



Final Report – EZ Lert Reminder System

INFM 480: Capstone for IT and Informatics

By: Chance Levinson

Instructor: Dr. Liu

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Acknowledgements

I would like to express my deep gratitude to Dr. Liu for her guidance, positive encouragement and insight for my Capstone research project. My special thanks are extended to the staff of Mercer University for providing me the knowledge and tools I needed to get started in my IT career. I also like to thank Jean Paul for providing me with the knowledge on HIPPA regulations and the medical field. I wish to acknowledge the help provided by the Horizon Group manager for his project planning direction and IT technical expertise. I would like to offer my special thanks to my peers and other end users for the feedback and support. My wife Paola Levinson also deserves my sincere gratitude for her assistance in testing my prototypes and offering engineering-related input on my work. Finally, I'd like to thank my family for their encouragement and support throughout my study.

Background

Executive Summary

EZLert is a company that offers their customers an easy to use reminder service. The target audience for EZLert includes, but is not restricted to the elderly and memory diminished. Health care facilities may utilize our services to help with their clients' needs. The consumer will receive outstanding customer care from this easy to use reminder system. EZ Lert will provide them peace of mind regarding remembering appointments and other reminders.

EZ Lert is headquartered in Atlanta, Georgia. It was founded in 2022. The founders are Griffin Quanula and Chance Levinson. Our primary goal is to serve our community and deliver the finest customer service possible using cutting-edge technologies. EZLert is a phenomenal third-party solution that will take care of reminding clients about critical reminders and upcoming appointments. We will provide fast and effective communication methods to meet everyone's needs and wants. We have the state of the art AI technology that will remind our clients about upcoming appointments. This reminder can be in the form of an email, call, or via text. However, we will have a future package option for users to receive phone call reminders from one of our live agents. This feature will bring the human and personal relationship to our clients.

Needs Finding

Why would our target audience need a reminder system? Over 27 million people worldwide are now experiencing dementia, and this number is projected to triple by 2050. As the world population's lifespan increases, so does the statistical probability that the elderly may suffer from memory impairment. According to the National library of medicine, "*Assistive*

technology can decrease the burden of care, increase the independence of people with health conditions, and improve the well-being of people and their careers".

Oftentimes, users ignore these alerts. With the premium package of the software, users can have a representative call them at their reminder time to ensure that the task has been completed. Through automation or a more personalized approach, EZLert software will assist our clients by having an agent notify them of forthcoming appointments or reminders. This will ensure that our users are not dismissing reminders. Implementation of this program should improve the health of its overall user. Each user will become adjusted to their schedule and have a better lifestyle that considers their healthcare needs. In the future, we anticipate that this will become a vital part of the healthcare industry, ensuring that the time for treatment and diagnosis is maximized.

EZLert's primary targeted audience is the elderly and memory diminished. There are a few companies that specialize automated reminders and devices that have features that allow personalization and reminders. By emphasizing user-friendly reminder services and enabling human connection, EZLert sets itself apart from its competitors. We offer multiple methods of communication to our end users to remind them about their upcoming reminders. In the future, we will be expanding our services and offer our users the option to receive reminders from live agents. Many people receive tens to hundreds of spam calls and emails everyday in which people may overlook the notifications and alerts. That's why we provide many options for our clients to receive their reminders to meet their needs.

Project Planning and Management

Project Timeline / Project Management

EZ Lert Capstone project is scheduled to be completed on Thursday, December 15, 2022.

Below is a summary of the project planning projection schedule for the month of September and October:

Capstone Project - EZ Lert

... **November** 18 Items

<input type="checkbox"/>	Item	Person	Status	Date	Description
<input type="checkbox"/>	Needs Finding		Done	Sep 14	Created needs findings data for Capstone Pro...
<input type="checkbox"/>	Tasklist		Done	Sep 28	Develop task list for user
<input type="checkbox"/>	Project Scope		Done	Sep 28	Develop project scope
<input type="checkbox"/>	Success Measurements		Done	Oct 21	Measurements of success
<input type="checkbox"/>	Personas		Done	Sep 23	Develop personas for development of app
<input type="checkbox"/>	Storyboards		Working on it	Oct 21	Develop storyboards for development of app
<input type="checkbox"/>	Site Structure		Done	Oct 21	Develop a site structure to follow during the de...
<input type="checkbox"/>	Data Base Design		Working on it	Nov 26	Create Data Base Design
<input type="checkbox"/>	Receive Approval from JP		Done	Oct 21	Finalize that Jp will assist me during my capst...
<input type="checkbox"/>	First Prototype		Done	Oct 21	Develop the first prototype
<input type="checkbox"/>	First Interview with JP		Done	Oct 29	Interview with JP about project
<input type="checkbox"/>	Update Prototype		Done	Nov 5	Update 1st Prototype
<input type="checkbox"/>	1st Testing with JP		Done	Nov 12	Test with end user
<input type="checkbox"/>	Update Prototype		Done	Nov 17	Update for the 2nd Prototype
<input type="checkbox"/>	Send out 15 Surveys		Working on it	Nov 17	Send out surveys with link to first prototype
<input type="checkbox"/>	Finalize 2nd Prototype		Working on it	Nov 17	Finalize 2nd Prototype
<input type="checkbox"/>	Eye Tracking		Working on it	Nov 17	Use the Eye Tracking software to test 2nd Prot...
<input type="checkbox"/>	Start on Final Report		Working on it	Nov 18	Begin working on the Final Report

Next image is the project planning for the month of December:

▼ December

<input type="checkbox"/>	Item	Person	Status	Date	Description
<input type="checkbox"/>	Update Prototype			Dec 3	Update 2nd Prototype
<input type="checkbox"/>	Test 3rd Prototype			Dec 6	Test out 3rd Prototype
<input type="checkbox"/>	Finalize Testing			Dec 7	Final Testing with End user
<input type="checkbox"/>	Finalize Final Prototype			Dec 9	Final Prototype that improves based off of feed...
<input type="checkbox"/>	Finalize Final Report			Dec 10	Finalize Final Report
<input type="checkbox"/>	Present Report			Dec 8	Present to Class

A list of every task that was completed by week is provided below:

Week 1

- Establish Timeline
- Focus on Prototype I improvements
- Interview JP
- Establish Landing Page

Comments:

- Finished landing page early so I'm going to start working on prototype II.
- Spoke with Dr. Liu, in regards to Database Design. Focus on the structure of it.

Week 2

- Start Prototype II
- Improve Landing Page
- Improve TimeLine
- Needs Finding
- Measurements of Success

Comments:

- Issues with adding animations to Prototype II.
- Added more content to my landing page.
- Spoke with JP on the phone for 15 minutes regarding EZ Lert.

Week 3

- Continue Prototype II
- (WIP) Personas

Comments:

- Testing to find broken links. Found many during the "What IF Scenarios".

- Added more content to my landing page.
- I need to add more details to Personas and update them to my target audience.

Week 4

- Eye Tracking Test
- Testing with JP
- Begin Prototype III
- Start Final Project Report
- Database Design

Comments:

- Eye tracking test didn't go as planned. Software was not compatible.
- Met Griffin for the first time in person. She tested my prototype II.

Week 5

- Finish Database Design
- Begin Prototype III
- Send Survey
- Continue Final Project Report

Comments:

- Issues with Checkboxes for the prototype.
- I sent out 20 surveys with links.

Week 6

- Finish Database Design
- Begin Prototype III
- Send Survey
- Continue Final Project Report

Comments:

- Improve the Tasks list to show off Scenarios and features
- Improved "Profile Page" and "Profile Set up"

Week 7

- Finish Prototype III
- Test Prototype III
- Analyze Survey Results
- Start Powerpoint Presentation
- Continue Final Project Report

Comments:

- Did not receive the amount of feedback that I was wanting to receive.
- Finished the last “Polishing” phase
- Finished Database Design.

Week 8

- Review Prototype III
- Review Report
- Review Powerpoint Presentation
- Present Capstone Project

Inconveniently, the intended timeline differed from what really occurred. I had some setbacks that pushed some tasks to be completed at a later date. However, in general, I completed the majority of tasks on time. To keep up with the fast-paced workplace throughout the last eight weeks, the planning phase was essential to the success of EZ Lert. The past eight weeks have also taught me that nothing goes exactly as you want it to, and you must prepare for obstacles and have a detailed plan on how to overcome them.

Project Scope

As previously discussed, EZ Lert is a reminder system that is focused for the elderly and memory diminished. This website should be easy to use by all audiences. The key features are: Add, Delete, and Add back reminders. The process goal of those key features should only take no more than 3 clicks.

EZ Lert prototype III key features have all been completed. I also added a multiview feature for users to view their reminders in: Monthly, Weekly, or Daily view. These features

have been tested successfully by my client, Jean Paul. There are some basic design concepts implemented such as: confirmation of editing reminders, personal information, and logging out.

Project Deliverables

EZ Lert's primary focus is to implement an easy to use reminder system for web application use. Our secondary objective is to provide the user the choice to enter their prescription and specific dosage information. Our final objective is to make the website as simple as possible so that everyone, regardless of age or background, may simply access our services. Our prototypes were created using Adobe XD. That stated, it does NOT store the personal information of end users, and some interaction features are limited.

