



National Kidney Foundation of Indiana Team

Kidney Check: A React and Javascript Web Application

EPICS: Engineering Projects in Community Service
Spring 2018

Rachel Burke, Dillon O'Donovan, & Gabbi Forsythe

CS383 | May 3rd, 2018

Table of Contents

Summary	4
Chapter 1	5
Introduction	5
Problem Statement	5
Objective	5
Motivation	5
The Customer	5
The Developers	6
Our Approach & Process Model	6
Glossary:	6
Report Description:	6
Chapter 2	7
Requirement Specifications	7
Functional Requirements	7
Non-functional Requirements	8
Assumptions and Constraints	8
Chapter 3	9
Architecture	9
Overview of High-level System Architecture, Decomposition, & Style	9
System Services	9
System Structure and Functionality	9
System Communication and Interaction	10
Chapter 4	11
Design	11
The User Interface	11
Post Screening Survey Tab	13
Features & Operations	13
Layout and Aesthetics	13
Organization	14
Printout Report Formats	14
Navigation and Browsing Options	14
Error Handling Dialogs	14
Chapter 5	15
Implementation	15
Implementation Languages	15
Coding Standards & Comments	15
Implementation Process	15
Distribution of Work	15
Code Base Organization	16

Chapter 6	17
Quality Assurance & Testing	17
Testing Objectives Selection	17
Testing Approach	17
Testing Checklists	17
Defect Detection, Reporting & Management	18
Sample Code Runs	18
Chapter 7	19
Project Organization & Management	19
Team Organizational Structure, Roles, & Contributions	19
Work Distribution	20
Management Process	20
Technology and Tools Selection and Usage	20
Weekly Status Reports	20
Week 1 - 2/5/2018	21
Week 2 - 2/12/18	22
Week 3 - 2/19/18	23
Week 4 - 2/26/18	24
Week 5 - 3/5/18	25
Week 6 - 3/12/18	26
Week 7 - 3/17/18	27
Week 8 - 3/26/18	28
Week 9 - 4/2/18	29
Week 10 - 4/9/18	30
Week 11 - 4/16/18	32
Week 12 - 4/23/18	33
Week 13 - 4/30/18	34
Chapter 8	36
Future Work	36
Future Objectives	36
Future Functionality	36
Future Bugs to Fix	36
References	37
Appendices	38

Summary

In the EPICS service-learning course, the main objective is for students to be introduced to an environment in which they work together in teams to exercise their software engineering skills. In addition they are introduced to realistic systems and working with customers from the Indianapolis and Butler communities. This course aids students in learning how to maintain a professional attitude and grow their in their technical and “soft” skills.

Our selected project was the National Kidney Foundation of Indianapolis. Our client, Michele Venable, wished to have an application for the Indiana Kidney Check clinics to use for patient information and forms to be filled out and stored in a database, rather than on paper forms. The project was an extension of the original project that began in the Fall 2017 semester. We selected the project as all of the members believed that we all could make a positive contribution to the project as well as learn many valuable skills from working on the project. At the conclusion of the semester, we had noticeable improvements from the previous semester’s version of the project, however there is still a lot of work to be done on this application.

Chapter 1

Introduction

For this semester, our team chose the National Kidney Foundation of Indiana project. We worked on building an app to be used during registration at the Indiana Kidney Check which stores customer's personal and health screening information. This project was an extension of the work completed during the Fall 2017 semester.

Problem Statement

At the Indiana Kidney Check, paper medical records are used at screenings to record personal and station information. The National Kidney Foundation would like to decrease paper usage and file storage by transitioning from paper forms to digital storage. They have tried manually inputting health profiles of over 100 people into Excel spreadsheets, but have lost some profiles in the process. Thus, they need a more streamlined data collection process that is efficient in gathering, storing, and displaying Indiana Kidney Check screening information.

Objective

Our objective for this project was to improve upon the existing application from the previous semester. We wanted to add pre and post screening surveys that save input into the Firebase database, add a consent form, change the color scheme to something more user friendly, and add a link in the app that sends users to a website to register as an organ donor.

Motivation

We selected this project because we believed it would be a valuable learning experience for this class. Our team felt that we could make a positive contribution to the application and improve upon what had been previously done on the team. The presentation given by our client was very well done and assured us that the work we would do would be very beneficial to the National Kidney Foundation of Indiana.

The Customer

Our customer for this project is the National Kidney Foundation of Indiana. Michele Venable was our main contact from the organization. "The National Kidney Foundation is the leading organization in the U.S. dedicated to the awareness, prevention and treatment of kidney disease for hundreds of thousands of healthcare professionals, millions of patients and their families, and tens of millions of Americans at risk."

The Developers

Dillon O'Donovan, Rachel Burke, and Gabbi Forsythe were the members of the Kidney Team this semester. Dillon is a junior Mathematics and Computer Science double major and was the database expert, web developer, and programmer. Rachel Burke is a junior Mathematics and Software Engineering double major and was the team leader, webmaster, quality assurance, and programmer. Lastly, Gabbi Forsythe is a freshman Software Engineering major and was the client liaison, documentation lead, and programmer.

Our Approach & Process Model

Our team was not familiar with React, so we completed Javascript and React tutorials. While we worked on these, we contacted our client, gathered information about the project, obtained the project from the previous group, and developed a Trello board with a list of the project requirements. Once we gained a sense of how to work in React, we began to complete tasks by trial and error. Tasks were completed as we became familiar with React and by Google searching. The project ended with the creation of our final report and our final presentation.

Glossary:

- JavaScript - a high-level programming language used to make webpages
- React - a JavaScript library
- Firebase - Google's mobile platform that helps develop apps and serves as a database backend for applications
- Trello - a web-based product management application
- Bitbucket - Atlassian's web-based version control repository hosting service used for source code and development projects
- Slack - a cloud-based team collaboration service that allows for communication for large teams, integration of outside applications, and storage and transfer of files
- Moqups - a web app for creating wireframes, mockups, diagrams and prototypes
- HTML - the standard markup language for creating web pages and web applications
- CSS - a style sheet language used for describing the presentation of a document written in a markup language

Report Description:

This project outlines the project's given requirements, specifications, architecture, design, and implementation. Testing and quality assurance reports are given and the project organization and management is discussed. Future requirements to be completed are outlined and other functionalities are given.

Chapter 2

Requirement Specifications

In this chapter we discuss the specifications given for this project including functional and non-functional requirements, assumptions, and constraints.

Functional Requirements

- The application must have a Personal Information form where patients can enter necessary personal information in a Registration section and answer necessary questions in a Risk Questions section.
- The application must have a Health Screening Consent, Release, and Authorization form with the information from the paper form as well as an electronic signature panel.
- The application must have a Pre-Survey form where patients can answer survey questions.
- The application must have a Post-Survey form where patients can answer survey questions and give comments.
- The application must have a Station Screening form where workers can input results from tests at each station.
- The application must be able to send and store information input into the Personal Information form into a database.
- The application must be able to send and store the signature from the the Health Screening Consent, Release, and Authorization form into a database.
- The application must be able to send and store information input into the Pre-Survey form into a database.
- The application must be able to send and store information input into the Post-Survey form into a database.
- The application must be able to send and store information input into the Station Screening form into a database.
- The application must have the ability to display, add, and remove sponsor logos.
- The application has a prompt or notice of the ability to become an organ donor with a link to take patients to the correct site to register to be an organ donor.
- The application has the ability for NKFI to migrate old data into the database.
- The application has the ability to display a patient's information from the database in a form to be used for printing, look-up, and application display purposes.

Non-functional Requirements

- The application must have a Spanish Translation Option on all forms filled out by patients (Personal Information, Pre-Survey, Post-Survey, and Health Screening Consent, Release, and Authorization forms).
- Be able to display the application on a tablet (and be appealing to users).
- Follow the NKFI color scheme.
- Be user-friendly (i.e. easy to read, easy to input information on a tablet).
- Have a Readme file for future teams to work and continue the project.

Assumptions and Constraints

The specifications for this project fit the environment predetermined by the previous team who worked on this application. There were no assumptions made for this project as we had the freedom to go in any direction we deemed logical and necessary for implementing requirements of the project. Any questions or concerns for this project were clarified with our client on an as needed basis. The only constraint our team encountered was a ability constraint as our team had little to no experience with the languages used to create the application during the previous semester. These were selected by the previous team who started the project.

Chapter 3

Architecture

In this chapter, we discuss the architecture of our application. A wireframe completed by the Fall 2017 EPICS team that reflects the goal for the final structure for this application can be found at <https://app.moqups.com/bcavenag@butler.edu/nqIHJLzqrX/view/page/ad64222d5>.

