Evaluation Assignment 4
Design Support Documents

Team 3
NRGR – App: PG&E Reducer

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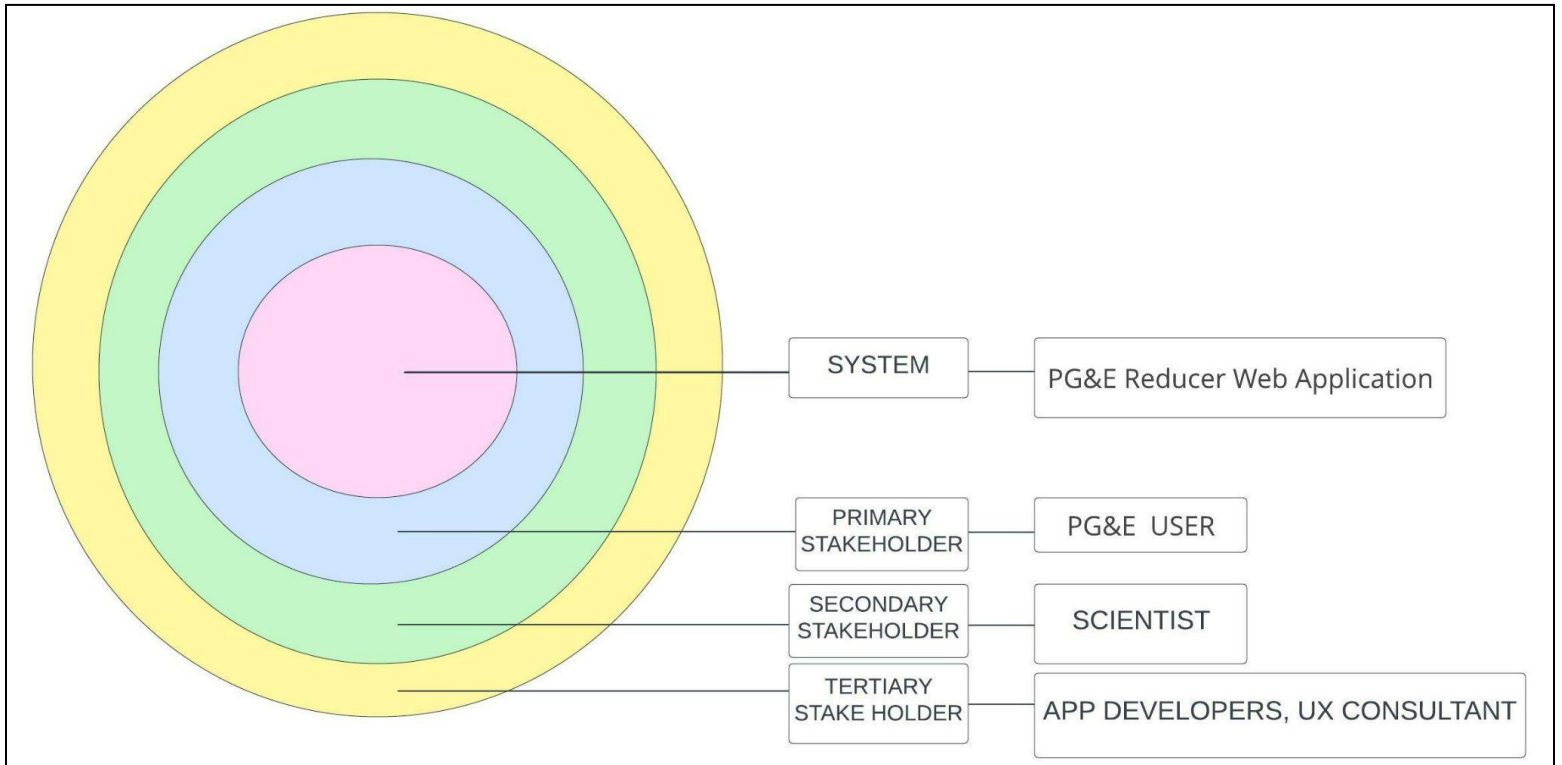
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App Description :

The PG&E energy reducer app will be a web application for PG&E customers that will allow them to visualize their heat and electricity consumptions through easily and readable graphical representation. The application aims to analyze a user's energy consumption and provide a way to visualize their usage and cut down on their waste.