Apex 1.0 -Prototype I (35 XD Pages)

Apex 2.0 -Prototype II (37 XD Pages)

Apex 3.0 -Prototype III (70 XD Pages)

Success Measurement

EZ Lert's Grading Rubric

9.5 < Rating or 95% and Above = Complete

9.4 > Rating or 94% and Below = Not Complete

EZ Lert's Goals to Achieve

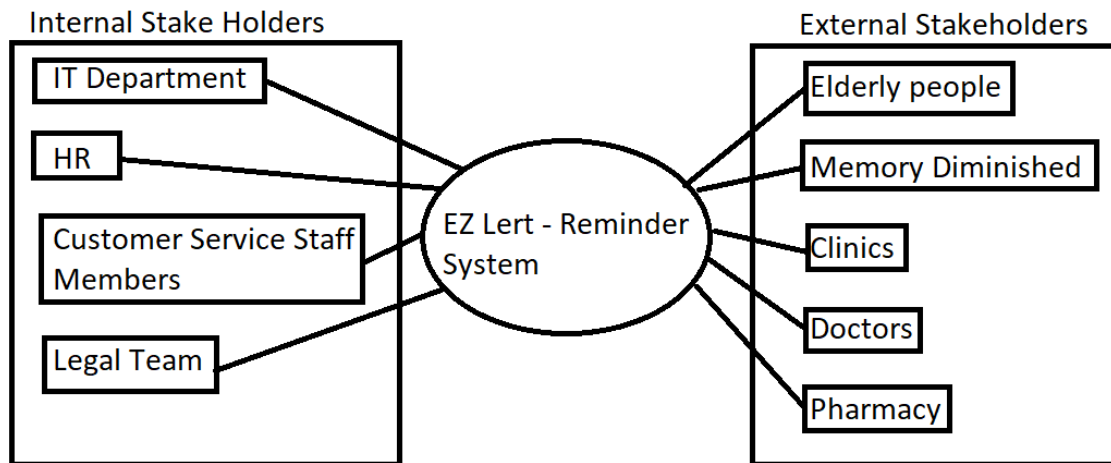
1. 95% of our clients must be able to Log in/Sign up.
2. 95% of our clients must be able to add upcoming appointments.
3. 95% of our clients must be able to view upcoming appointments.
4. 95% of our clients must be able to delete upcoming appointments.

I chose these goals because the core concept of EZ Lert is creating an account and managing your reminders. If these core concepts cannot be achieved then this project is not completed.

System Design

Stakeholders Map

Our stakeholders are divided up into two categories: Internal and External stakeholders. Internal stakeholders are people whose interest in a company comes through a direct relationship, such as employment, ownership, or investment. External stakeholders include clients or customers, investors and shareholders, suppliers, government agencies and the wider community. The figure below represents which stakeholders are in which category.



Other Stakeholders:

- Providers
- Patients
- Users of application (18+ years of age who are elderly and memory diminished)
- EZ Lert Company employees

EZ Lert Business Stakeholders Map

<p style="text-align: center;"><u>Stakeholder Benefits and Engagement</u></p> <ul style="list-style-type: none"> ● Low Risk Investment ● Low PPEs ● High ROI ● Stock Investment Increase ● Stock Liquidity Options ● Annual Dividends ● Stakeholder Board membership at 15% Ownership ● Healthcare Industry is increasing and has high elasticity 	<p style="text-align: center;"><u>Stakeholder Management</u></p> <ul style="list-style-type: none"> ● Stakeholder Board Annual Meetings ● Stakeholder Management Executive (SME) responds to request and submits monthly statements ● The SME team reviews email submissions and requests.
<p style="text-align: center;"><u>General Operations</u></p> <ul style="list-style-type: none"> ● Case Managers review the workload of each representative and assign callbacks based on schedule hours ● Case Managers serve as the escalations team and handle any High priority callbacks 	<p style="text-align: center;"><u>Frontline Operations</u></p> <ul style="list-style-type: none"> ● Representatives receive incoming calls and text ● Schedule appointments and process general callbacks and reminders


Needs Finding

My key client is Jean Paul from the University of Pittsburgh. He is obtaining his PhD in the medical field. Our first initial conversation was over the phone in regards to the background of EZ Lert and my goal for this product. He was excited to be part of my research and development phase of the three prototypes. Figure 1 is the initial email from Jp confirming to take part of my research. Figure 2 is the script I wrote to conduct the first initial interview.

User Analysis/ Personas

Since our target audience is the elderly and memory diminished, these personas reflect our target audience.

Basic information



Jaime Jones

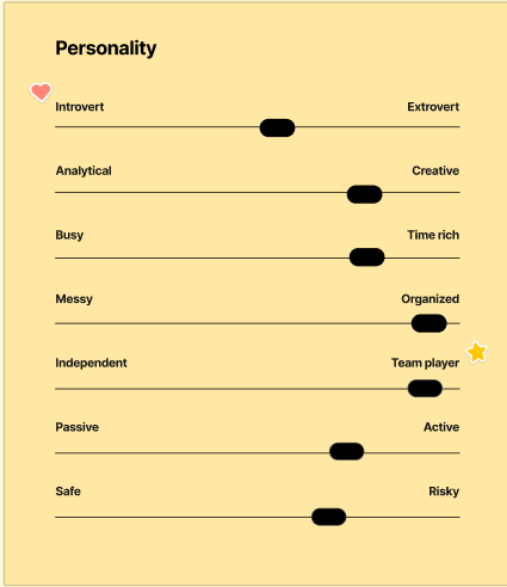
Live. Love. Laugh!

- 67
- Retired
- Atlanta, GA
- Memory Diminished

Bio


Jaime Jones is an award-winning freelance writer who specializes in finance topics. With over forty years of experience, she has been published in the Wall Street Journal, the New York Times and numerous trade journals, including the Harvard Business Review. She has also appeared as a financial expert on The Today Show and Good Morning, America. Jaime enjoys bringing sensible budgeting tips to people of all income levels. She currently lives in Atlanta, Georgia. She has been retired for 7 years.

Personality



Introvert	Extrovert
Introvert	Extrovert
Analytical	Creative
Busy	Time rich
Messy	Organized
Independent	Team player
Passive	Active
Safe	Risky

Basic information



Alex Drysdale

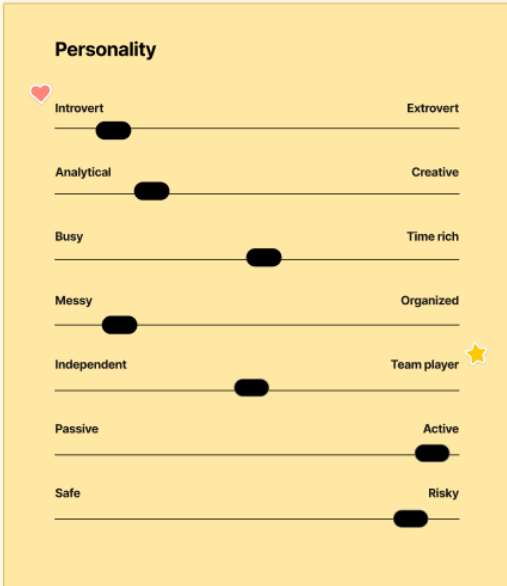
Traveling is my home!

- 78
- Retired
- Atlanta, GA

Bio

My name is Alex Drysdale and I was a Senior Web Developer for Oswald Technologies. I am an accomplished coder and programmer, and I enjoy using my skills to contribute to the exciting technological advances that happen every day at Oswald Tech. I graduated from the California Institute of Technology in 1970 with a bachelor's degree in software development. I retired in 2010.

Personality



Introvert	Extrovert
Introvert	Extrovert
Analytical	Creative
Busy	Time rich
Messy	Organized
Independent	Team player
Passive	Active
Safe	Risky

Basic information



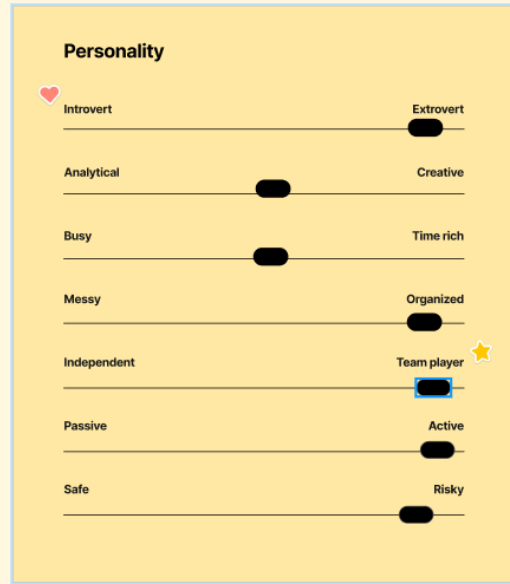
Mary Jones

Traveling is my home!