Overview of High-level System Architecture, Decomposition, & Style

System Services

Our application features a series of forms including a personal information form, a station screening form, and pre and post survey forms that require a user to fill out information and submit it. The station screening form is created using a “FormWrapper” class that makes it easy to build new station forms. In addition, there is a consent form that has the paper consent form information, but is missing a signature panel. The application can be accessed using a URL that requires no authorization. In the future, a member of the National Kidney Foundation of Indiana will need to login on the website to access the form.

When information is input into the form and a submit button is clicked, the information in the form goes into a Firebase database. Currently the database can save multiple patient’s test screening information, but only one patient personal information form. In the future, this issue needs to be fixed to give each patient a unique ID so that each patient’s personal information is saved in the database and their station screening information is linked to the ID generated for their personal information form.

In addition to the features already in the application, the system needs to be able to receive information from the database. Print-out reports, result displays, and result analyses from Kidney Checks can be done for patients and the National Kidney Foundation of Indiana. A new form will likely be created to display full patient information in a printer-friendly format.

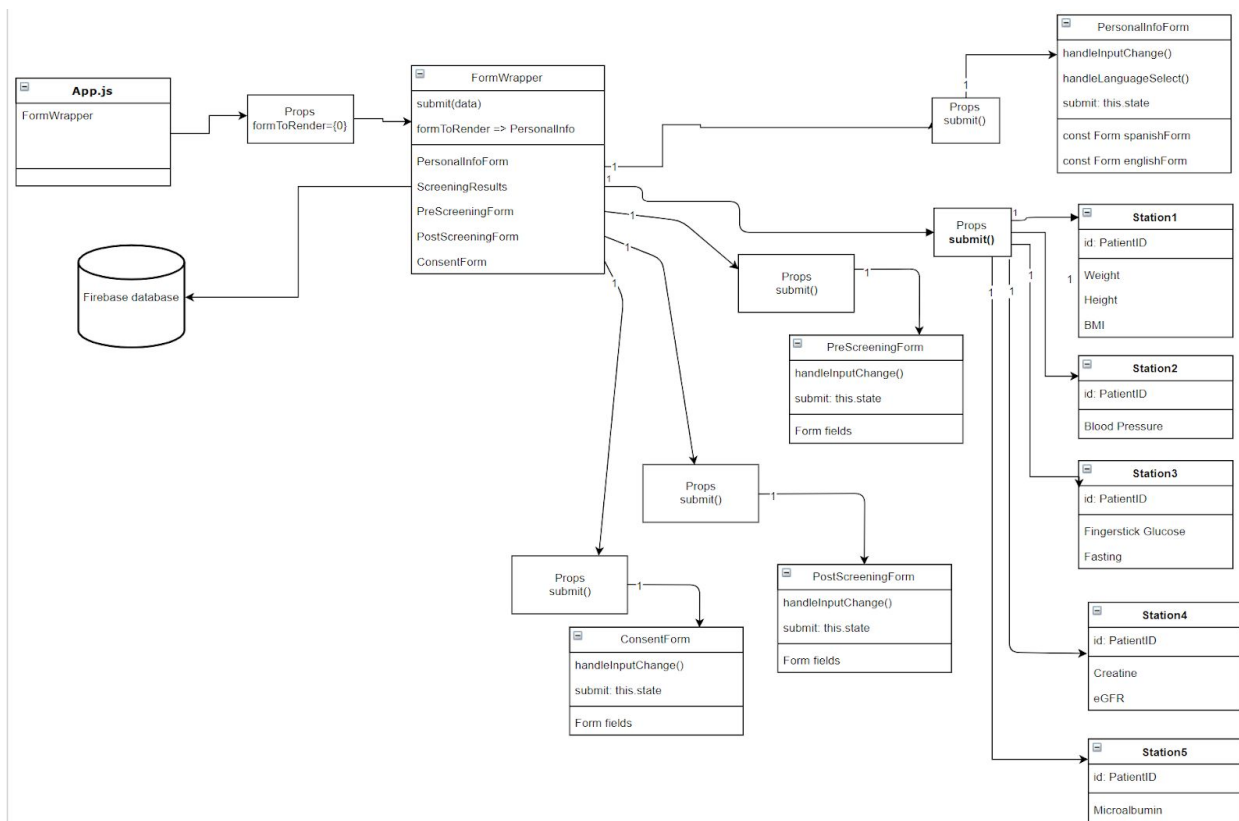
System Structure and Functionality

We have 3 different main components that all call each other. We have a main component called App.js which starts the program and is in charge of calling the FormWrapper class. The FormWrapper then calls whichever form the user is trying to access. Each type of form that the user can access is a component so the FormWrapper is a parent to all of the form components. The main component is in charge of starting the application and calling the FormWrapper class. From there, the FormWrapper calls which ever form it needs, receives the data and sends it to the database so the FormWrapper’s main responsibility it to talk to the database. The responsibility of the individual form components is to be the UI to collect the data and send it back to the FormWrapper class.

System Communication and Interaction

We did use a three-tier model for our components. On one tier we have our database (firebase) and our main App.js component which starts the application. On our controller tier we have the FormWrapper class which is in charge of communication between the database and the UI. Then we have our form components which is what the user interacts with so the UI level of the three-tier database.

Here is a diagram of our structure and you can see it has a three-tier architecture (Bottom to top tier from left to right):



Chapter 4

Design

The design of the application is largely the same as the previous semester application. Color changes, font size changes, and the number areas that may be interacted with in the application increased, but functionally and graphically the application is very similar.

The User Interface

Our team continued with the GUI laid out by the last semester's team. We added new tabs to reflect forms that needed to be added and made some aesthetic changes. All of the data entered in the form saves to the database, but there is an issue with the unique Patient IDs that will have to be fixed in the future (as mentioned in Chapter 8).

Personal Information Tab

Personal Information Tab in Spanish

Risk Questions

1. Are you currently on dialysis or have you received a new kidney?
 Yes No

2. Has a doctor ever informed you that you have any of these conditions? (In the last five years?)

Conditions:	If yes, are you taking medications?	
High blood pressure or hypertension?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
High blood sugar or diabetes?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
High blood cholesterol?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
Heart disease, heart attack, or stroke?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
Chronic Kidney Disease?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No

3. Do you have any family history of the above conditions? (Mother, Father, Sister, Brother)
 Yes (Please list below) No

4. Tobacco History:
 I have never smoked
 I currently smoke
 I quit smoking less than two years ago
 I quit smoking two or more years ago

Submit

Risk Questions (bottom of Personal Information Tab) in English

Preguntas Relacionadas Con Los Factores De Riesgo

1. Ha recibido diálisis o se le ha trasplantado un riñón?
 Sí No

2. En los últimos 5 años el doctor le ha informado que usted sufre alguna de estas enfermedades?

Enfermedades:	Si la respuesta es afirmativa, ¿está usted tomando medicina?	
Tensión arterial alta o hipertensión?	<input type="radio"/> Sí <input type="radio"/> No	<input type="radio"/> Sí <input type="radio"/> No
Azúcar en la sangre o diabetes?	<input type="radio"/> Sí <input type="radio"/> No	<input type="radio"/> Sí <input type="radio"/> No
Colectores altos?	<input type="radio"/> Sí <input type="radio"/> No	<input type="radio"/> Sí <input type="radio"/> No
Enfermedad del corazón, paro cardíaco o derrame?	<input type="radio"/> Sí <input type="radio"/> No	<input type="radio"/> Sí <input type="radio"/> No
Enfermedad crónica de los riñones?	<input type="radio"/> Sí <input type="radio"/> No	<input type="radio"/> Sí <input type="radio"/> No

3. Han sufrido sus familiares alguna de estas enfermedades (Padres, hermanos, hijos)?
 Sí (Si la respuesta es afirmativa, anote quienes las sufren) No

4. Consumo de cigarrillo:
 Nunca he fumado
 Yo fumo
 Dejé de fumar hace menos de dos años
 Dejé de fumar hace más de dos años

Submit

Risk Questions in Spanish

Health Screening Consent, Release and Authorization Form

Welcome to the Indiana Kidney Check Program. In order to be screened you must be 18 years or older, not on dialysis or have a kidney transplant and sign this consent. This screening will be completed by trained professionals and will be given free of charge.

