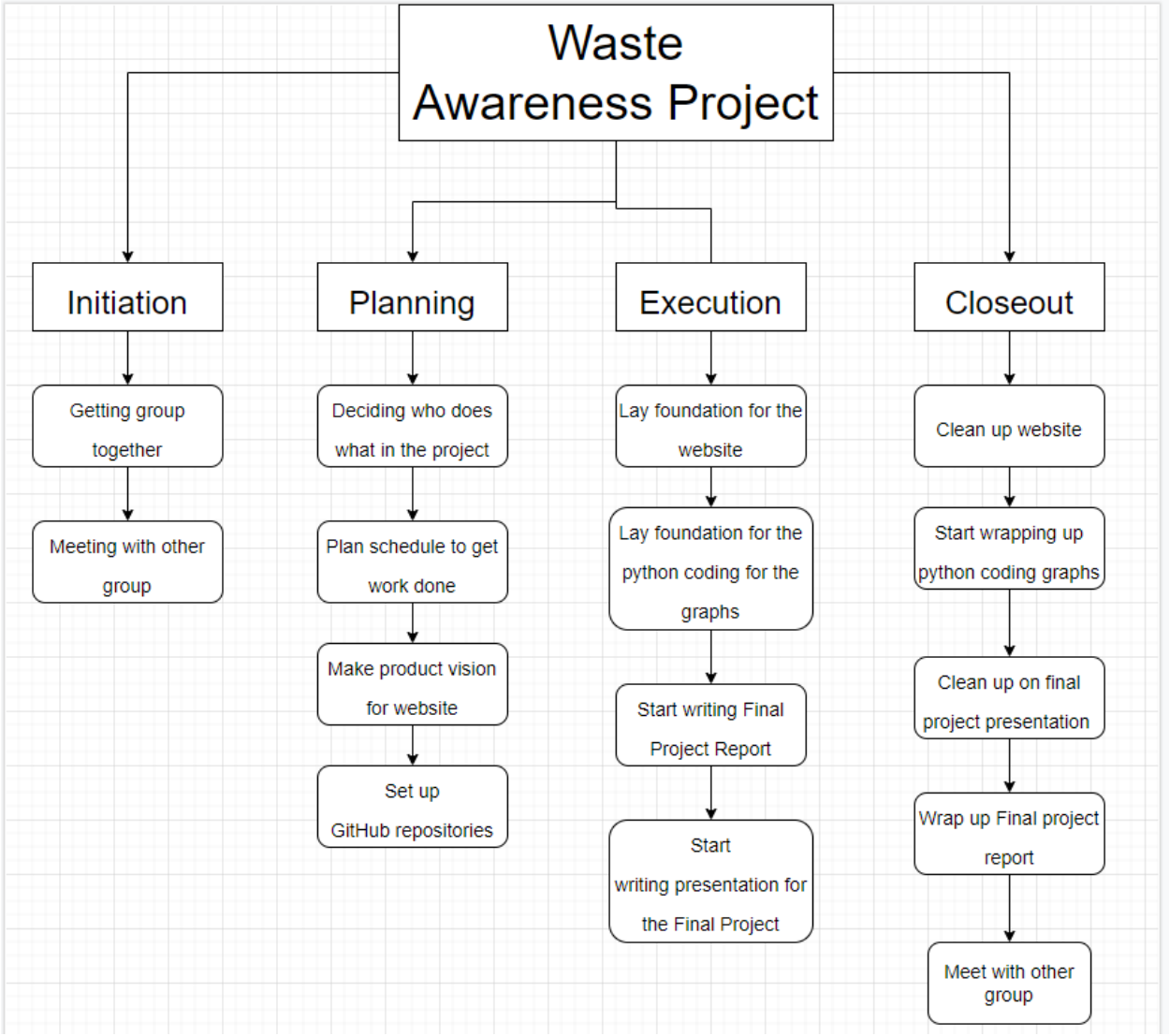
Sources of information used in the website and links made out of them so user can click on it to learn more information

HTML Validation CSS Validation

8.2 Software Repository

https://github.com/E1lvis/3155FinalProject

8.3 WBS tool


Waste Awareness Project
Initiation
Getting group together
Meeting with other group
Planning
Deciding who does what in the project
Plan schedule to get work done
Make product vision for website
Set up GitHub repositories
Execution
Lay foundation for the website
Lay foundation for the python coding for the graphs
Start writing Final Project Report
Start writing presentation for the Final Project
Closeout
Clean up website
Start wrapping up python coding graphs
Clean up on final project presentation
Wrap up Final project report
Meet with other group