- 78
- Retired
- Atlanta, GA

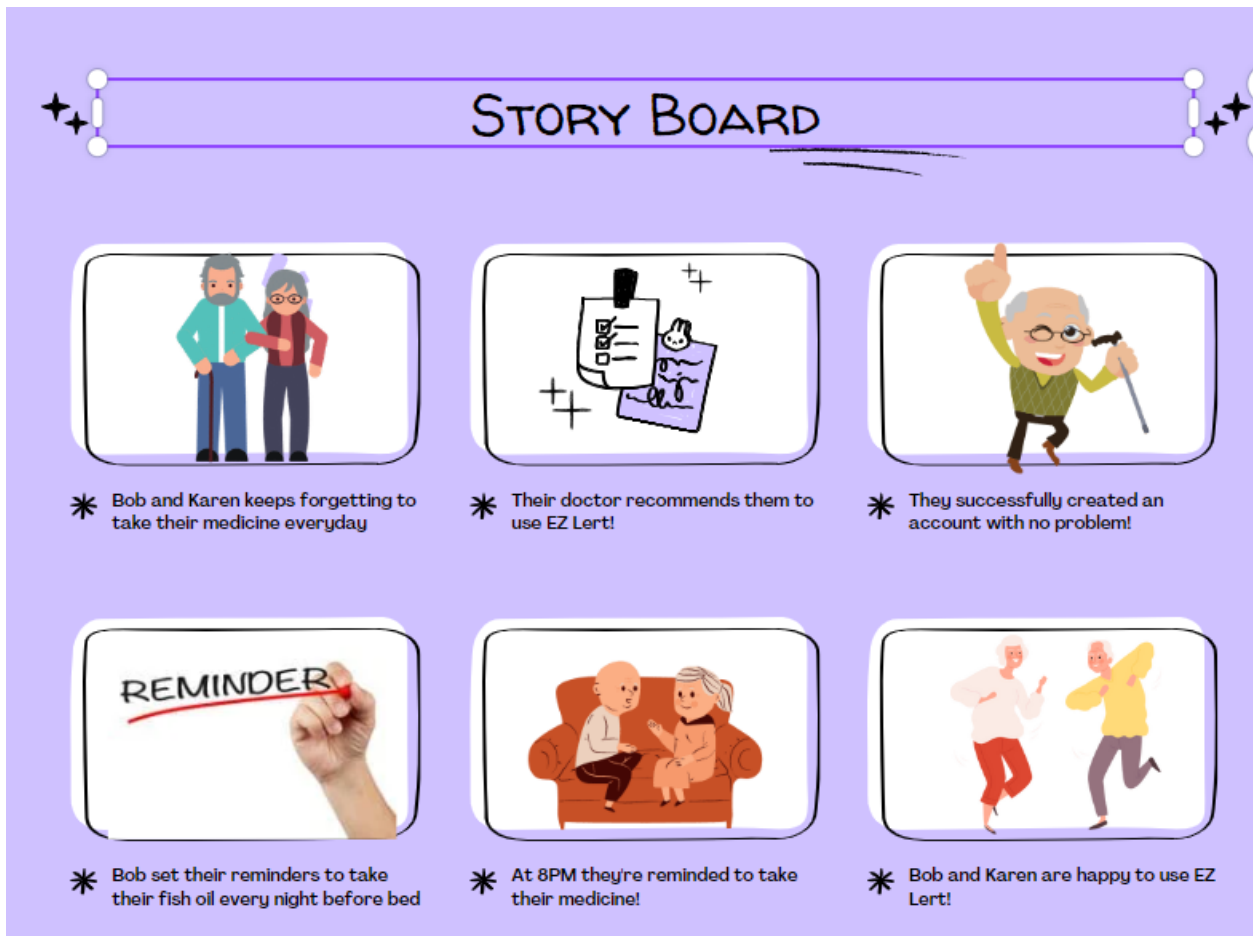
Bio

I was an Administrative Assistant for 45 years with a Fortune 500 company. I specialized in administrative technology and is responsible for educating other employees on using progressive systems and applications, including accounting software, mass communication procedures and organizational apps. Mary is inspired daily by her husband and their two daughters and eight grand babies. In her free time, Mary likes to travel, crochet and play video games with her grandson.



Storyboards

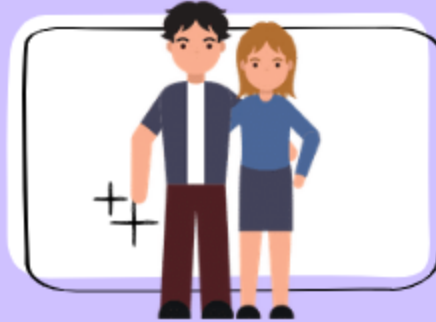
These storyboards were designed to show who our target audience is and how easy the setup process is. This website is not just for the use of the patient but a family member can help set up these reminders for their loved ones. EZ Lert is an easy to use system for anyone regardless of age or class.



STORY BOARD



* John wants to use EZ Lert for his grandpa



* John and his wife wants to set a reminder for his dad's doctors appointment this Thursday



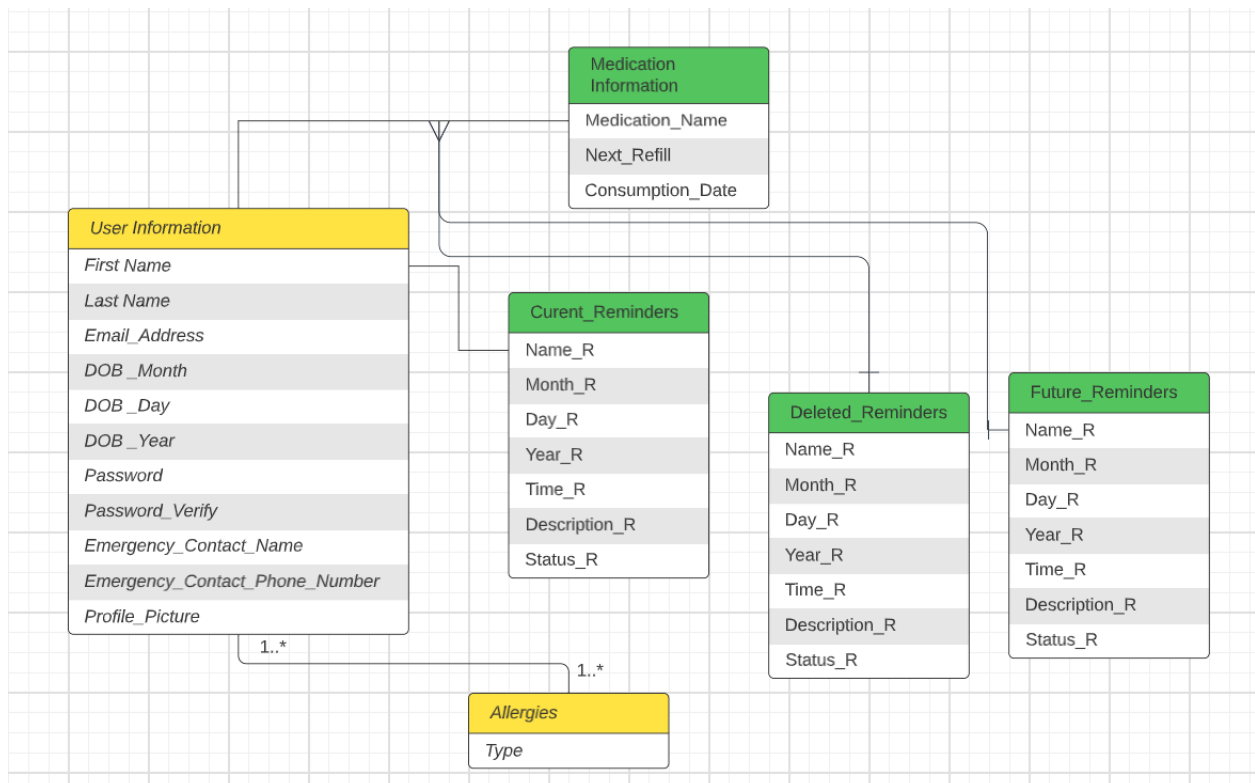
* John set his dad's reminder



* John's dad made it to his doctors appointment on time!

Database Design

Through the first and final prototypes, the Entity Relationship Diagram for the EZ Lert Reminder system is applied to all versions of EZ Lert. This ER is essential for modeling the data stored in a database. This information was one of the first design phases of the first prototype and is required to store their information. That information is stored in the "User Information" database. The reminder system is the centerpiece of EZ Lert, thus the database architecture was uncomplicated. To prevent data leaks and to give our users security, the logic had to make sense. The following information is required in the table below if the user wants to create, remove, or see future reminders. Medication information is used to store medication name, next refill date, and how often the user consumes it. The Allergies table gives the user the choice to select from the following allergies: Food, Drug, Insect/Pet, Allergic Asthma, and Other.



Function and Features

As previously discussed, EZ Lert is a reminder system that is focused for the elderly and memory diminished. This website should be easy to use by all audiences. The key features are:

- Add reminder
- Delete reminders
- Add back reminders
- Multiview option for users to see upcoming reminders
- Confirmation of changes

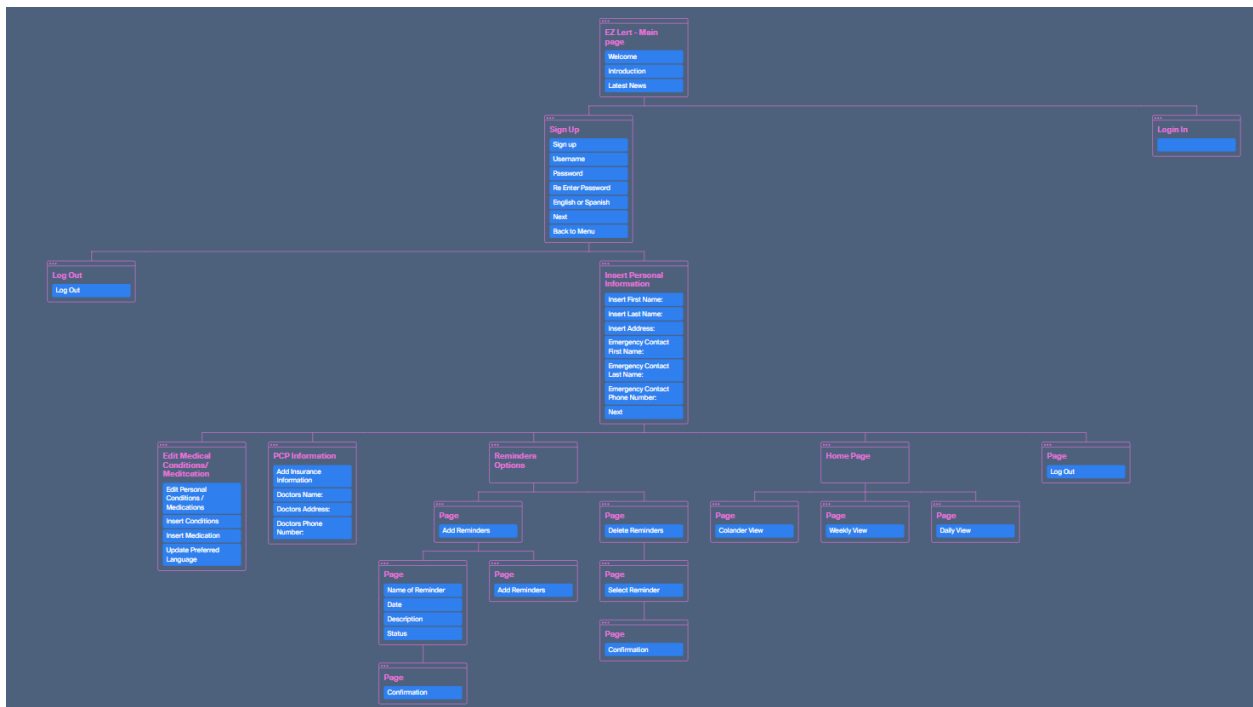
Task List

I chose these tasks because the core concept of EZ Lert is creating an account and managing your reminders. If these core concepts cannot be achieved then this project is not completed. EZ Lert wanted to focus on the key concepts and expand on them.