Procedures
 The full screening including a health survey, blood pressure check, BMI, blood test, urine test, consultation with a health screening professional, and post-screening questionnaire. All the results will be available at the end of the screening. For abnormal results, you will be referred to your doctor for abnormal follow up or given a list of clinics in your area to make an appointment.
 Expectations with the procedures in the screening are explained here.
 Blood pressure measurement in the upper arm can cause temporary discomfort, numbness or tingling in the hand. The blood test is obtained by finger stick, which can cause temporary pain or stinging where the sample is taken. Rarely, you may feel a throbbing at the puncture site or have slight bruising.

Participation
 Participation is voluntary and you may choose to stop the screening at any time. By taking part in this screening program, you know and accept all the risks and responsibilities associated with and resulting from it. You release National Kidney Foundation of Indiana (NKFI) and its designee from all liability or damages that may come from or happen during the screening. The program will only screen for kidney health and is not a complete medical exam. Test results do not show or imply that you DO or DO NOT have kidney disease. For diagnosis of a medical condition such as kidney disease, you agree and know that you must see a doctor for a complete medical exam. This is your responsibility. You agree that NKFI is NOT a health care provider and is not providing a diagnosis. You understand that NKFI and its designee have the right not to screen you if you do not sign this form.

Confidentiality
 Your participation and your information are private and NKFI has taken steps to secure your data. Results will be compiled for statistical purposes without using individual identifying information. A member of our staff can answer any questions you might have about the screening. You may also call the National Kidney Foundation of Indiana office for more information at 317-722-5640 or 1-800-382-9971.

Consent Form Tab

BMI

Patient ID:

Weight:

Height:

BMI: (Normal BMI: 19-24)

Submit

Blood Pressure

Patient ID:

Blood Pressure:

Seconding Reading (if elevated):

Submit

Glucose

Patient ID:

Fingerstick Glucose (mg/dl):

(Normal fasting: 70-99 mg/dl / Normal non-fasting: 70-140 mg/dl)

Fasting? Yes No

Submit

eGFR

Patient ID:

Creatinine: (Normal: 0.5-1.2)

eGFR: (Normal: 60 or more)

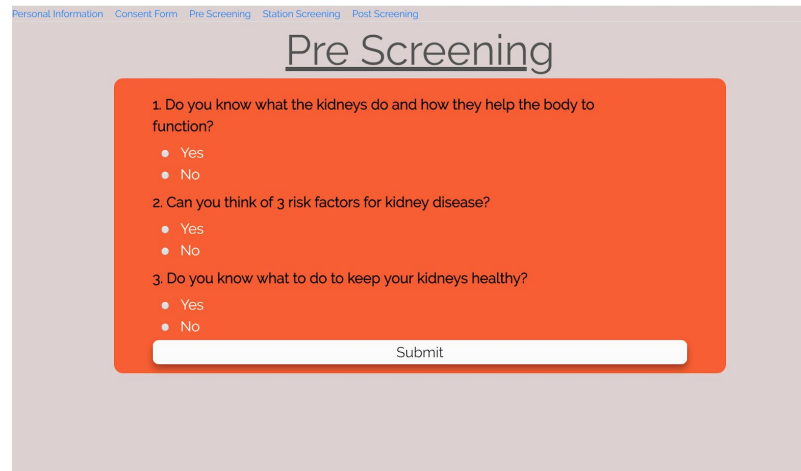
Submit

Random Urine Test

Microalbumin (Abnormal: 30-300)

Submit

Screening Form



The screenshot shows a web application interface with a navigation bar at the top containing five tabs: "Personal Information", "Consent Form", "Pre Screening", "Station Screening", and "Post Screening". The "Pre Screening" tab is selected and highlighted. Below the navigation bar, the title "Pre Screening" is centered. The main content area is a red box containing three questions, each with two radio button options: "Yes" and "No".

1. Do you know what the kidneys do and how they help the body to function?

- Yes
- No

2. Can you think of 3 risk factors for kidney disease?

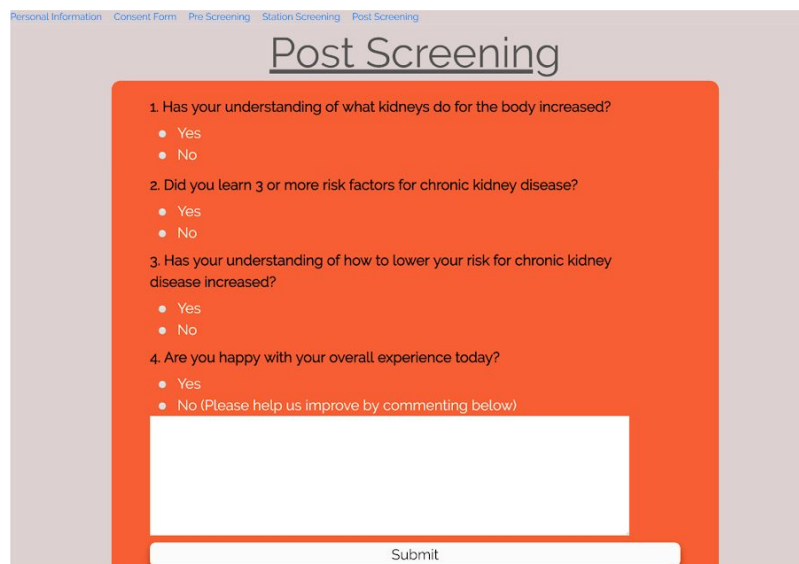
- Yes
- No

3. Do you know what to do to keep your kidneys healthy?

- Yes
- No

Submit

Pre Screening Survey Tab



The screenshot shows a web application interface with a navigation bar at the top containing five tabs: "Personal Information", "Consent Form", "Pre Screening", "Station Screening", and "Post Screening". The "Post Screening" tab is selected and highlighted. Below the navigation bar, the title "Post Screening" is centered. The main content area is a red box containing four questions, each with two radio button options: "Yes" and "No". The fourth question includes a note for the "No" option. Below the questions is a white text input field and a "Submit" button.

1. Has your understanding of what kidneys do for the body increased?

- Yes
- No

2. Did you learn 3 or more risk factors for chronic kidney disease?

- Yes
- No

3. Has your understanding of how to lower your risk for chronic kidney disease increased?

- Yes
- No

4. Are you happy with your overall experience today?

- Yes
- No (Please help us improve by commenting below)

Submit

Post Screening Survey Tab

Features & Operations

Our team added many new features to the application. First, the team added three new tabs to the application that contain the Pre and Post Screening Surveys as well as the Consent Form. Our team also added a toggle for the Personal Information form to be in Spanish, in order to better accommodate more people.

Layout and Aesthetics

Our team did not change the layout of the application aside from the addition of the extra forms which we placed in new tabs alongside the original tabs. However, our team did change

the aesthetic of the application slightly. Upon receiving feedback from the client about the aesthetic, our team decided gray, orange, and white would be better colors for the application. This change in design gives the application better readability and gives it better visual appeal. Our team also removed the collapse animation from the tabs within the Screening Form tab. The collapse animation caused issues with the rendering of the application, and for development purposes it was best to remove them from the application.

Organization

Our team obtained the forms necessary for the screening process from the client and used those to create the new forms. Each form got it's own tab and some forms (i.e. Personal Information Form and the Screening Form) were divided into sections for clarity when using the application.

Printout Report Formats

This was not completed yet, but still needs to be implemented in the future by another team. The print out needs to include all information input into the database.

Navigation and Browsing Options

The application has five tabs so the user can navigate to the page corresponding to what stage of the screening the patient is at. The station screening tab has five sections for each station in the screening process. The information the NKFI staff member puts in at each station is saved to the database when the member presses the submit button. The other tabs are for the patient to fill out either before or after the screening process.

Error Handling Dialogs

None displayed in this application.

Chapter 5

Implementation

The projects languages, coding standards, comments, and code base organization largely came from the previous project. The implementation process and distribution process was not very strict due to our poor familiarity with React and Javascript.

Implementation Languages

The program is written in React, a Javascript library. Cascading Style Sheets (CSS) is used to format the display of the application.

Coding Standards & Comments

Our project had minimal to no comments when we received it. After we were able to understand what the code was doing, we retroactively added comments. These aim to explain at a high level what the code does so that future teams are able to get a quick understanding of what the project does and can enter the development process earlier. Additionally, we added comments where certain features need improvement, updating, or were non-trivial.

Implementation Process

We tried our best to make sure each team member worked on their own branch of the project, and worked on the tasks that they felt comfortable taking on. Once they felt that their work was complete, they would try and run it on a localhost. If all functionality still worked properly, that would then be pushed in Bitbucket. Once enough changes had been pushed, or the team wished to send a working prototype to Michele for feedback, we would then run our build command again and then deploy the working version to Firebase. We typically worked in roughly 1 week intervals, where each week we set tasks to accomplish and implement. If needed, this would extend into the next week; otherwise, we would pick new tasks and make sure that everyone had a current version of the project.

