

Chitra & Julie

WozU Data Science Program Final Project

Taking Care of Rubbish (Everyday)

Outline of our group project:

- Team Name: Green Gaia (Chitra Patel and Julie Boucher)
- Project Name: Taking Care of Rubbish
- Python and R
 - Tableau, Microsoft Office and Google Drive
- Evaluation questions you'll plan to answer with your data
 1. 2018_WDI Extract
 - 1.1. How does the amount of waste change over time?
 2. UK/England Core Dataset:
Different types of waste collected, classifications, and treatment methods
 - 2.1. What is the difference between categories and classifications?
 - 2.2. Comparing England with the UK, to see if England is the highest producing country in the UK?
 - 2.2.1. The United Kingdom UK: England, Scotland, Wales, and Northern Ireland (all together 4 countries)
 - 2.2.1.1. England is part of the UK
 - 2.3. How do treatment methods differ by waste material types?
 3. Country Level Dataset
 - 3.1. What is the relationship between the total amount of waste produced, GDP and population globally?
- How this project will meet the minimum project requirements
 - Data Wrangling and running statistical analysis in R and Python
 - Already created group project on Trello and GitHub
 - Machine Learning technique, and Intermediate Statistics such as ANOVAs and Chi-Square

Planning the project:

You'll need to:

- Flesh out what your main goals
- Gather any background information you need to explain your work or the data

- Set the scope of the project
- Detail all the requirements
- Plan for trouble ahead by detailing limitations and risks

Executive Summary:

Your executive summary should be pretty brief, under 3 paragraphs and should provide a concise summary of the purpose and contents of the rest of the document. Explain to the reader what they will get from this document.

- Summarizing rest of the doc- who is doing this, and how long it will take, what programs you are using, how many questions do we have
- "Presented to the board -> quick read 2 par -> we need to get the points across in 2 par of ex. summary
- (Conclusion and Solution: The government should educate and bring awareness to the community based in the UK and England.)
- Providing resources

The mentality of out of sight out of mind is long overdue for a new sustainable outlook. Whether humanity wants to admit it or not, there is an environmental crisis with our disposal system. Globally there's about 4.9 tons of trash dumped per day. We take our trash out and think the problem is solved, but where does the garbage go?

It goes to our wastelands, polluted, or placed in other random parts of the earth. Trash is literally everywhere and this big disposal issue needs to be addressed with solutions and awareness.

Our Purpose is to show the everyday home, how a small amount of trash can turn into a big problem. This data presents the different types of trash collected and where/how it's disposed. Our main goal is to not only get correct information on our trash use, but to also educate the government and general public.

Although this specific project is located in the UK and England it can be compared to

Business Objectives:

Show a solution by showing the problem and showing how to reduce waste in what categories.

(1) Business objectives should offer the details for why the project is important.

This project is important for the sake of the environment and the land we live on. It is important that the governments that make the bigger decisions for the people take responsibility and help guide the proper rules and regulations to manage and dispose of the waste properly; while maintaining sustainable environmental friendly actions. Most

of all, it's important to educate the people why it's important and how they can do their part to help clean our earth.

- *environmental purposes*
- *government needs to manage/dispose waste properly*
 - *strict rules and regulations*
- *needs to be sustainable/ environmental friendly*
- *Educate people*

(2) Outline the goals of the project in the sense of the value it will bring and set expectations. Keep your objectives measurable to avoid confusion in whether or not they have been met.

The main goal of the project is to determine the amount of waste changed over time, to visualize the increase of waste created each. Looking at the general number of overall waste can give us an idea what we're looking at. Then see how much waste is produced, imports and exports compared to what waste is actually treated. Dig a little deeper by finding what household trash is thrown away the most or other popular categories of trash in that matter, to give the people an realization of what we waste and possibly find alternatives. Overall, looking at the population of each country, their total waste, and total import and export, can give us a better understanding on the correlation between how much trash they produced and how we can find better solutions.

- *Amount of waste change over time*
- *see how much waste is produced/treated*
- *which type of trash is collected the most and from which classification*
- *GDP and population correlate with waste produced by countries*

Background:

Provide any relevant background information regarding why this project is being initiated

It's relevant to everyone. Waste management needs to be addressed globally because the amount of trash being produced, which is increasing drastically in tons daily, is affecting the earth: living creatures, land, ocean and quality of air.

Scope:

The Scope section should outline what is and is not included as part of this project. Oftentimes we make assumptions of features or functionality that is not necessarily required. This is especially useful in a phased approach or when working on an existing system.