1. Bob wants to log in their account.
2. Susan wants to create an account.
3. John wants to add Allergies to their profile.
4. John wants to add upcoming appointments.
5. Susan wants to see deleted upcoming appointments.
6. Susan wants to delete an upcoming appointment.
7. Susan wants to add deleted appointments back to the schedule.
8. John wants to change the status of a reminder in the Home Tab.
9. John wants to edit the time of an upcoming reminder.
10. Bob wants to see helpful tips.
11. Bob wants to switch views in the home tab to weekly.

Site Structure

The Site structure was critical in establishing a baseline for EZ Lert. I wanted to design a simple format for the users to navigate to while not being overwhelmed or lost in the site. This site had more capabilities and options but was removed due to feedback from peers and JP. They thought it should be focused on just the reminders and not a chat feature and other miscellaneous features.



My first site structure for the EZ Lert website may be found at the URL below.

[My Site Structure Link Click Here!](#)

Usability study Methodology

Survey Format

This survey was created and sent out to 20 users and of which I received 16 responses. This format of the survey is to narrow down what possible issues that EZ Lert is currently facing with their users and how can we improve it. I received some wonderful feedback and these suggestions were later used in the final prototype III.

Welcome to EZ Lert Prototype II Survey!

Thank you for taking the time to fill out my survey for my Capstone Project! Please do not provide any personal information that you do not want disclosed as part of my final report. Please do not complete the survey if you do not agree with these terms. By continuing and submitting survey results, you confirm that you understand the terms and conditions of the information you're providing.



Directions: Choose a few tasks to perform and start at the beginning of the prototype to complete them. There are no incorrect answers, and please take notes for future application improvements. Thank you for your time!

To access the Prototype and Task List, as well as to learn more about EZ Lert, use the URL links below:

[About EZ Lert](#)

[Prototype Link](#)

[Task List Link](#)

 chance.c.levinson@gmail.com (not shared) [Switch account](#) 

* Required

Question #1

Which Tasks did you attempt? *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Question #2

Out of the tasks attempted, which task(s) did you NOT complete? *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- Completed All of them

Question #3

What challenges did you face while completing the tasks? *

Your answer

Question #4

How can we improve our application? *

Your answer

Question #5

What did you like about EZ Lert?

Your answer

Question #6

Overall, how satisfied are you with EZ Lert *

1 2 3 4 5

Not at all satisfied Extremely satisfied

System Development and System Version 1.0 (Apex Update 1.0)

The Prototype Report presents the results of the prototype demonstrator, as developed to verify the feasibility of EZ Lert. The objective of the prototyping phase is to prove the principles of the various aspects of EZ Lert's deliverable and refine the guidance if required. To demonstrate the EZ Lert's reminder system, a number of other components are required to illustrate the overall process. These components are described as follows.

EZ Lert's primary focus is to implement an easy to use reminder system for web application use. Our secondary objective is to provide the user the choice to enter their prescription and specific dosage information. Our final objective is to make the website as simple as possible so that everyone, regardless of age or background, may simply access our services. Our prototypes were created using Adobe XD. That stated, it does NOT store the personal information of end users, and some interaction features are limited.

Quick Note:

Apex 1.0 -Prototype I (35 XD Pages)

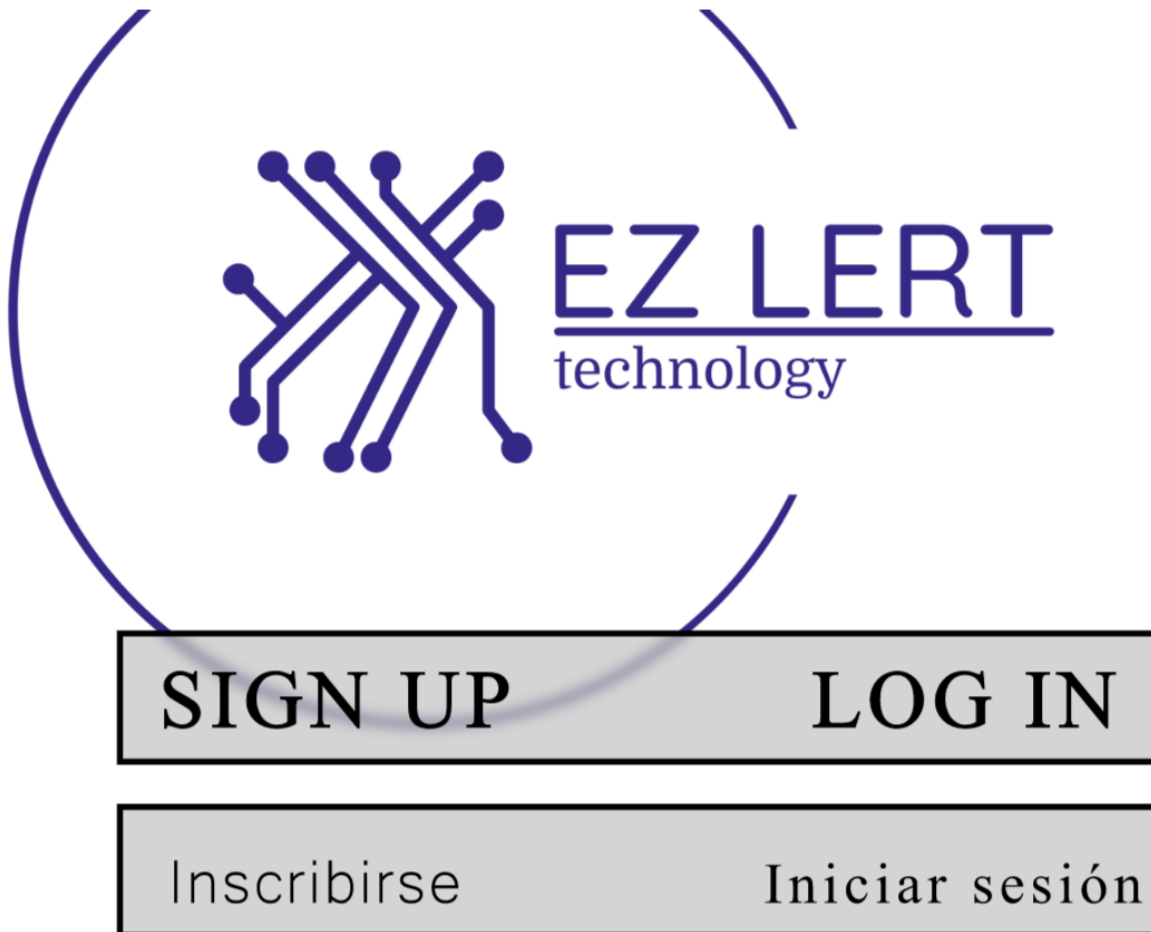
Apex 2.0 -Prototype II (37 XD Pages)

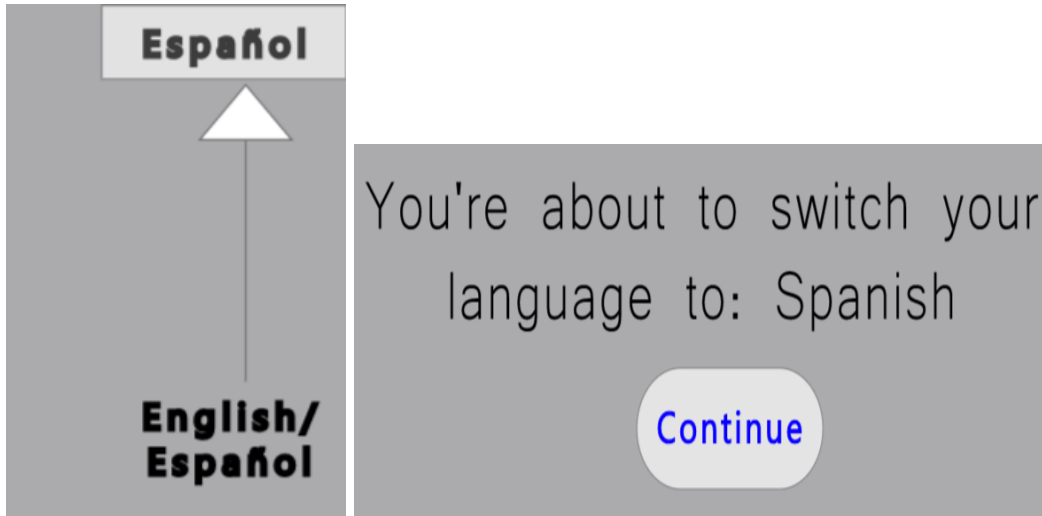
Apex 3.0 -Prototype III (70 XD Pages)

[Click Here to visit Prototype I \(Apex 1.0\)](#)

Key Feature of Prototype I (Apex 1.0)

The end user is first greeted with two options to “Sign Up” or “Log In”. I also included both options in Spanish. To keep true to our three objectives, Atlanta has a large minority of Spanish speaking people that could also benefit from our services. At EZ Lert, we believe in providing service to everyone, regardless of age, class, or ethnicity. According to the US census, *"By 2050, it is projected that the Hispanic population would exceed 40% of the overall population."* The end user has the ability to change their language anytime while logged into their account.





Español

You're about to switch your language to: Spanish

**English/
Español**

[Continue](#)

The image shows a language switch notification. On the left, a vertical bar contains a grey box at the top with the word "Español" in bold black text. Below it is a white upward-pointing triangle on a thin vertical line, and at the bottom is a grey box with "English/ Español" in bold black text. To the right, a larger grey box contains the text "You're about to switch your language to: Spanish" in a black sans-serif font. At the bottom right of this box is a rounded rectangular button with a light grey background and the word "Continue" in blue text.

