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CEN 4214 - Software-Hardware Codesign

December 14, 2016

**Juvenile Diabetes: Application**

Abstract

This mobile application is designed to help Diabetes patients keep track of their lives. With this application, whether at home or on the go, users can monitor all health and physical behavior in order to control and maintain their diabetes. Diabetes is a disease that is not uncommon and therefore, the Juvenile Diabetes mobile app will be helping many across the nation.

Our website is based on the Diabetes disease which currently affects about 29 million people. Diabetes is labeled the seventh leading cause of death in the United States. Diabetes is a disease where one’s blood sugar levels are above the normal level. A majority of the food we consume is turned into glucose, or sugar, for our bodies to use for energy. The pancreas, an organ that lies near the stomach, makes a hormone called insulin to help this sugar get into the cells of a human as necessary. Having the diabetes disease causes your body to either not make enough insulin or the body can't properly use its own insulin as needed . Because of this, sugar begins to build up in an individual’s blood. Diabetes causes severe health problems that include, blindness, possible lower-extremity amputations, kidney failure, and heart disease.

There is currently no cure for diabetes, but there are ways to prevent an individual from getting it, also (if already diagnosed), ways to manage it. Taking steps to have a healthier life is one way to prevent it. Monitoring medicine and insulin is a way to manage blood sugar levels which is important to being able to live with the disease. The Juvenile Diabetes website/mobile app is established to help monitor and keep up with daily diabetic care. The app is for both type 1 and type 2 diabetes.

The app includes pages to monitor diet, exercise, food consumption, and most importantly insulin shots. Navigation is extremely easy and reaching each category is as simple as a single click. This allows for accurate documentation and charting of daily diabetic management.

Some tools and resources included in this app are as followed, (JQuery, BootStrap, BootStrap-datetimepicker.js (moment.js), BootStrap-slider.js, Twitter’s Typeahead.js (bloodhound.js), the Nutritionix API, and Chart.js). These resources were cohesively implemented using brackets to organize the website allowing the app to be both user and mobile friendly. Diabetics using the app are able to monitor activities while on the go, eating, before bed and after etc. as pleased. The main resources used were of course JQuery, BootStrap, and the Nutritionix API.

JQuery is a structure based on JavaScript, its purpose is to make it considerably easier to use JavaScript on your website. JQuery is not a replacement for JavaScript, but it does offer some syntactical shortcuts. The code you write when you use JQuery is still JavaScript code. JQuery is an abstraction layer that takes a lot of the code (the many lines of JavaScript) and puts them into their own functions which can be called with a single line instruction. Complete knowledge of JavaScript is not needed to use JQuery. JQuery tries to simplify a lot of the complex functionality from JavaScript, like AJAX calls and DOM manipulation.

Bootstrap is a free front-end framework for quicker and much easier web design and development. Within it there is HTML and CSS centered scheme templates for composition, forms, buttons, tables, navigation, modules, image carousels as well as JavaScript plugins. Additionally, Bootstrap requires JQuery to function. Bootstrap also gives the capability to, without any difficulty, generate responsive designs. Responsive web design is producing web sites which automatically adjust to look good on all devices. Cellular phones, laptops and desktops are examples of such devices. Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Safari, and Opera). Also Bootstrap is easy to use; having just basic knowledge of HTML and CSS is all that is required. This tool allowed easy formatting of the Juvenile Diabetes application and made it look well-ordered.

Nutritionix API was another vital part of this mobile application. Nutritionix is a search engine and databank for nutrition information. Users can browse or search by restaurants and foods to find specific nutrition information. Additionally information can be shared among users and also users can share their nutrition data with Nutritionix. The Nutritionix API allows designers and developers to access and assimilate the functionality and information of Nutritionix databank with other applications in order to produce innovative applications. Diabetics can keep a log of their nutritional habits on the Juvenile Diabetes app with this tool, which is imperative to monitoring their Diabetes.

With everything incorporated in this application, users have a convenient and effective way to monitor and keep up with their diabetic levels. All user inputs are charted and graphed also, which allows for a consistent reading of health habits. The functionality of the app is simple and mobile, making it user friendly and highly recommendable for any with both Type 1 and Type 2 diabetes.

We developed a website that can be run locally without the need of a database or server. We incorporated all of the features we initially wanted to include. If we had more time we would have liked to setup a node server to deliver our web pages and have it communicate with a database which would store a user’s login information and their health information. Some of the problems we ran into were integrating the Nutritionix api into our application, as well as implementing the datetime-picker and the sliders. In the future we would like to improve the UI to give it more impact and be slightly more visually appealing.

We designed and developed a web page to help those suffering from juvenile diabetes. We assisted one another in understanding and developing a website in order to deliver a complete product. We designed and built the website in about two months and learned a lot with more time it is possible the the website could have been even better.

Github: <https://github.com/FAUMobileWeb/Juvenile-Diabetes-Management>  
 Lamp : <http://lamp.cse.fau.edu/~mdelcampo2013/SHD/PA3/landing.html>

Nutritionix: <https://www.nutritionix.com/business/api>

Chart.js: <http://www.chartjs.org/>

Typeahead.js: <https://twitter.github.io/typeahead.js/>

Bootstrap-datatimepicker: <https://eonasdan.github.io/bootstrap-datetimepicker/>

Bootstrap-slider: <http://seiyria.com/bootstrap-slider/>

Bootstrap: <https://getbootstrap.com/>

JQuery: <https://jquery.com/>

Demo: <https://www.youtube.com/watch?v=z-QfND08FBE>