- *only going to answer the questions, not going on a tangent. (only these questions will be answered, you can recall in 2.5 section). (Protect your purpose, without outside distractions from other sources that could put you off course.)*

The scope of our project will first and foremost, use the software we have learned through this WozU program. Our purpose is to not deviate from the issue of waste management and the solutions. Our information is mainly based on 4 datasets and will not exceed other outside sources, due to keeping the project goal pure and not dilated. We will stick to our questions and our questions only.

- *Using Software that we learned in WozU program*
 - *Included: will be focusing on UK/England*
 - *Not included: extensive global details/ only brief details*
 - *Only going to answer the questions we have in business objectives*
 - *defined as in the meeting board can keep asking questions*
 - *protect your purpose without outside distraction from other sources that could pull us off course*

Functional requirements:

This is where most of the detail should reside. describe all of the required capabilities of the system in detail. It is helpful to articulate features in terms of user capabilities. Keep in mind that the features will be designed and developed off of these descriptions, so if you leave anything up to interpretation, you run the risk of the results not meeting your expectations. You can also assume capabilities that are not mentioned here will not be included in the project, no matter how common or obvious they are. You may want to break our subsections for each major feature to make the document more organized.

- *Getting more specific on analysis-> list for Kanban -> task list*

Data Wrangling: Using Excel/R/Python. Study our datasets, familiarize ourselves with what each column is and how it is measured, remove empty/repeated data if any, consider sub-setting the dataset in a proper manner, meaning the subset should be a random selection of the data, convert data to all the same format, and isolate specific columns to use for further analysing.

Data Analysis: R/Python. Study the Datasets for a better understanding to help with the brainstorm for further analysis on the project requirement questions. In the process of searching for proper functions to create models and predictions.

Data Visualization: visuals in Tableau and transferred over to PP/ Tableau presentation with descriptions (text)

Presentation: PowerPoint and present it via Zoom

Personnel requirements:

In this section you may want to describe the composition of the team, do you need dedicated development? how many people? How about design or QA? Think about what personnel is required to make this project a success, and place your recommendations here.

The team 'Green Gaia' are made up of two talented team members, Chitra and Julie. We closely together day in and day out, pouring our heart and sweat into trying to make the world a better place. We strive for the best. With our multiple zoom calls and slack conversations, we hold ourselves up to the high expectation of problem solving, through intense communication, We set our goals and tasks once a week, alternating the workload as expected and reporting our progress to our instructor, Meredith. Once a week meeting with Meredith, asking her questions and for her guidance for further analysis. We attend office Hours, and consult with Devin and Sherlin if needed.

Delivery schedule:

It's often helpful to break a project out into phases or milestones. In this section list out any logical checkpoints where you would like to see the project demonstrated to ensure that expectations are being met. Describe the phase, and the functional requirements required for completion.

Week 1: Topic, Datasets, approval, questions, WozU lessons, choosing analyzing methods, Analyse datasets for Q1 and Q7, finish project proposal

Week 2: WozU lessons, studying the dataset, studying the method, and start data wrangling to answer the questions

Week 3: WozU lessons, running models, machine learning

Week 4: WozU lessons, review and validate findings from week 3, and draw insights/predictions and conclusions/ solutions

Week 5: WozU lessons, compile findings into a slide show, see if the presentation is in laymans terms and logical, slideshow layout and be consistent. Research Rules and Regulations of waste in the UK/England.

Week 6: WozU lessons, make final touches to PP, and practice presentation, one with ourselves, the second with the instructor.

Other requirements:

This section serves as a catch-all for any details that may not fit in other areas. things like device or browser support, considerations for accessibility or inspiration for style. Offer additional context here to ensure the project meets your vision

- ***Rules and Regulations of UK/England on waste management***
- ***Conclusion: find article on Sweden's waste management, and find resources on how to recycle and manage waste (in the UK mainly).***
- ***(if we have time: find more resources specifically in the UK)***

Assumptions:

Oftentimes we are reliant on outside sources such as frameworks to be used, or services that our system will depend on. In this section you should provide detail on any assumptions that you have made, such as the system being reliant on the availability of the Google Maps API.

- ***Software/ Programmings glitch specially Tableau***
- ***Rescheduling our Zoom meetings if we have some personal issue come up***
- ***No going to pay for datasets***

Limitations:

Identify any limitations in terms of time, personnel, technical details, or other things that limit the scope, time, and cost of the project being discussed.

- *you can control, internal problems, more to do with you*
- ***Personal issues, getting stuck a million times while data wrangling and running analysis, technical problems, not enough time***
- ***things we can control***

Risks:

Every project has inherent risks that may cause delay or even failure of a project. You must identify these risks to show you know what they are, and also identify ways in which you would mitigate those risks.

- *things we can't control, more to do with someone else.*
- ***Family emergencies or brokenz software/hardware, slow internet connection***
- ***Maybe not have enough time to find resources to educate as a conclusion.***
- ***Not getting help on time may delay the project***