Inscribirse

Primer Nombre

Apellido

Correo Electrónico

Contraseña

Regístrate

Usability Study Analysis for Version 1.0

Apex 1.0 - Improvements/ Goals

EZ Lert wanted to totally revamp the Welcome Screen and the overall theme throughout the site. The current design flaw at the first screen doesn't provide any information to the user and doesn't give them the option to explore the site and learn more. The profile background became a distraction with the dark theme buttons. There were a few broken links between cycling from the reminder tab and the profile. I had a usability testing session with JP for Apex 1.0. Below was a list of recommended improvements from him:

- Have a consistent site theme and design
- Remove the chat feature
- Simplify and expand on the reminder system

I went back and revisited the Heuristic Evaluation guidelines based on these comments, emphasizing consistency and user-friendliness. As a developer for EZ Lert, I wanted to utilize "What IF" scenarios and add more interaction for the user for these prototypes. After a few days investigating and practicing, I was able to successfully learn how to add them to Apex 2.0.

Measurements of Success for EZ Lert

EZ Lert's Ratings

9.5 < Rating or 95% and Above **Complete**

9.4 > Rating or 94% and Below **Not Complete**

95% of our clients must be able to Log in/Sign up.

95% of our clients must be able to add upcoming appointments.

95% of our clients must be able to view upcoming appointments.

95% of our clients must be able to delete upcoming appointments.

System Development and System Version 2.0 (Apex Update 2.0)

General

The first prototype was successful in establishing a baseline on how I would like to see the future of EZ Lert web application. However, from the feedback from peers, Jean Paul, and Dr. Liu, we have a lot of work to do. Apex 2.0, had major improvements and we were getting

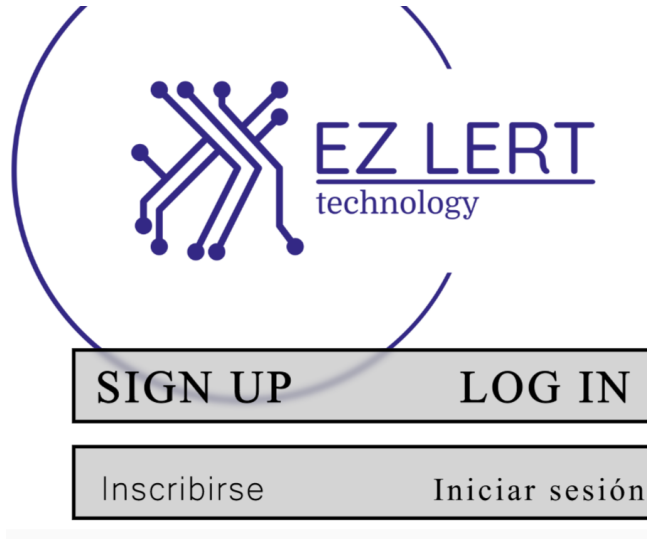
close to the end of my Capstone project. It lasted almost three weeks of development and testing. The main focus of 2.0 was to keep the consistency the same throughout the site and revamp the Reminder and Home page.

[Click Here to visit Prototype II \(Apex 2.0\)](#)

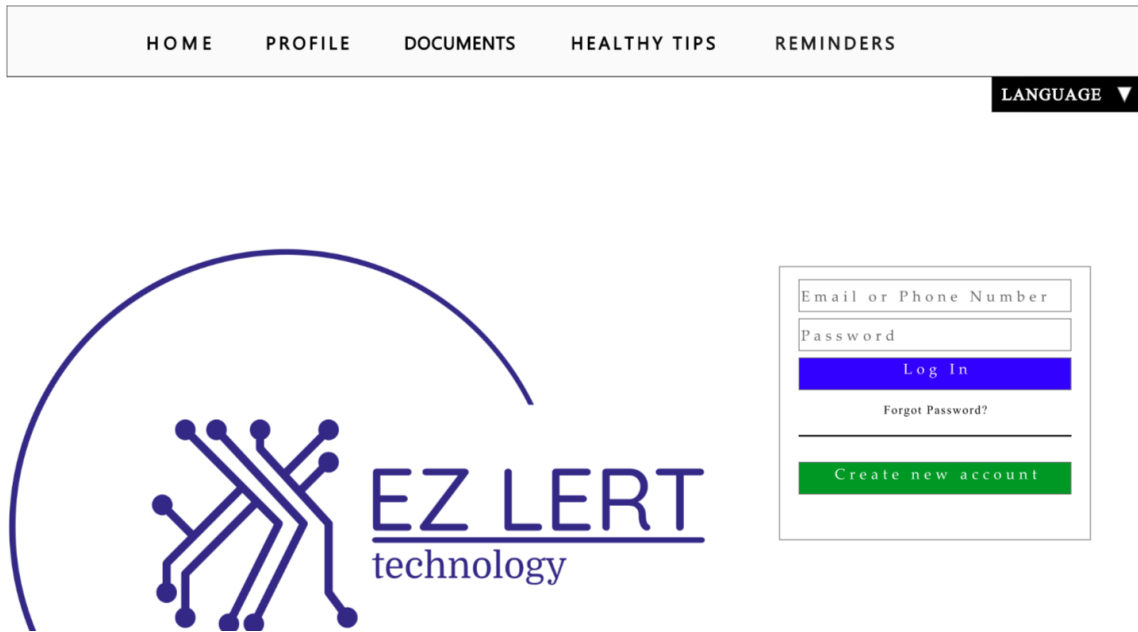
Key Feature of Prototype II (Apex 2.0)

The first major improvement of design is the landing page of the website. The image comparison below is from Apex 1.0 and Apex 2.0.

Apex 1.0 - Landing Page



Apex 2.0 - Landing Page



The user may access the Documents and Healthy Tips pages using this new design without creating an account. Also, I added the “Forgot Password” button that will guide the user to recover their profile and create a new password. This feature was not available in Apex 1.0. After clicking the “Create new account” button, the profile set up has been totally revamped. I simplified the editing process of information and cleaned up the theme and kept consistency throughout the site. See images below:

Apex 1.0 - Profile Setup

espano

Audrey Marrero
AudreyMarrero@mail.com [Edit](#)

Address: 1234 Smith Street. Atlanta, GA [Edit](#)

*Phone Number: [Edit](#)

*Date of Birth: [Edit](#)

*Emergency Contact Name: [Edit](#)

*Emergency Contact Phone Number: [Edit](#)

Primary Care Physician Name: [Edit](#)

Primary Care Physician Address: [Edit](#)

*Phone Number: [Edit](#)

Allergies [Edit](#)

Food Allergies: [Edit](#)

Drug Allergies: [Edit](#)

Insect/ Pet Allergies: [Edit](#)

Allergic Allergies: [Edit](#)

Other: [Edit](#)

Are you under the age of 18?

[Back](#)

Apex 2.0 - Profile Setup

HOME PROFILE DOCUMENTS HEALTHY TIPS REMINDERS LOG OUT

LANGUAGE ▼

Audrey Marrero
AudreyMarrero@mail.com [Edit](#)

Account Set Up

Address: 1234 Smith Street. Atlanta, GA [Edit](#)

*Phone Number: [Edit](#)

*Date of Birth: [Edit](#)

*Emergency Contact Name: [Edit](#)

*Emergency Contact Phone Number: [Edit](#)

Primary Care Physician Name: [Edit](#)

Primary Care Physician Address: [Edit](#)

*Phone Number: [Edit](#)

Allergies [Edit](#)

Food Allergies: [Edit](#)

Drug Allergies: [Edit](#)

Insect/ Pet Allergies: [Edit](#)

Allergic Allergies: [Edit](#)

Other: [Edit](#)

[ALLERGIES ▼](#)

[Save](#)

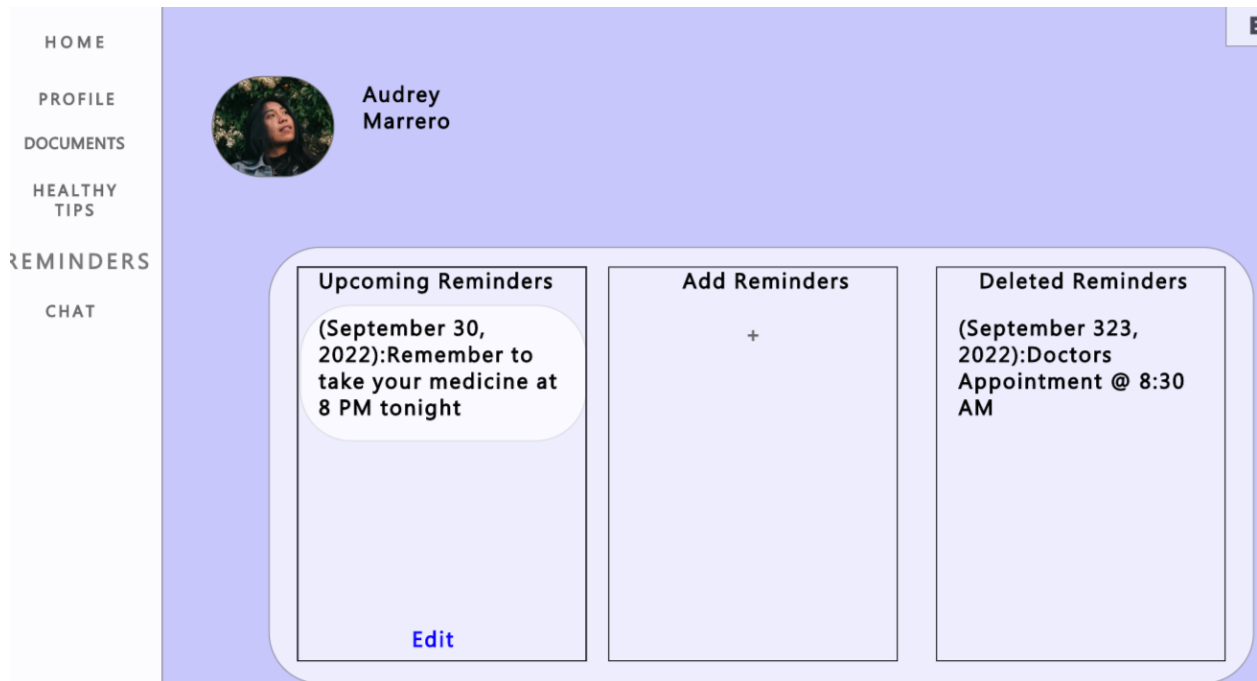
For future expansion, I added a feature for the user to click on the “Allergies” button, then it will drop down. This modification practice was utilized for choosing "Language" and was a Beta test for future features in Apex 3.0.