Distribution of Work

Team members took on tasks they felt they could complete based upon skill level.. We decided individually what we would try to work on for the project and completed tasks as we were able. Overall, the work distribution for the project was even between between the project functional and nonfunctional requirements.

Code Base Organization

We followed all code base organization practices that the previous group left in place. There are several folders that separate different aspects of the project, and some of these have subfolders as well. For example, there is a folder for all node modules, a folder for files related to our build version, and a folder for our source code. The source code folder has subfolders for components, and each type of form. There are more folders as well, but we believe these can likely be cleaned up in the future as we are not sure they serve a purpose any longer, as it appears they were used to test functionality early in the process.

Chapter 6

Quality Assurance & Testing

This project required minimal testing as most of the application is composed of textboxes that allow users to type in as much or as little information needed in each box. Another large portion of the application is composed as radio buttons. In nonstandard textboxes and non-textboxes, including date boxes, integer only text boxes, dropdown boxes, inputs were able to be checked as they do not allow for all types of input information to be entered into them.

Testing Objectives Selection

Because the project is still relatively new and so much information is being added to the project, a large portion of the testing completed was ensuring that data was being saved into the database correctly.

Testing Approach

For all the forms, I tested each textbox and noted whether or not the information input into the textboxes. Then I checked all the radio buttons and checkbox to see if the information was being saved into the database. For the checkbox, I also noted whether or not the form was rendered in Spanish. Lastly, I checked to see if information from non-textbox inputs were being saved into the database. I noted things I noticed that need to be fixed by future teams.

Testing Checklists

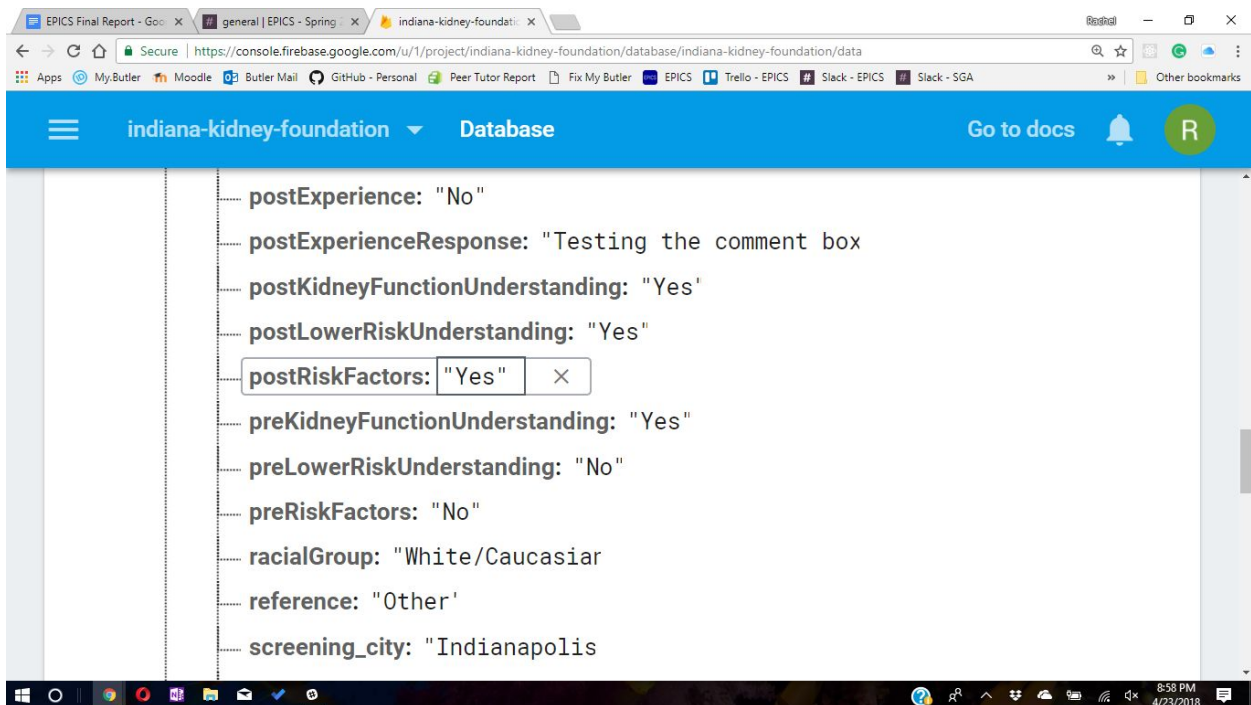
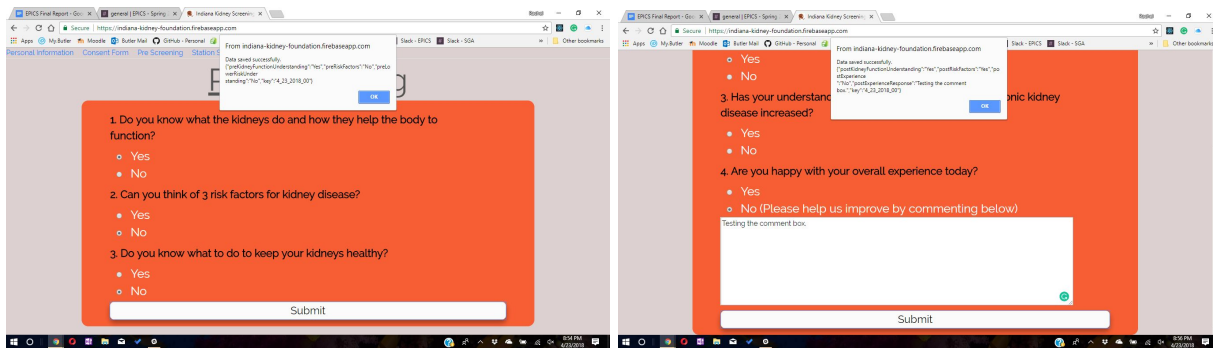
- | | | |
|-------------------------|------------------------------|---------------------------|
| ● Show English Saved? | ● Insurance Saved? | ● Height Saved? |
| ● Show Spanish Saved? | ● Reference Saved? | ● BMI Saved? |
| ● Screening City Saved? | ● Other Reference Saved? | ● Patient ID2 Saved |
| ● Screening Date Saved? | ● Materials Saved? | ● Blood Pressure 1 Saved? |
| ● First Name Saved? | ● Dialysis/N. Kidney Saved? | ● Blood Pressure 2 Saved? |
| ● Middle Initial Saved? | ● H. BP or Hyper. Saved? | ● Patient ID3 Saved? |
| ● Last Name Saved? | ● H. Bld Sugar/ Diab. Saved? | ● Glucose Saved? |
| ● Age Saved? | ● High Cholesterol Saved? | ● Fasting Saved? |
| ● Address Saved? | ● Stroke Saved? | ● Patient ID4 Saved? |
| ● Apt. Number Saved? | ● Kidney Disease Saved? | ● EGFR Saved? |
| ● City Saved? | ● Family History Saved? | ● Creatine Saved? |
| ● State Saved? | ● Family Conditions Saved? | ● Microalbumin Saved? |
| ● Zip Code Saved? | ● Tobacco History Saved? | ● Post Function Saved? |
| ● Phone Saved? | ● Pre Function Saved? | ● Post Risk Saved? |
| ● Email Saved? | ● Pre Risk Saved? | ● Post Healthy Saved? |
| ● Sex Saved? | ● Pre Healthy Saved? | ● Post Experience Saved? |
| ● Racial Groups Saved? | ● Patient ID1 Saved? | ● Post Response Saved? |
| ● Doctor Saved? | ● Weight Saved? | ● Keys saved? |

Defect Detection, Reporting & Management

None of the detects or bugs were fixed. They were noted and need to be fixed by a later group. The bugs detected include:

- Do not allow nonnegative ages to be input into the age
- Allow multiple patient's personal information to be saved into the database
- Have phone numbers be input with the correct format

Sample Code Runs



Chapter 7

Project Organization & Management

In this chapter we discuss the project team structure, organization, and member responsibilities, and team accomplishments that occurred during the semester.

Team Organizational Structure, Roles, & Contributions

Rachel Burke served as the team leader. She was also the webmaster, performed quality assurance, and assisted as a programmer. Dillion O'Donovan and Gabbi Forsythe were both team members and were also both programmers on the application. Both Dillon and Gabbi had other roles on the team. Dillon was the database expert and web developer. Gabi served as the client liaison and documentation lead.