The Goal of the user after using the application is to reduce the energy (i.e heat and electricity)after using the application and understanding where there is unnecessary usage of the energy which will also help in reduction of cost.

Stakeholder Analysis :

SYSTEM	PG&E Reducer Web Application
PRIMARY STAKEHOLDER	PG&E USER
SECONDARY STAKEHOLDER	SCIENTIST
TERTIARY STAKE HOLDER	APP DEVELOPERS, UX CONSULTANT

ONION MODEL

Stakeholder Analysis:

Onion Model:

The onion model helps identify the stakeholders.

1. System
2. Primary Stakeholders
3. Secondary Stakeholders
4. Tertiary Stakeholders

STAKEHOLDER DESCRIPTION :

System:
   The system in our case consists of the PG&E energy reducer web
   application and the server for the PG&E customers to visualize and
   analyze their data .

Primary Stakeholders:
   This consists of the PG&E user. They are the primary users of this
   app, who are eventual end users of your system. PG&E
   customers will visualize their heat and electricity consumptions.

Secondary Stakeholders:
   They are the users that utilize the data collected by the app or
   support the primary users.They provide data to primary users with
   the help of Team of Developers and a UX Consultant
   So the scientists come under this category.

Tertiary Stakeholders:
   This group consists of users that don't necessarily use the app, but
   are affected by the project or are affected by it. This includes the
   Application Developers, UX Consultant

Stakeholders Goal-Influence Table :

USER	GOAL	INFLUENCE
PG&E USERS (customers)	The ultimate goal of the user is as follows ❖ Reduce the unnecessary heat and electricity consumption. ❖ Decrease the overall cost which they have been paying for a long time.	❖ The user's contribution for the project will be the use of application will give them an idea and data in which they can see at what time period there is unnecessary usage of electricity and heat. ❖ User will be able to visualize their own data which a note, suggestion which says instead of using so much of heat you would have used that money for some investment ❖ The message will directly be connected to their emotions that will be the main point to get influenced.
Scientist	❖ Supervise the app creation process make necessary adjustments, considering the interests and needs of all stakeholder ❖ To provide the	❖ Provide input into what the users are expecting and need. ❖ Influence the content included in the application to directly support users.

	required data to be used	
Developers	❖ To build an app based on the requirements given by the Scientist	❖ Decide the best design for the app, structure and functionality . ❖ Create design for the app as necessary. ❖ Helps in software delivery, resolving the initial design and developmental issues
UX consultant	❖ To help develop the app's user interface to make it user friendly and understandable. ❖ To provide design/usability assistance to developers to better meet users' needs.	❖ Identify the use case of all the users and create functions ❖ Conducting analysis on the usability of the app

Stakeholders Goal-Influence Table :

For Goal-Influence Table Description there are several goals for the app to satisfy all stakeholders. Firstly, under the category of primary stakeholders are the PG&E users who are eventual end users of your system. The main goal as mentioned in the above table is to reduce the energy and heat consumption and reduce the cost in terms of money. As we know Influences are contributions or constraints that the stakeholder makes to or on the project. So the PG&E users' ultimate influence will be the use of applications that will give them an idea and data in which they can see at what time period there is unnecessary usage of electricity and heat.The more use of the application the more the success of the application. The customers need to be able to access and interact with the app which will be its ultimate goal ultimately.

 To ensure the app can achieve the main goal of creating information alignment between customers and their own consumption data , there is a need for a scientist, developers, and UX consultants. The secondary stakeholder is the scientist who in this instance is a bridge between the primary and tertiary stakeholder. They provide data to primary users with the help of Team of developers and a ux consultant.

The goal of the scientist is crystal clear to help the society and the users show them their own data of the usage so that they can save energy.