Apex 2.0 - Allergies Drop Down (BETA)



The next big feature change was the Reminders page. This addition was designed to allow the user to quickly see and update today's, future, and deleted reminders.


Apex 1.0 - Reminders Page



Apex 2.0 - Reminders Page

HOME PROFILE DOCUMENTS HEALTHY TIPS REMINDERS LOG OUT

LANGUAGE ▼

 Audrey Marrero
AudreyMarrero@mail.com [Edit](#)

Reminder Setup

Today's Reminders

- Doctor's Appointment [Edit](#)
Time: 8:00 AM
Date: November 21
Description: Appointment with Dr. Phil
- Prescription - Ibuprofen [Edit](#)
Time: 9:00 AM
Date: November 21
Description: Take medicine

Future Reminders

- VA Appointment [Edit](#)
Time: 10:00 AM
Date: November 22
Description: Appointment at the VA for Blood work

Deleted Reminders

- Group Meeting [ADD REMINDER BACK](#)
Time: 2:00 PM
Date: November 19
Description: Meeting with friends

Now let's compare adding a new reminder with Apex 1.0 and Apex 2.0.

Apex 1.0 - Adding Reminder

Adding Reminders

Name of Reminder:	<input type="text"/>	Edit
Date:	<input type="text"/>	Edit
Time:	<input type="text"/>	Edit
Notes:	<input type="text"/>	Edit

Apex 2.0 - Adding Reminder

New Reminder

Reminder Name

Month ▼ Day ▼ Year ▼

Time ▼

Description

Save Reminder

Don't Save

Apex 2.0 actually shows the user what their reminders page would look like if it were deleted, in contrast to Apex1.0, which did not include a mechanism to delete reminders. This is one of the scenario situations I wanted to implement in 2.0. Below is a scenario for deleting a reminder.

User Case 1: Audrey wants to delete the Prescription - Ibuprofen reminder.

Step 1 - Click on “[Edit](#)” next to the Prescription - Ibuprofen reminder

Step 2 - Click on “Delete Reminder” button

Edit Reminder

Prescription - Ibuprofen

Nov ▼ 21 ▼ 2022 ▼

9:00 AM ▼

Take Medicine

Save Reminder

Delete Reminder

Step 3 - View Today’s reminder to verify it was deleted

Today's Reminders

- Doctor's Appointment [Edit](#)
 Time: 8:00 AM
 Date: November 21
 Description: Appointment with Dr. Phil

ADD REMINDER

The final main update to Apex 2.0 is the Home page. This view is the default view for the user after logging into their account. This view is intended to provide a quick overview of current and upcoming reminders in a multiview option in a single page. A calendar is included to see previous reminders and upcoming ones in the month.

Apex 2.0 - Home Page

Welcome Back, Aubrey! LANGUAGE ▼

Today's Reminders

- Doctor's Appointment [Details](#)
Status: Completed ✓
- Prescription - Ibuprofen [Details](#)
Status: Completed ✓
- Prescription - Vitamins [Details](#)
Status: Not Completed

Quick Add Here!


This Week's Reminders

- VA Appointment
Day: Tuesday (November 22) [Details](#)
- Prescription Pickup
Day: Tuesday (November 23) [Details](#)

NOVEMBER 2022						
SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6 End Daylight Savings	7	8 VA Appointment	9	10	11 Veterans Day	12
13	14	15	16	17	18	19 Group Meeting
20	21 MULTIPLE TASKS	22 VA Appointment	23 Prescription Pickup	24 Thanksgiving Day	25 Black Friday	26
27	28	29	30			

Key

- Completed
- Upcoming
- Not Completed



The home page has the feature to click on a reminder in the calendar and it will pull up reminder options to edit and delete. The current day is represented by the pink box on the calendar, and the end user will see "Multiple Tasks" for that day if they have more than one reminder. If they click on it, a window will appear to show a detailed view of the reminders for that day.

Apex 2.0 - Multiple Task Window

Reminder Information

Today's Reminders

- Doctor's Appointment [Edit](#)
Time: 8:00 AM
Date: November 21
Description: Appointment with
Dr. Phil

- Prescription - Ibuprofen [Edit](#)
Time: 9:00 AM
Date: November 21
Description: Take medicine

- Prescription - Vitamins [Edit](#)
Time: 10:00 AM
Date: November 21
Description: Take Fish Oil

[Back](#)

Usability Study Analysis for Version 2.0

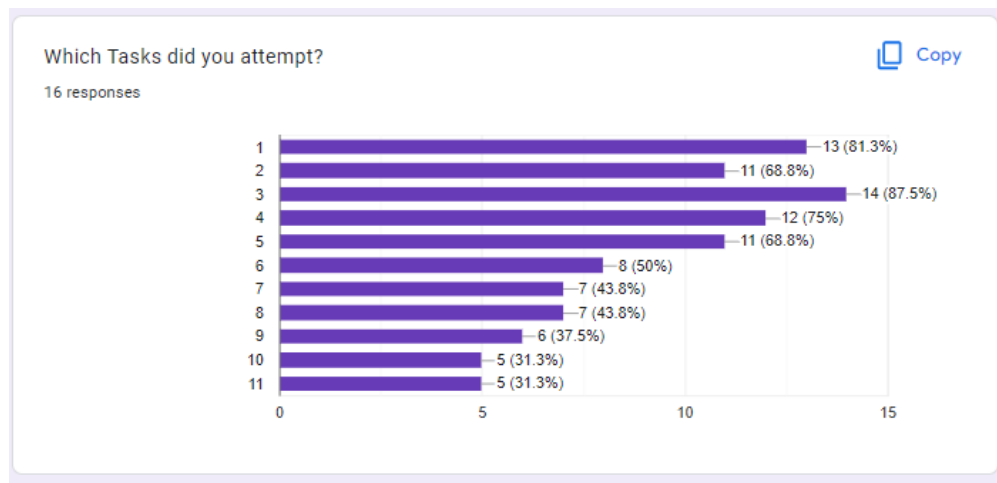
Apex 2.0 - Improvements/ Goals

From the results that I received below, these are the key features, I want to expand on and improve:

- Profile page
- Create Profile Page
- Fix broken links in Healthy Tip Page
- Add more usability for the Edit prescriptions/ Allergies

Survey II results

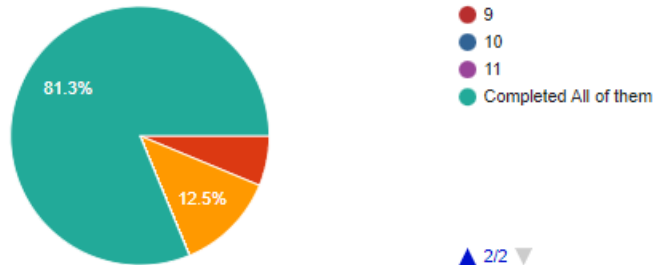
This prototype I had made a google survey with easy to use links to test the task list and the overall design of the website. Below are the results of the survey:



Red = 1 & Orange = 2

Out of the tasks attempted, which task(s) did you NOT complete?

16 responses



What challenges did you face while completing the tasks?

16 responses

Task #3 and #11 were a little confusing because on #3 when clicking save it went to reminders page and #11 had the same outcome.

P; Couldn't edit reminders or do anything on website without hitting save after adding deleted reminder back to schedule; have to shift "Status" clickability when trying to change status of reminder; when try to change status of reminder it prompts to new reminder and then doesn't go back to "Home" page it goes to "Reminder Setup" page; broken link for "Documents"; can't access "Healthy Tips" from "Home" page

Some broken links and confusion with Task 3

I didn't get any challenges while completing these tasks

No

No interaction? Is this because of XD?

Allergies didn't save

How can we improve our application?

16 responses

- Make the profile set up more user friendly
- A confirmation message can be displayed for task #3 and #11 to show the items saved.
- Fix broken links (see above); update "Status" of reminder on "Home" page & "Reminder" page
- Improve Profile page. No interaction?
- More views for the home page?
- Little confusion on some pages but overall it was good!
- Make the window box more define bc it's hard to focus on ithe window when the background is not blurred out
- Animations
- Make the profile page simpler

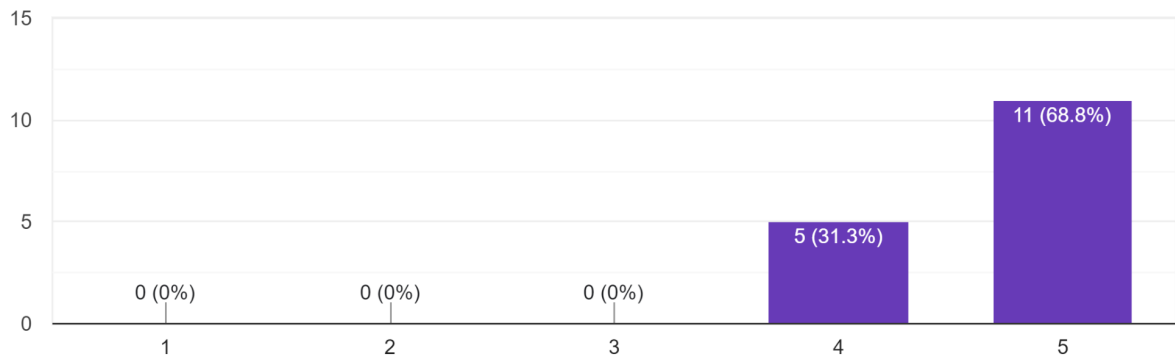
What did you like about EZ Lert?