As the team leader, Rachel wrote the weekly status reports (WSRs) and kept track of all of her teammates progress each week. She also served as webmaster and posted the WSRs on the EPICS website each week. In addition, Rachel posted the information on their project page and updated it with photos and meeting minutes. Due to Rachel's participation in a testing and quality assurance course concurrently with the EPICS course, she performed quality assurance on the application. She noted bugs that will cause issues and noted them for future teams to adjust. Rachel also assisted as a programmer creating the Consent Form, changing some of the application input and tab formatting, correcting mistakes and inconsistencies between the paper and digital forms, and adjusting the input types on some of the forms.

As the web developer, database expert, and programmer, Dillion added pre and post screening forms, ensured all data on these new forms was being saved to the database, and added a Spanish toggle for the application to be translated into Spanish for Spanish-speaking users. Dillon also attempted to make all entries in the application be saved uniquely by determining a primary key. He primarily worked with our consultant, Sean Gibbens, on this issue, as well as fixing the animation issues on the station screening forms.

As the client liaison, Gabbi was in charge of sending our client updates, as well as sending our client questions concerning the project. She also set up the initial onsite meeting with Michele Venable from the National Kidney Foundation of Indiana. At this meeting, Gabbi took the meeting minutes and sent them to Rachel for the website. Also as documentation lead, Gabbi updated the Readme file for the next group who works on the project. Gabbi assisted as a programmer on the project by changing GUI including things such as the color schemes, font size, text box size, and radio button size.

Work Distribution

Team members took on tasks they felt they could complete based upon skill level. No team members were familiar with React or Firebase, and Rachel and Gabbi were not familiar with Javascript and CSS. We worked on tutorials to gain skills that enabled us to become familiar with them. We decided individually what we would try to work on the project and completed tasks as we were able to for the project. A Trello board was created to keep track of what tasks were remaining and which tasks were completed and all members had access to the board.

Management Process

Rachel set up a Slack channel for team members to use to communicate. In addition, she connected it to Bitbucket so group members knew when things were changed to the project. She also added a Trello board integration into Slack so team members know when cards are added, moved, and changed on the Trello board.

Technology and Tools Selection and Usage

Our team chose to use Slack as our form of communication and Trello to keep track of our tasks. Bitbucket and Firebase were preselected by the previous group for the application and we continued to use them for our project.

Weekly Status Reports

On the subsequent pages are the weekly status reports (WSRs) for our team this semester. They were written and uploaded onto the EPICS website <http://epics.butler.edu/> by Rachel Burke each week.

Week 1 - 2/5/2018

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 2/5/2018

- I. RED FLAGS: There are no critical issues at this point.
- II. ISSUES: We have not yet received the project from the previous group.
- III. ACCOMPLISHMENTS (dates):
 - 1/31/2018
 - Chose our project and made contact with Michele Venable via email.
 - 2/5/2018
 - Found a time to meet with Michele and contacted Lauren Hannemann from last semester's team via email to meet and get the project.
- IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):
 - Team to meet with Michele to discuss the project – 2/7/2018?
 - Team to meet with Lauren to get the project – 2/7/2018?

Week 2 - 2/12/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 2/12/18

I. RED FLAGS:

We are unfamiliar with the languages used to work on this project – i.e. HTML5, CSS, React, etc.

II. ISSUES:

- We are working on learning and developing a feel for the languages used to write this project
- We have not been able to successfully run the project, and neither was Lauren last Wednesday.
 - i. The link that hosts the project does not work or there is a missing module.

III. ACCOMPLISHMENTS (dates):

2/7/18

- Got the project from Lauren and were able to view the code.

2/12/18

- Set up meeting with Michele for Wednesday 2/14/18 (onsite)

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Meet with Michele – Full Team
- Become familiar with project and languages – Full Team

Week 3 - 2/19/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 2/19/18

I. RED FLAGS:

We are still unfamiliar with the languages used to work on this project – i.e. HTML5, CSS, React, etc.

II. ISSUES:

We are working on learning and developing a feel for the languages used to write this project.

i. We are receiving help from David on 2/21 during class.

We have not been able to successfully run the program.

i. The link that hosts the project does not work or there is a missing module.

ii. We have contacted Billy from last semester's group about this issue and are meeting on 2/19.

III. ACCOMPLISHMENTS (dates):

2/12/18

- Contacted David and Billy about the project.
 - o We asked David for help with React
 - o We asked Billy for help with getting the program working.

2/14/18

- We met with Michele onsite at the National Kidney Foundation and went over objectives for the project as well as received information for upcoming Kidney Check Days.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Meet with David 2/21 – Gabbi and Dillon
- Meet with Billy 2/19 – Full Team

Week 4 - 2/26/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 2/26/18

I. RED FLAGS:

We are still unfamiliar with the languages used to work on this project – i.e. HTML5, CSS, React, etc.

II. ISSUES:

- We are working on learning and developing a feel for the languages used to write this project.
 - We are seeking new help from consultants. Gabbi is reaching out to Sean Gibbens.
 - We have not been able to successfully run the program.
 - There is a bug somewhere that is keeping the program from fully running.
 - Dillon is working on finding the issue with the program.

III. ACCOMPLISHMENTS (dates):

2/19/18

- Met with Billy to work on getting the project to run.
 - We were able to get the program to load without missing module errors, but it would not successfully run.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Contact Sean about help with React 2/26 – Gabbi
- Get the program to run – Full Team (Dillon lead)

Week 5 - 3/5/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 3/5/18

I. RED FLAGS:

We are still unfamiliar with the languages used to work on this project – i.e. HTML5, CSS, React, etc.

II. ISSUES:

- We continuing to work on learning and developing a feel for the languages used to write this project.
- Sean Gibbens said he would be available to meet on Wednesday afternoon (3/7/18 after 2?).
- We have issues trying to view the displayed information when the program is run.
- We are working on trying to figure out fixes to the bugs in the code that cause the page to not fully render, not allow for spaces in textboxes, and not allow radio buttons to be selected.

III. ACCOMPLISHMENTS (dates):

2/26/18

- Met with Billy to work on getting the project to run.
 - o We were able to get the program to load without missing module errors, but it would not successfully run.

2/28/18

- We were able to fix some bugs in the program and could run the program, however we now experience rendering issues and not all web app items are displayed when running the code.
- We contacted Lauren and Billy to get a diagram of the previous project. We received information but were unable to gain access to view the diagram. We have followed up and are waiting to hear back.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Confirm meeting with Sean about help with React 3/5 – Gabbi
- Meet with Sean 3/7 – Full Team
- Work on getting familiar with React and project – Full Team

Week 6 - 3/12/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 3/12/18

I. RED FLAGS:

We are still unfamiliar with the languages used to work on this project – i.e. HTML5, CSS, React, etc.

II. ISSUES:

We continuing to work on learning and developing a feel for the languages used to write this project.

i. Sean Gibbens said he would continue to meet on Wednesdays afternoons to assist with the project.

III. ACCOMPLISHMENTS (dates):

3/7/18

- Met with Sean to work on getting the project to run as well as assist with learning languages for this project.
 - o We were able to identify the issue with the animation features that were causing the rendering issues.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Work on getting familiar with React and project – Full Team

Week 7 - 3/17/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 3/17/18

I. RED FLAGS:

We are still unfamiliar with the languages used to work on this project – i.e. HTML5, CSS, React, etc.

II. ISSUES:

We continuing to work on learning and developing a feel for the languages used to write this project.

i. Sean Gibbens said he would continue to meet on Wednesdays afternoons to assist with the project.

III. ACCOMPLISHMENTS (dates):

3/16/18

o Received the necessary information about forms as well as additional project information from Michele.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Work on getting familiar with React and project – Full Team
- Meet with Sean on Wednesday 3/19/18 – Full Team

Week 8 - 3/26/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 3/26/18

I. RED FLAGS:

We are still unfamiliar with the languages used to work on this project – i.e. HTML5, CSS, React, etc.

II. ISSUES:

We continuing to work on learning and developing a feel for the languages used to write this project.

i. Sean Gibbens said he would continue to meet in afternoons to assist with the Project.

III. ACCOMPLISHMENTS (dates):

3/19/18

o Contacted Sean to check about future meetings.

3/21/18

o Reviewed React Tutorials Sean sent via email on Tuesday 3/20 in place of meeting with him.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Work on getting familiar with React and project – Full Team
- Meet with Sean on Wednesday 3/26/18 and/or 3/28/18 – Full Team

Week 9 - 4/2/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 4/2/18

I. RED FLAGS:

II. ISSUES:

We continuing to work on learning and developing a feel for the languages used to write this project.