Lastly the tertiary stakeholders are the Developers and the UX consultant who are affected by the project. They are the ones who will be either praised or affected in negative way for the outcome of the applications.Developers of the app have the goal of developing an app that meets the requirement of all mentioned stakeholders, while UX consultants provide continuous feedback on the usability of the app as they relate to creating a better and more effective experience for all stakeholder

Personas of Stakeholder :

Primary User 1:

Name: Nilufer
Occupation: Interior Designer
Age: 24 years
Location: California, USA

Nilufer is an Interior Designer working with a multinational company. She has been a customer of PG&E for a long time for almost the last 6 years.She always used to wonder why her electricity bill used to vary. After using the application she got to know the unnecessary use she had while consuming electricity and heat. But, the app helped to analyze where she can save the heat and energy during which day and time of the week and now she is saving a lot of money which she is using for her further investments (again a suggestion provided by the app)

Primary User 2:
Name: David
Occupation: ML engineer
 Age: 30 years
 Location: New York, USA

David is a machine learning engineer in California. Since 2019 he is working from home and he has seen a rise in his monthly bills. He knew there would be an increase in monthly bills but after he started using the app he came to know that he can actually save 30 %of heat and electricity that he used to waste. He started analyzing and saving heat, energy and electricity.

Secondary User 1 :

Name: John
Occupation: Scientist
Age: 34 years
Location: Houghton, Michigan

John is a scientist who has been working with PG&E. He has gone through many complaints from the PG&E customers regarding sudden rise in electricity bills.
So John came up with a solution of sharing data to the individual with the help of an application. He saw the idea actually worked and people have started recognizing where they use unnecessary energy and that was the reason for sudden rise in electricity bills.

Secondary User 2 :

Name: Kelly
Occupation: Scientist
Age: 28 years
Location: California, USA

Kelly is a scientist working with PG&E company. She came up with an awesome idea from the environment point of view and attaching the energy consumption directly to the customer's emotion. She suggested the idea that while sharing the customer data in graphical form or distribution you can send some message like you could have saved some amount of money and from that money you could have done the following list of things. She had an amazing idea of gamifying the app which would keep people connected more to the application.

Hierarchical Task Analysis:

```
┌─────────────────┐
│      Web        │
│   Application   │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│   PG&E USER     │
│  SIMPLE LOGIN   │
└─────────────────┘
         │
         ▼
┌─────────────────────────┐
│  Time Period for vieving │
│  the data in graphical   │
│         format           │
└─────────────────────────┘
```