16 responses

- The flow of the website! Great work!
- I really liked how simple and easy to use the application was, especially the calendar that displayed the reminders!
- User friendly
- The overall design of it!
- I like the home page and how easy it was to make reminders
- Simple to use
- Easy to use!
- I'm not good with computers but it was easy to use!
- Everything was pretty easy to use and was able to find everything

Overall, how satisfied are you with EZ Lert

16 responses



To conclude the results, the majority of people were able to complete the core concepts which were: Login/Sign up, add/view/delete reminders. However, some people were confused about the concept of Adobe XD. The major comment about improving EZ Lert is adding a confirmation message for adding, editing, and removing items from the application.

95% of our clients must be able to Log in/Sign up. (16/16) Status: **COMPLETE**

95% of our clients must be able to add upcoming appointments. (16/16) Status: **COMPLETE**

95% of our clients must be able to view upcoming appointments. (16/16) Status: **COMPLETE**

95% of our clients must be able to delete upcoming appointments. (16/16) Status: **COMPLETE**

System Development and System Version 3.0 (Apex Update 3.0)

Following feedback from my peers and Dr. Liu, I decided to focus on revamping the Profile page, Home page, adding more interactions, and various scenarios to my last prototype. Apex 3.0, has the most XD pages out of all my prototypes for my Capstone project. These pages

include but are not limited to scenarios, different views, and adding confirmation pages while editing or deleting content.


[Click Here to visit Prototype III \(Apex 3.0\)](#)

Key Features of Prototype III (Apex 3.0)

The first revamp is the My Profile page where new users add or edit their profiles.

Apex 2.0 - My Profile

Account Set Up LANGUAGE ▼

 Audrey Marrero
AudreyMarrero@mail.com [Edit](#)

Address: 1234 Smith Street. Atlanta, GA	Edit	Allergies	Edit
*Phone Number:	Edit	Food Allergies:	Edit
*Date of Birth:	Edit	Drug Allergies:	Edit
*Emergency Contact Name:	Edit	Insect/ Pet Allergies:	Edit
*Emergency Contact Phone Number:	Edit	Allergic Allergies:	Edit
Primary Care Physician Name:	Edit	Other:	Edit
Primary Care Physician Address:	Edit		
*Phone Number:	Edit		

[ALLERGIES ▼](#)

Apex 3.0 - My Profile



Audrey Marrero
AudreyMarrero@mail.com [Edit](#)

My Profile

LANGUAGE

Personal Information

Address:
City: [Click here to add Address](#)
State: [Click here to add Address](#)
Zip Code:
DoB: [Click here to add DoB](#)
Phone Number: [Click here to add Phone Number](#)

Emergency Contact

Name: [Click here to Add Emergency Contact](#)
Phone Number:

Medical Information

Allergies:
 Food
 Drug
 Insect / Pet
 Allergic Asthma
 Other

Medication Information

Medication: [Click here to Add](#)
Next Refill:
Weekly Consumption: Sun Mon Tues Wed
 Thurs Fri Sat
[Add Medication](#)

The user may modify their information with only one click in this section. To let the user know that a section is available for editing and usage, EZ Lert has transformed all users' interactions into buttons or text that are blue, red, or green. The user may easily update their address by clicking the text that says "Click here to add Address" under "Personal Information."

Example can be seen below:

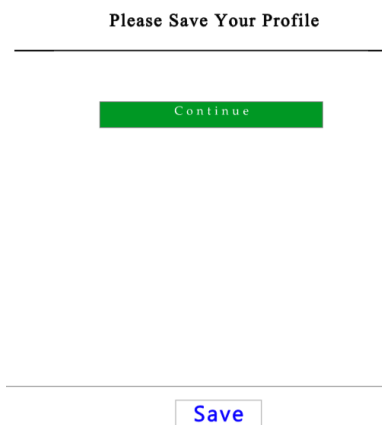
The screenshot shows the 'Address' editing window. On the left, the user's profile information is visible, including a photo of Audrey Marrero and her contact details. The 'Personal Information' section is expanded, showing fields for Address, City, State, Zip Code, DoB, and Phone Number. The 'Emergency Contact' section is also visible. The 'Address' window itself has a title bar 'Address' and four input fields: 'Street Address', 'City', 'State', and 'Zip Code'. Below these fields are two buttons: a green 'Save' button and a red 'Back' button.

After saving, the user will be prompted with this confirmation window:



During the set create account phase of setting up your profile, it's crucial to enforce the user to save their changes. I restricted all access to other pages except for the ones required for the profile setup. For Example, if the user clicked on the "Healthy Tips" page, they'll be prompted with this message:

Apex 3.0 - Save your profile



The medical Information also got an update, which allows the user to click on the allergies and will display with a blue box that it was selected. See image below:

Apex 3.0 - Check Boxes

Medical Information

Allergies:

Food

Drug

Insect / Pet

Allergic Asthma

Other

The Home page also received an update that allows the user to switch between the following views: Calendar, Weekly, Daily, and All. These views are different but have the same consistency and information throughout the end user's experience. The default view is the “All View” which consists of the calendar, Daily, and upcoming reminder column.

The calendar view gives the option to go forward or backwards one month. This provides an option for the end user to look back at previous reminders or look forward to them. They can also click on the reminders on the calendar to pull up a detailed view. The calendar view is below:

Apex 3.0 - Calendar View

HOME PROFILE DOCUMENTS HEALTHY TIPS REMINDERS LOG OUT

VIEW **Welcome Back, Aubrey!** LANGUAGE


Calander
Weekly
Daily
All

Quick Add Reminders!

Key
Completed
Upcoming
Not Completed

November 2022						
S	M	T	W	T	F	S
30	31	1	2	3	4	5
6	7	8 VA Appointment	9	10	11	12
13	14	15	16	17	18	19 Group Meeting
20	21 MULTIPLE TASKS	22 VA Appointment	23 Prescription Pickup	24	25	26
27	28	29	30	1	2	3

Previous Month Next Month



The weekly view gives a 7 day view of reminders for the following week. Just like the calendar view, the user is able to click on the reminders to edit the information. Below is the weekly view:

Apex 3.0 - Weekly View

The screenshot displays the Apex 3.0 Weekly View interface. At the top, there is a navigation bar with links for HOME, PROFILE, DOCUMENTS, HEALTHY TIPS, and LOG OUT. A 'VIEW' dropdown menu is open, showing options for Calander, Weekly, Daily, and All. The 'Daily' view is selected. The main content area shows a grid of reminders for the week of November 20-26, 2023. The 'Monday's Reminders (11/21)' column is highlighted with a pink border and contains three items: 'Doctor's Appointment' (Upcoming), 'Prescription-Ibuprofen' (Upcoming), and 'Prescription-Vitamins' (Not Completed). The 'Tuesday's Reminders (11/22)' column contains 'VA Appointment' (Upcoming). The 'Wednesday's Reminders (11/23)' column contains 'Prescription Pickup' (Upcoming). A 'Quick Add Reminders!' button is located below the grid. A 'Key' legend indicates that green text represents 'Completed', blue text represents 'Upcoming', and red text represents 'Not Completed'. The EZ LERT Primary logo is visible in the bottom left corner.

Monday's Reminders (11/20)	Monday's Reminders (11/21)	Tuesday's Reminders (11/22)	Wednesday's Reminders (11/23)	Thursday's Reminders (11/24)	Friday's Reminders (11/25)	Saturday's Reminders (11/26)
	Doctor's Appointment	VA Appointment	Prescription Pickup			
	Prescription-Ibuprofen					
	Prescription-Vitamins					

Quick Add Reminders!

Key

- Completed
- Upcoming
- Not Completed

The final view is the Daily view. This displays all reminders for that current day. The user is able to change the status of them with a simple two click process.

Apex 3.0 - Daily View

HOME PROFILE DOCUMENTS HEALTHY TIPS REMINDERS LOG OUT

VIEW ▾

- Calander
- Weekly
- Daily
- All

Key

- Completed
- Upcoming
- Not Completed

Welcome Back, Aubrey!

Today's Reminders

- Doctor's Appointment
Time: 8:00 AM
Date: November 21
Description: Appointment with Dr. Phil
STATUS ▾
- Prescription - Ibuprofen
Time: 9:00 AM
Date: November 21
Description: Take medicine
STATUS ▾
Completed
Not Completed

Quick Add Reminder!

With this view, comes a possible scenario that EZ Lert is able to successfully respond to in this prototype phase

User Case 1: Audrey wants to change the Doctor's appointment to “Not Complete”

Step 1: Click on the Status button

Step 2: Click on “Not Complete”

Apex 3.0 - Changing Status Pt.1

Today's Reminders

- Doctor's Appointment
Time: 8:00 AM
Date: November 21
Description: Appointment with Dr. Phil
STATUS ▾
Completed
Not Completed
- Prescription - Ibuprofen
Time: 9:00 AM
Date: November 21
Description: Take medicine
STATUS ▾

Quick Add Reminder!

User Case 2: Audrey wants both the Doctor's appointment and Prescription to “Not Complete”

Step 1: Click on the Status button on the “Prescription” Reminder.

Step 2: Click on “Not Complete”

Apex 3.0 - Changing Status Pt.2



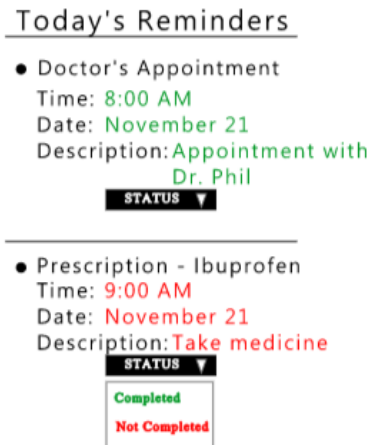
User Case 3: Audrey wants to change the Doctor's appointment to “ Complete” and leave

Prescription to “Not Complete”

Step 1: Click on Status button on the Doctor’s reminder

Step 2: Click on “Complete”

Apex 3.0 - Changing Status Pt.3



The final feature added is the ability to pull back deleted reminders and put them back into your calendar. This feature is important to us because it allows the user to revert and see deleted reminders.

User Case: Audrey wants to add the “Group Meeting” reminder back to her future reminders.