- i. Sean Gibbens will continue to meet with us on Wednesdays to help us with this Issue.

III. ACCOMPLISHMENTS (dates):

3/26/18

- o Completed React and JavaScript Tutorials
- o Updated the Trello Board

3/28/18

- o Met with Sean to receive help with developing a better sense of the project
- o Found discrepancies between the forms and the project
- o Emailed Michelle with an update and questions about the project concerning the discrepancies

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Work on getting familiar with React and project – Full Team
- Meet with Sean on Wednesday 4/4/18– Full Team

Week 10 - 4/9/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 4/9/18

I. RED FLAGS:

II. ISSUES:

- We continuing to work on learning and developing a feel for the languages used to write this project.
 - Sean Gibbens will continue to meet with us on Wednesdays to help us with this issue.
 - We overwrite information in Firebase because we do not have a unique id other than date currently for the personal info form

III. ACCOMPLISHMENTS (dates):

4/2/18

- Successfully pushed, pulled, and committed in BitBucket as a team for the first time – Full Team
- Became able to update information sent to Firebase from the screening results stations - Dillon
- Changed the colors and formatting of the app to make it easier to read – Gabbi
- Updated the app to match the personal info and test screening forms – Rachel and Gabbi

4/3/18

- Changed the spacing of the tab links at the top of the app to make the formatting more appealing - Rachel
- Changed the input type for the state to be a dropdown box that allows users to select a state they live in and have it successfully save to Firebase - Rachel
- Readjusted the formatting of the pages to make the form even more easy to read and seem more logical - Rachel

4/4/18

- Met with Sean and added him to the BitBucket – Full Team
- Adjusted size and format of the radio buttons and labels- Gabbi
- Added a post screening form and the .css to the app - Dillon
- Moved node modules into git ignore to remove push, pull, and merge conflicts between team members – Sean
- Added textboxes for the “Other” options on the personal info screening form and save information in Firebase - Rachel

IV. ACTION ITEMS FOR FOLLOWING WEEK:

- Be able to save multiple personal screening forms to the firebase
- Let Sean know if we need his help next week
- Add pre-screening form
- Either make the stations their own tabs or figure out how to fix the collapsing animation work correctly on the tabs

Week 11 - 4/16/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 4/16/18

I. RED FLAGS:

II. ISSUES:

We overwrite information in Firebase because we do not have a unique id other than date currently for the personal info form

III. ACCOMPLISHMENTS (dates):

4/9/18

- o Sent Michele an email with the host link to view the current version of the project and remind her about the final presentations in Robertson – Gabbi
- o Created a form for the signature consent form, and began researching ways to install a signature panel and store them into the firebase – Rachel
- o Created the prescreening form and enabled it to save to the firebase - Dillon

4/11/18

- o Sent Michele an email with an updated version of the host link and asked her what kind of forms they would like to be returned when pulling from the firebase
- o Began creating final presentation

IV. ACTION ITEMS FOR FOLLOWING WEEK:

- Work on the final presentation
- Figure out how to get a signature panel to function in our application
- Save multiple unique entries in the database on the same date
- Try pulling from the firebase into the app – waiting on Michele

Week 12 - 4/23/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 4/23/18

I. RED FLAGS:

II. ISSUES: We overwrite information in Firebase because we do not have a unique id other than date currently for the personal info form

III. ACCOMPLISHMENTS (dates):

4/16/18

- o Michele responded with feedback for the project and we made changes to reflect some of her feedback including: (all Dillon)
 - add risk questions to personal information
 - remove date of birth field from personal information
 - add random urine test with microalbumin line to station screening
 - Add a comments section – clarified where with Michele
- o Began creating final presentation – Gabbi
- o Updated Readme – Gabbi
- o Began writing final report - Rachel

4/11/18

- o Sent Michele an email with an updated version of the host link and asked her what kind of forms they would like to be returned when pulling from the firebase
- o Began creating final presentation

IV. ACTION ITEMS FOR FOLLOWING WEEK:

- Work on the final presentation and final report

Week 13 - 4/30/18

TO: Rachel Burke, Dillon O'Donovan, Gabbi Forsythe, Panos Linos, Michele Venable
FROM: Rachel Burke
SUBJECT: Status report for week 4/30/18

I. RED FLAGS:

II. ISSUES:

We overwrite information in Firebase because we do not have a unique id other than date currently for the personal info form

III. ACCOMPLISHMENTS (dates):

4/23 & 25/18

o Worked on final presentation and final report – Full Team

4/25/18

o Emailed consultants about the final presentation - Gabbi

IV. ACTION ITEMS FOR FOLLOWING WEEK:

- Finish the final presentation and final report – Full Team
- Give final presentation – Full Team
- Turn in final report - Rachel
- Send reminder email to Michele and consultants - Gabbi

User Manual

To use the application, go to <https://indiana-kidney-foundation.firebaseio.com/>. This is the host link for our application. The link will open on the Personal Information form and the links in the navigation bar at the top of the screen will take you to the appropriate form.

Click on “Personal Information” in the navigation bar. The personal information form will display. On this form, insert appropriate information into all of the text boxes, datepickers, dropdowns, radio buttons, and checkboxes for each requested piece of information or question. Click the “Submit” button at the bottom of the form to submit to the database. A pop-up will display with all of the information submitted to the database. If a user would like this form to be in Spanish, they can select the Spanish option at the top of the page and the page will re-render in Spanish and use the form the same as described above.

Click on “Consent Form” in the navigation bar. The consent form will display. On this form you can read the consent form.

Click on “Pre Screening” in the navigation bar. The pre screening survey will display. On this form, click on the appropriate radio buttons that are displayed on the form for each requested piece of information or question. Click the “Submit” button at the bottom of the form to submit to the database. A pop-up will display with all of the information submitted to the database.

Click on “Station Screening” in the navigation bar. The station screening form will display with a section for each station. On this form, insert appropriate information into the textbox and/or radio buttons in each section for each requested piece of information or question. After inserting information into each section, click the corresponding “Submit” button at the bottom of each section. A pop-up will display with all of the information submitted to the database.

Click on “Post Screening” in the navigation bar. The post screening survey will display. On this form, click on the appropriate radio buttons that are displayed on the form for each requested piece of information or question. Click on the “Submit” button at the bottom of the form to submit to the database. A pop-up will display with all of the information submitted to the database.

Chapter 8

Future Work

There is a lot of future work that can be completed with this project. A lot of the issues concern formatting of the GUI and database.

Future Objectives

- Revise database design
- Develop a unique user id upon generation of register form (separate function)
- Obtain more functionality (see below)
- Fix Bugs
- Enable Spanish option for the other forms
- Login Screen for NKFI to open and access the application
- Add comments section to the end of the Station Screening form

Future Functionality

- The application must have the ability to display, add, and remove sponsor logos.
- The application has a prompt or notice of the ability to become an organ donor with a link to take patients to the correct site to register to be an organ donor.
- The application has the ability to display a patient's information from the database in a form to be used for printing, lookup, and application display purposes in a Results Display Form.
- The application needs a login screen for NKFI to open the application.

Future Bugs to Fix

- Do not allow nonnegative ages to be input into the age
- Fix the formatting for phones, tablets, and all browsers
- Allow multiple patient's personal information to be saved into the database
- Have phone numbers be input with the correct format

References

About React - <https://reactjs.org/>

About Firebase - <https://firebase.google.com/>

About Bitbucket - <https://bitbucket.org/product>

About Slack - <https://slack.com/>

Javascript Tutorials - <https://www.codecademy.com/learn>

(create account, find Javascript, and begin tutorials)

React Tutorials - <https://bit.ly/1tM68KL> (Watched all 5 parts, link is to part 1)

<https://bit.ly/1oErWKH> (Watched episodes as needed, link to episode 1)

Current Project Version - <https://indiana-kidney-foundation.firebaseio.com/>

Bitbucket Project Location - <https://bitbucket.org/kidneyteam/kidneyapp>

Firebase Project Location -

<https://console.firebase.google.com/u/1/project/indiana-kidney-foundation/overview>

Wireframe Location -

<https://app.moqups.com/bcavenag@butler.edu/nqIHJLzqrX/view/page/ad64222d5>

UML document is in the project source code in bitbucket -

https://bitbucket.org/kidneyteam/kidneyapp/src/master/KidneyAppUML_May2018.html

Appendices

- The information from our client, Michele Venable includes:

NATIONAL KIDNEY FOUNDATION OF INDIANA
 911 East 86th Street, Suite 100
 Indianapolis, Indiana 46240-1840
 www.kidneyindiana.org

CONSENTIMIENTO, LIBERACIÓN Y FORMULARIO DE AUTORIZACIÓN

Bienvenido al Indiana Kidney Check Program, para ser examinado debe tener 18 años o más, no en diálisis o tener un trasplante de riñón y firmar este consentimiento. Este examen será completado por profesionales capacitados y se le dará de forma gratuita.