DAY	WEEK	MONTH	YEAR (Depends on the policy of the company)

```
        ┌──────────────────────┐
        │      GRAPHICAL        │
        │   REPRESENTATION      │
        │     OF ENERGY         │
        │    CONSUMPTION        │
        └──────────────────────┘
                  │
                  ▼
        ┌──────────────────────┐
        │ SUGGESTION ON HOW     │
        │ WOULD USER SAVE       │
        │ THE UNNECCESSARY      │
        │ USE OF ENERGY         │
        └──────────────────────┘
                  │
                  ▼
        ┌──────────────────────────┐
        │ GAMIFYING THE LIST OF    │
        │ THINGS THE USER WOULD    │
        │ HAVE DONE FROM THE       │
        │ SAVED MONEY.             │
        └──────────────────────────┘
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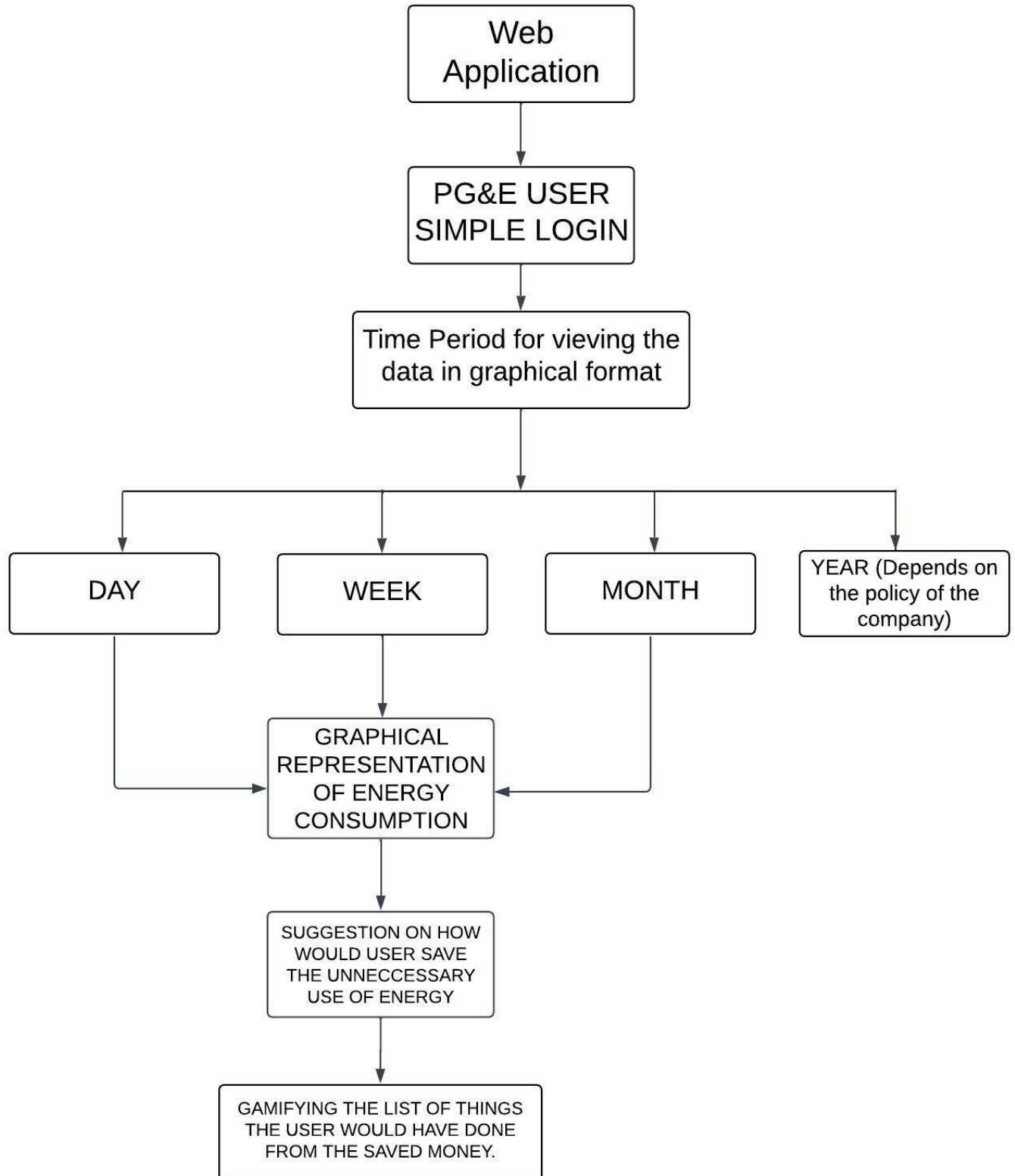
Hierarchical Task Analysis Summary:

From the Hierarchical Task Analysis the summary is as follows.

1. Firstly the website will have a very simple login for the PG&E user so that they can view their own data about the consumptions.
2. Then the user will be assigned to the User interface page.
3. The user will then have to select the time period in which the user would like to see the data in graphical format.
4. Time period will be divided into day, week and month options.
5. According to the selection of time period the user will be able to view the graphical representation of his/her own data.
6. Then user can analyze the data and see where the user can avoid unnecessary usage
7. Lastly, the application will give a list of suggestions that will connect emotionally, about what the user would have done if they would have saved the energy.

Scientist Interview notes :

(Both the meetings were interactive sections with the scientist in the forms of question and answers.)
This were the notes taken during the meeting

Interview 1 Meeting Notes :

1. Discussion regarding the app description.
2. Who will be user, user type and identification of specific user.
3. What will be the final outcome of the application?
4. How will PG&E users benefit from the web applications?
5. How will the initial version of the application work?
6. What should the user interface look like?
7. The software technologies required for the use of projects.

Interview 2 Meeting Notes :

1. Correction in User goal document.
2. Discussed primary, secondary and Tertiary users.
3. Discussed in depth regarding the application.
4. How should the interface be like single phase or multiphase ?
5. Discussing data presenting techniques.
6. Challenges in the field of plotting graphs
7. Gamifying the applications so more users would like to use it.
8. How to make feedback on the applications and relate that to emotions by suggesting the tips and techniques.
9. Discussion about overlaying different data comparing them with previous data and trying to see the progress.
10. Working on edge cases of the data and discussing few solutions for future problems.