Step 1: Click on “Add Reminder Back” button

Step 2: Click on “Save Reminder” button

Apex 3.0 - Changing Status Pt.1

New Deleted Reminder

Group Meeting

Nov ▼ 27 ▼ 2022 ▼

Time ▼

Meeting with
Freinds

[Save Reminder](#)

[Delete Reminder](#)

Apex 3.0 - Changed Reminder

Future Reminders

- Doctor's Appointment [Edit](#)
Time: 10:00 AM
Date: November 22
Description: Appointment at the
VA for Blood work
- Group Meeting [Edit](#)
Time: 2:00 PM
Date: November 19
Description: Meeting with friends

[ADD REMINDER](#)

Deleted Reminders

Usability Study Analysis for Version 3.0

Apex 2.0 - Improvements/ Goals

This is the final prototype for the EZ Lert Capstone project. The last-minute details, such as fixing broken links and tweaking some of the animations, will be fixed. The next phase is implementing and creating the EZ Lert website since it has gone through multiple phases of planning, testing, and updating. My client, Jean Paul, was pleased with the final product and had this to say, *“Wow!This is the best one yet! I am very pleased how there’s a big difference from Apex 1.0 to Apex 3.0! Thank you for applying my feedback and making my dream a reality! This application has the potential of helping hundreds of thousands of people who suffer from memory problems. It can also appeal to the average person who struggles to remember important tasks.”*.

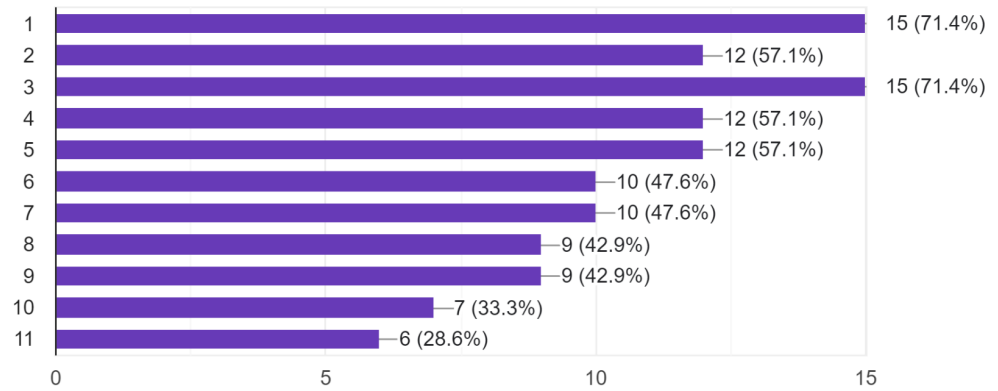
Measurement of Success by Prototype III - Apex 3.0

Survey from Prototype III

I sent out the same survey questions and received more replies. Survey II had 16 responses and survey III had 21. I received 100% of all tasks completed. The major feedback that I received was making it fully function. Adobe XD is not supposed to be a fully functioning website. This is to model how EZ Lert would look like and the flow and appearance.

Which Tasks did you attempt?

21 responses



What challenges did you face while completing the tasks?

21 responses

nothing. A lot better!

Much better than 2.0

I didn't see anything that stood out

I didn't have any issues

How can we improve our application?

21 responses

It's way smoother!

Make it operational

Make it into a fully functioning website

When will it be working?

What did you like about EZ Lert?

21 responses

Wow, Chance! Such a wonderful improvement! Great work!

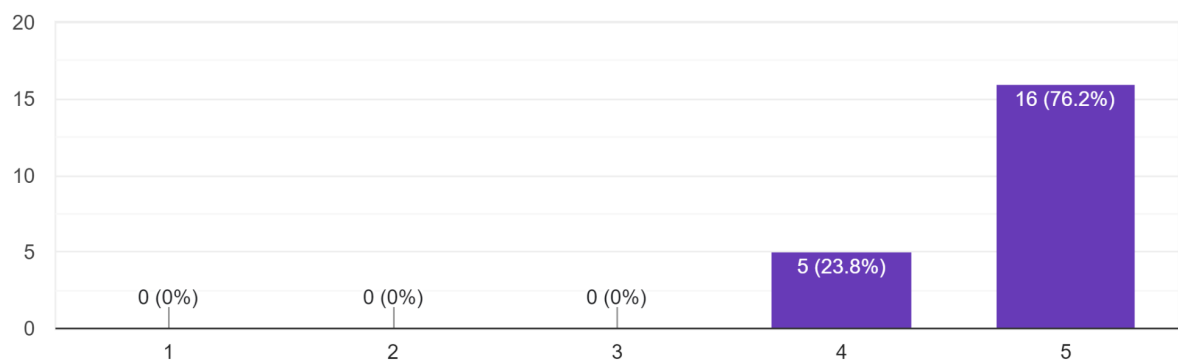
I like the way EZ Lert looks now!

Shoot! I'll use this when Its working hahaha!!

I enjoyed the flow of it all!

Overall, how satisfied are you with EZ Lert

21 responses



EZ Lert's Ratings

9.5 < Rating or 95% and Above Complete

9.4> Rating or 94% and Below Not Complete

Just like the second survey, our key concepts are below. I measured my success with these core concepts completed or not. Following this core concept evaluation, a rating for my main client Jean Paul will be shown. His ratings were based on three categories.

95% of our clients must be able to Log in/Sign up. (21/21) Status: COMPLETE

95% of our clients must be able to add upcoming appointments. (21/21) Status: COMPLETE

95% of our clients must be able to view upcoming appointments. (21/21) Status: COMPLETE

95% of our clients must be able to delete upcoming appointments. (21/21) Status: COMPLETE

Jean Paul's Rating

Prototype I - Apex 1.0

Appearance Rating: **7.4/ 10** Status: **NOT COMPLETE**

Flow Rating: **7.1/ 10** Status: **NOT COMPLETE**

Functionality Rating: **7.3/ 10** Status: **NOT COMPLETE**

Prototype II - Apex 2.0

Appearance Rating: **8.3/ 10** Status: **NOT COMPLETE**

Flow Rating: **8.0/ 10** Status: **NOT COMPLETE**

Functionality Rating: **8.5/ 10** Status: **NOT COMPLETE**

Prototype III - Apex 3.0

Appearance Rating: **9.6/ 10** Status: **COMPLETE**

Flow Rating: **9.7/ 10** Status: **COMPLETE**

Functionality Rating: **9.5/ 10** Status: **COMPLETE**

Conclusion

Over 27 million people worldwide are now experiencing dementia, and this number is projected to triple by 2050. As the world population's lifespan increases, so does the statistical probability that the elderly may suffer from memory impairment. EZ Lert's first mission is to assist the elderly and people who suffer from memory impairment with giving them the opportunity to create reminders. Our secondary objective is to provide the user the choice to enter their prescription and specific dosage information. Our final objective is to make the website as simple as possible so that everyone, regardless of age or background, may simply access our services. At EZ Lert, we believe in providing service to everyone, regardless of age, class, or ethnicity. This is why we implemented the Spanish option for our users.

After a lengthy period of planning, developing, and testing, I am delighted with my final EZ Lert prototype. The first prototype had 35 pages and I finished with 70 XD pages. When it comes to appearance and features, the first and third versions significantly differ from one another. This was made possible from the feedback of Dr. Liu, Jean Paul, and my peers. I now have the opportunity to fulfill a lifelong goal of mine and get a B.S. in Information Technology and Informatics at Mercer University. The values and professionalism will serve as my guide as I pursue my IT career and reach new heights. I appreciate you taking the time to read my final report on EZ Lert.

Appendix

Figure 1.

Good evening, Mr. Levinson!

I am contacting you per our conversation on the opportunity to volunteer for your Capstone Project.

I wish to be involved in the matter to the capacity that you see fit—given my expertise as a trained allied healthcare professional.

At your earliest convenience, please send me more details on what the project entails and my responsibilities as a volunteer. I look forward to the collaboration. Many thanks!

Best regards,

JP Marrero-Rivera, M.S.

Graduate Student Assistant
Department of Health and Human Development
School of Education at the University of Pittsburgh
Learner | Woo | Empathy | Input | Communication

32 Oak Hill Court, Pittsburgh, PA 15260
Office: 412-383-4048
Cell: 717-777-1675
Email: jpm190@pitt.edu

"The struggles along the way are only meant to shape you for your purpose" - Chadwick Boseman



Figure 2.

Interviewer: Chance Levinson
Client: Jean Paul Marrero
Meeting Type: Client/Product Interview
When: 10/29/2022 @11:00 AM EST
Where: Zoom

Background

EZ Lert is a company that offers their customers a reminder system that is multiplatform and easy to use. Jean Paul, our first client, wants to help his PhD clients by providing them with medication reminders and information. Jean Paul contacted EZ Lert for further information, and the team has set up an interview to discuss the client's goals and the vision of EZ Lert, as well as how we can assist in achieving these objectives.

Introduction

Good day, Jean Paul. I appreciate you taking the time today despite your busy schedule. My name is Chance, I am the Project Manager for INFM 400 for the EZ Lert Project. I'll ask you a few questions about the use and requirements you'd want to have with EZ Lert. With your permission, we would like to record this interview.

(START RECORDING)

Question: Can you tell us a little about the company?

Comments:

Question: What technological challenges does your field currently face? How can we solve them?

Comments:

Question: Can you explain how those challenges affect your business and/or customers?

Comments:

Question: What is your target audience for this project?

Comments:

Question: What features would you want to see in EZ Lert?

Comments:

Question: How would you like our services to be accessible to your users? EX: via phone and desktop

Comments:

Question: Can you identify any type of support your users may need?

Comments:

Question: Can you describe any regulations that may determine features that your application may require to remain compliant in your industry?

Comments:

Question: Can you tell us more about how you envision your authentication service? Many applications use a service which sends a text message to the user's registered phone number for their account.

Comments:

Question: Do you require our services for any further needs? Can you tell us any more services you may require?

Comments:

Ending:

We want to thank you again for your time. It has been a pleasure speaking with you today. Your feedback and input will be very valuable to help our team achieve your vision of EZ Lert. Have a wonderful day.

(END RECORDING)

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