PROCEDIMIENTOS

La evaluación completa incluye una encuesta de salud, control de la presión arterial, IMC, análisis de sangre, prueba de orina, consulta con un profesional de la salud y un cuestionario posterior al cribado. Todos los resultados estarán disponibles al final de la proyección. Para resultados anormales, se le remitirá a su médico para seguimiento o se le dará una lista de clínicas en su área para hacer una cita.

Expectativas con los procedimientos en la selección se explican aquí. La medición de la presión arterial en la parte superior del brazo puede causar molestias temporales, entumecimiento u hormigueo en la mano. El análisis de sangre se obtiene con pallo de dedo, lo que puede causar dolor temporal o escozor donde se toma la muestra. Raramente, usted puede sentir un palpar en el sitio de la punción o tiene magulladuras leves.

PARTICIPACIÓN

La participación es voluntaria y usted puede optar por detener la detección en cualquier momento. Al participar en este programa de cribado, usted conoce y acepta todos los riesgos y responsabilidades asociados y resultados de la misma. Usted libera la Fundación Nacional del Riñón de Indiana (NKFI) y su designado de toda responsabilidad o daños que puedan venir o suceder durante la proyección. El programa sólo examinará la salud de los riñones y no es un examen médico completo. Los resultados de la prueba no muestran o implican que usted HACE o NO tenga enfermedad renal. Para el diagnóstico de una condición médica como una enfermedad renal, usted está de acuerdo y sabe que debe consultar a un médico para un examen médico completo. Esta es su responsabilidad. Usted acepta que NKFI NO es un proveedor de atención médica y no proporciona un diagnóstico. Usted entiende que NKFI y su designado tienen el derecho de no filtrarlo si no firma este formulario.

CONFIDENCIALIDAD

Su participación y su información individual son privadas y NKFI ha tomado medidas para asegurar sus datos. Los resultados se recopilarán con fines estadísticos sin utilizar la información de identificación individual. Un miembro de nuestro personal puede responder a cualquier pregunta que pueda tener sobre la proyección. También puede llamar a la oficina de la Fundación Nacional del Riñón de Indiana para obtener más información al 317-722-5640 o 1-800-382-9971.

Firma: _____ Fecha: _____ Hora: _____

Nombre en letra imprenta: _____

Nombre en letra imprenta del testigo: _____

NATIONAL KIDNEY FOUNDATION OF INDIANA
 911 East 86th Street, Suite 100
 Indianapolis, Indiana 46240-1840
 www.kidneyindiana.org

HEALTH SCREENING CONSENT, RELEASE AND AUTHORIZATION FORM

Welcome to the Indiana Kidney Check Program, in order to be screened you must be 18 years or older, not on dialysis or have a kidney transplant and sign this consent. This screening will be completed by trained professionals and will be given free of charge.

PROCEDURES

The full screening includes a health survey, blood pressure check, BMI, blood test, urine test, consultation with a health professional, and post-screening questionnaire. All the results will be available at the end of the screening. For abnormal results, you will be referred to your doctor for follow up or given a list of clinics in your area to make an appointment.

Expectations with the procedures in the screening are explained here. Blood pressure measurement in the upper arm can cause temporary discomfort, numbness or tingling in the hand. The blood test is obtained by finger stick, which can cause temporary pain or stinging where the sample is taken. Rarely, you may feel a throbbing at the puncture site or have slight bruising.

PARTICIPATION

Participation is voluntary and you may choose to stop the screening at any time. By taking part in this screening program, you know and accept all the risks and responsibilities associated with and resulting from it. You release National Kidney Foundation of Indiana (NKFI) and its designee from all liability or damages that may come from or happen during the screening. The program will only screen for kidney health and is not a complete medical exam. Test results do not show or imply that you DO or DO NOT have kidney disease. For diagnosis of a medical condition such as kidney disease, you agree and know that you must see a doctor for a complete medical exam. This is your responsibility. You agree that NKFI is NOT a health care provider and is not providing a diagnosis. You understand that NKFI and its designee have the right not to screen you if you do not sign this form.

CONFIDENTIALITY

Your participation and your individual information are private and NKFI has taken steps to secure your data. Results will be compiled for statistical purposes without using individual identifying information. A member of our staff can answer any questions you might have about the screening. You may also call the National Kidney Foundation of Indiana office for more information at 317-722-5640 or 1-800-382-9971.

Signature: _____ Date: _____ Time: _____

Printed Name: _____

Witness Printed Name: _____

Consent Form (Spanish)



INDIANA KIDNEY CHECK SCREENING
 PRE-SURVEY

Please answer these questions **before** participating in the Indiana Kidney Check screening. Please circle your answer:

- Do you know what the kidneys do and how they help the body to function?
 A. Yes
 B. No
- Can you think of 3 risk factors for kidney disease?
 A. Yes
 B. No
- Do you know what to do to keep your kidneys healthy?
 A. Yes
 B. No

Pre Screening Form (English)

Consent Form (English)



INDIANA EXAMEN DE CHEQUE DE RIÑÓN
 PRE-ENCUESTA

Por favor, conteste estas preguntas antes de participar en el examen de Indiana Kidney Check. Por favor circule su respuesta:

- ¿Sabes lo que hacen los riñones y cómo ayudan al cuerpo a funcionar?
 SI
 B. No
- ¿Puede pensar en 3 factores de riesgo para la enfermedad renal?
 SI
 B. No
- ¿Sabe qué hacer para mantener sus riñones sanos?
 SI
 B. No

Pre Screening Form (Spanish)

National Kidney Foundation of Indiana
INDIANA KIDNEY CHECK!

PLEASE PRINT: SCREENING CITY _____ TODAY'S DATE _____

FIRST NAME _____ M.I. _____ LAST NAME _____ DATE OF BIRTH _____ AGE _____

ADDRESS _____ APT.# _____ CITY _____

STATE _____ ZIP CODE _____ AREA CODE & PHONE NUMBER _____ EMAIL _____

SEX (check one) Female Male

With which racial or ethnic group(s) do you identify?
 American Native American Native Hawaiian or Other Pacific Islander
 Asian White/Caucasian
 Black/African-American Hispanic/Latino

Do you have a doctor? Yes No
 Do you have health insurance? Yes No

How did you hear about today's screening?
 NKF Website Community organization/Churches Printed Flyer Employer/School
 Family member/Friend Radio/TV/Newspaper Doctor Other _____

Were you aware that there is a way to test your kidney function? Yes No
 Would you prefer your follow-up materials in? English Spanish

Consent: I confirm that I am 18 years of age and older, and that I have read the consent form.

RISK QUESTIONS:

1. Are you currently on dialysis or have you received a new kidney? Yes No

2. Has a doctor ever informed you that you have any of these conditions? (in the last five years?)
 High blood pressure or hypertension? Yes No
 High blood sugar or diabetes? Yes No
 High blood cholesterol? Yes No
 Heart disease, heart attack, or stroke? Yes No
 Chronic Kidney Disease? Yes No

If yes, are you taking medications?
 Yes No

3. Do you have any family history of the above conditions?
 (Mother, Father, Sister, Brother, grandparent) Yes No (if yes List: _____)

4. Tobacco History:
 I have never smoked Quit smoking, less than two years ago
 I currently smoke Quit smoking, two or more years ago *See above*

1. Weight _____ Height _____
 BMI _____ (Normal BMI: 19-24)

2. Blood Pressure #1 _____
 Second Reading (if elevated) _____
 Normal <120/80
 Pre-Hypertension Elevated 120-139/80-89
 Hypertension Stage 1 140-159/90-99
 Hypertension Stage 2 160-179/100-109

3. Fingertick Glucose _____ mg/dl
 (Normal Fasting: 70-99 mg/dl / Normal non-fasting: 70-140 mg/dl)
 Fasting? Yes No

4. Fingertick eGFR Test
 Creatinine _____ eGFR _____ (Normal: 60-120)
 Urine Test
 Microalbumin _____ (if applicable)
 Urine IgA (Microalbumin) Results (What You Can Do)
 Negative: Monitor at yearly checkups
 Positive: Ask doctor to repeat the test in 3-6 months

Personal Information and Screening Form (English)



INDIANA KIDNEY CHECK SCREENING PROGRAM EVALUATION

Please let us know about your experience after participating in the Indiana Kidney Check screening. Please circle your answer:

- Has your understanding of what kidneys do for the body increased?
A. Yes B. No
- Did you learn 3 or more risk factors for chronic kidney disease?
A. Yes B. No
- Has your understanding of how to lower your risk for chronic kidney disease increased?
A. Yes B. No
- Are you happy with your overall experience today?
A. Yes B. No (Please help us improve by commenting below)

Post Screening Survey (English)

National Kidney Foundation of Indiana
INDIANA KIDNEY CHECK!

