

Valley Children's Hospital Telemedicine Cross Platform Mobile Application

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Background

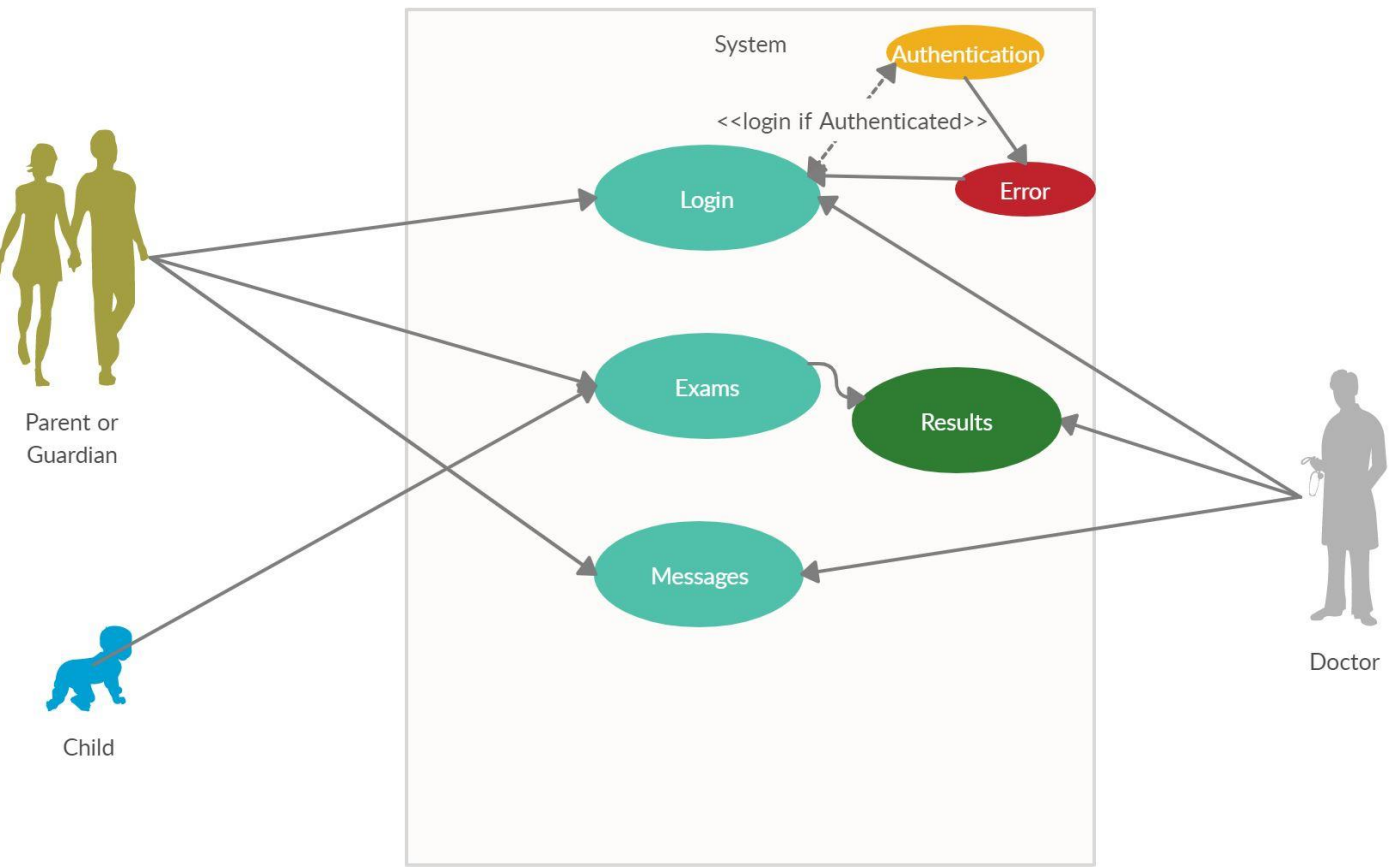
To set up a protocol based on current technology on how to perform an optic/visual evaluation, then apply the protocol in 4 different groups of patients and be able to standardize the resultant data. Be able to replicate the results in a random group of patients. At the end of the semester and should have a standard method and device for optic/visual evaluation in humans.

Methodology

1. **Develop a progressive web app using the latest web technologies.**
 - a. A lightweight mobile application that can be accessed through a browser.
 - b. Using a web app allows clients to use our application through a variety of different technological means
 - c. Integrating the latest technologies available provides us a way to have an efficient system with accurate data
2. **Less interface is better interface**
 - a. Buttons and text should be large in order to make it accessible to those with visual impairment.
 - b. Having a simple design with only a few interactable elements complement the visuals in creating a easily understood User Interface
 - c. There are multiple different sections which allow better organization and sorts the information sections into more cohesive elements

UML Diagram

Visualization of the relationships between the clients, doctors, and the integrated systems. Detailing the provided cases for how the different roles can interact



Results and Conclusions

- Creating a modern approach to traditional methods of ocular testing, we created a new way to test for visual acuity, pupillary reflex, and eye movement.
- The development of this application will reduce the need to go to a clinic and wait for an ocular exam that can be administered at home.
- Creating a foothold in the telemedicine community utilizing newer technology produces a more engaged client base while introducing them to a more convenient way of getting medical help.
- Optimizing a visual test that attracts the attention of children from the age range of 5 - 10 years, makes it easier to administer the test with the parents than original methods of visual testing.
- Allowing for a visualization on tests remaining and tests completed in the past months, will help encourage patients to continue taking the tests regularly.

Introduction

A lack of appropriate access to specialized health care (Neurology) in underserved areas in Central Valley of California, which can be solved with the use of Telemedicine. Currently, standard Telemedicine programs cannot routinely assess visual acuity and optic exam; which are important for a thorough neurological examination. By objectively examination of extraocular movements, optic nerve and visual acuity, we will be able to perform an accurate and thorough Neurological evaluation using Telemedicine, thus these underserved areas will have greater Pediatric Neurology access with the use of this technology.