ESCRIBAN LETRA MAYÚSCULA: WINDSOR, CUBANA, FECHA

PRIMER NOMBRE _____ INICIAL _____ APELLIDO _____ FECHA DE NACIMIENTO _____ EDAD _____

DIRECCIÓN _____ APT.# _____ CIUDAD _____

ESTADO _____ CÓDIGO _____ ASIA _____ NÚMERO TELEFÓNICO _____ CORREO ELECTRÓNICO _____

GÉNERO (marque sólo uno) Femenino Masculino

¿Cuál es su raza o grupo étnico(s)?
 Americana Hispana u otros islas del pacífico
 Asiática Blanca/Caucásica
 Negra/Africana Hispana/Latina

¿Tiene un médico general? Sí No

¿Tiene seguro médico? Sí No

¿Cómo se enteró de que estamos haciendo esta prueba médica?
 La página de NKF Organización comunitaria Iglesia Viajes Empresa en donde trabaja/Colegio
 Familia/Tiempo Radio/TV/Perifoneo Doctor Otros _____

¿Sabe qué es la prueba para evaluar el funcionamiento de los riñones?
 Sí No

¿En qué idioma prefiere que le entregamos la información?
 Inglés Español

Advertencia: *El estudio que nos ayuda de 18 años y que le hizo esta valoración.
 ¿Sabe de qué se trata? Sí No

PREGUNTAS RELACIONADAS CON LOS FACTORES DE RIESGO

1. Ha recibido diabetes o se le ha trasplantado un riñón? Sí No

2. En los últimos 5 años el doctor le ha informado que usted sufre alguna de estas enfermedades?
 Si la respuesta es afirmativa, ¿está usted tomando medicina?
 Tensión arterial alta o hipertensión Sí No Sí No
 Azúcar en la sangre o diabetes Sí No Sí No
 Colesterol alto Sí No Sí No
 Enfermedad del corazón, paro cardíaco o derrame Sí No Sí No
 Enfermedad crónica de los riñones Sí No Sí No

3. Han sufrido sus familiares alguna de estas enfermedades?
 (Padres, hermanos, hijos) Sí No / Si la respuesta es afirmativa, anote quienes las sufren: _____

4. Consumo de cigarrillo:
 Nunca he fumado Después de fumar hace menos de diez años *Dejar de fumar 1800-724-3069*
 Yo sigo Después de fumar hace más de diez años

Firma del médico: _____ Persona que lo llenó: _____

RESULTADOS

1. Peso _____ Entera _____
 Índice de masa corporal _____ (Normal: 19-24)

2. Tensión arterial #1 _____
 Segundo lectura (en caso de que la primera haya sido alta)

3. Tensión arterial #2 _____
 (Normal: 0.6-1.2)

4. Tasa de filtración glomerular (eGFR) _____
 Creatinina _____ eGFR _____ (Normal: 60 o superior)

5. Análisis instantáneo de la orina
 Microalbuminuria _____ (Normal: 0.6-1.2)
 Análisis de la orina (Microalbuminuria) Resultados ¿Qué medidas puede tomar?
 Negativo: Hacer un análisis de orina cada año.
 Positivo: Solicite a su médico que repita la prueba en 3-6 meses.

Personal Information and Screening Form (Spanish)



INDIANA EXAMEN DE CHEQUE DE RIÑÓN PROGRAMA DE EVALUACIÓN

Por favor, háganos saber acerca de su experiencia después de participar en el examen de Indiana Kidney Check. Por favor circule su respuesta:

- ¿Ha aumentado su comprensión de lo que hacen los riñones para el cuerpo?
A. Sí B. No
- ¿Aprendió 3 o más factores de riesgo de enfermedad renal crónica?
A. Sí B. No
- ¿Ha aumentado su comprensión de cómo reducir su riesgo de enfermedad renal crónica?
A. Sí B. No
- ¿Está satisfecho con su experiencia general hoy?
A. Sí B. No (Por favor ayúdenos a mejorar comentando a continuación)

Post Screening Survey (Spanish)

- Source code for this project may be found at <https://bitbucket.org/kidneyteam/kidneyapp>.
- See Dr. Panos Linos for customer and peer evaluation forms.
- Our presentation slides for our work on the National Kidney Foundation project are as follows:

EPICS: National Kidney Foundation of Indiana

Rachel Burke, Dillon O'Donovan, and Gabbi Forsythe



Our Team

- ▶ **Rachel Burke** (Junior, Mathematics & Software Engineering)- Team Leader, Webmaster, Quality Assurance, Programmer
- ▶ **Dillon O'Donovan** (Junior, Mathematics & Computer Science)- Database Expert, Web Developer, Programmer
- ▶ **Gabbi Forsythe** (Freshman, Software Engineering)- Client Liaison, Documentation Lead, Programmer
- ▶ **Michele Venable** Client, Contact at the National Kidney Foundation of Indiana

National Kidney Foundation: Mission Statement

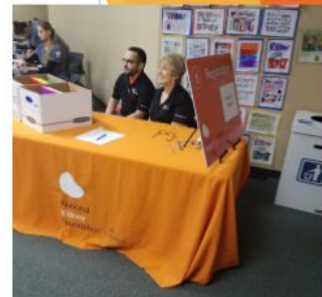
“The National Kidney Foundation is the leading organization in the U.S. dedicated to the awareness, prevention and treatment of kidney disease for hundreds of thousands of healthcare professionals, millions of patients and their families, and tens of millions of Americans at risk.”



National Kidney Foundation®
of Indiana

National Kidney Foundation of Indiana

- ▶ Provide screenings to determine possible health issues and educate clients about chronic kidney disease
- ▶ Screening event includes
 - ▶ Blood pressure testing
 - ▶ BMI testing
 - ▶ Glucose/GFR(glomerular filtration rate)
 - ▶ Urinalysis
 - ▶ Consultation with medical expert



2017 NKFI Kidney Screenings

Client Requirements:

- ▶ **Overall Goal**
 - ▶ Take current screening process and make it completely digital
- ▶ **Semester Goals**
 - ▶ Recoloring/Redesign for improved readability
 - ▶ Addition of Spanish option
 - ▶ Addition of Pre and Post Screening Surveys
 - ▶ Addition of Consent Form with physical signature box
 - ▶ Ability to pull up patient information at each station of the screening
 - ▶ Look up patient information by name
 - ▶ Ability for staff to change sponsor logos

Accomplishments

- ▶ Improved overall functionality of the app
 - ▶ Changed how information is saved to database
 - ▶ GUI Adjustments
- ▶ Added Pre and Post checkup surveys and Consent Form
- ▶ Spanish Option on the Personal Information Form
- ▶ Improved documentation for future teams

Future Work

- ▶ **Functionality & Feature Improvements:**
 - ▶ Ability to add, display, and remove sponsor logos
 - ▶ Ability to prompt users to become an organ donor and take them to the proper webpage to register
 - ▶ Ability to look-up and display patient information from the database in a Results Form
 - ▶ Add a comments section at the end of the station screening form
 - ▶ Add Spanish translations for the other patient forms

Future Work

- ▶ **More Feature & Functionality Improvements:**
 - ▶ Revise database design
 - ▶ Develop unique user id for patients upon form generation
 - ▶ Add a login screen
- ▶ **Bug Fixes**
 - ▶ Adjust formatting on Tablets, phones, etc.
 - ▶ Input phone numbers in proper format
 - ▶ Don't allow for negative age inputs
 - ▶ Allow multiple patients information to be saved in the database

Our Experience

- ▶ Understanding and implementing client requests
- ▶ Learned to use available resources
 - ▶ Examples: websites, consultants, professors
- ▶ Technical Lessons:
 - ▶ React and Javascript
 - ▶ Bitbucket and SourceTree
 - ▶ CSS styling

Acknowledgements

- ▶ National Kidney Foundation of Indiana
- ▶ Michele Venable
- ▶ Dr. Panos Linos
- ▶ Billy Thomas
- ▶ Lauren Hannemann
- ▶ Sean Gibbens
- ▶ David Harting