CS 4990 – Senior Project

Project Proposal

1. FVSRA IMS

This is a continuation of our project from Software Engineering, the Fox Valley Special Recreation Association Incident Management System.

2. Group Size / Contact information

- Andy Garcia
- Josh Valentino
- Diego Tapia
- Matt Ayers

3. Abstract/Purpose

The purpose of this system is to create and implement a functional incident management system for the customer, Fox Valley Special Recreation Association. Their current system is utilized with paper forms and needs to be replaced with a web application for all employees and designated admins to use.

4. Background/Prior Knowledge

We all have the same level of experience: Intermediate level in HTML, CSS, JS, jQuery, mySQL, Node.js. Newbie level in React. Our intermediate skills we have all practiced in multiple of our courses here at Aurora University. Our newbie level skill we have never used before. The only member of our group who has even done any research into React so far is Andy.

5. Description

A. The overall goal of this project is to create a functioning Incident Management System for the Fox Valley Special Recreation

Association. This project is being continued from last semester, meaning the project is starting off half completed. The main styling of the front end is almost fully complete. Two of the five forms are fully functional in terms of submitting the data to the database. The remaining forms that are not functional need variable changes on the front end, and the backend to be created to post them to the database. The next major functionality would be the exporting of the form data from the database to an Excel file. Another aspect that needs to be corrected is the form submission page. We had perceived this functionality to be completed from our previous work, however, this turned out to be a problem. The submission page usually does not come up after successful form submission, which needs to be corrected. This form submission page is useful because it gives a clean visual indication of the status of the form they attempted to submit.

Another main aspect of the program that needs to be fixed is the login function. Currently the login page does not have a functioning back end. The user has an option of clicking the login button or the admin button to reach their perspective pages. This needs to be corrected so there are two buttons, one for employees and one for admins. The employee button will link directly to the form creation page, which they have access to four of the five forms, excluding form 04. The admin button will link to a login page where their credentials will need to be entered and verified by the backend comparing to the database. The admin login will be preset by us and changed before deployment to meet the customer's needs. After credential verification, it will link to the admin page where all of the admin functions will be available. These functions include form creation, form viewing, and security. The form creation function for the admin is the same as the employee, with the addition of form 04. The form viewing function will allow the admin to download the current form data in the database to an excel file. The security function will allow the admin to create users(giving them a username, and password), change the main admin password, change any user's password, and delete any user(this feature will need to have a layer of protection via a master password that is seperate from the admin password).

B. The people that will use this system fall into two main categories. The first being all FVSRA employees. The employees are able to login to the system easily and create a form for the designated incident that occurred. The second category is the admins. The admins are able to view any created forms as well as create forms.

C. The figure below is the workflow diagram that describes how the customer will use the system. The user will start on the initial page. This page gives the user two options in the form of buttons. The admin button and employee button. If the user clicks the employee button they will be redirected to the form selection page.

On the form selection page the employee will have access to 4 of the 5 forms, excluding form 04. The user would be able to click the button correlating to the form they wish to fill out. After filling out the form they would click the submit button. Upon clicking this button it will either inform the user of input errors, or if errorless, will redirect to the status page. The status page will have a confirmation message of the form submission. There will be a button to link back to the home page if they wish to submit another form.

If the user selects the admin button, they would be redirected to the login page. On this page the user would enter their username and password, and then click submit. If the username and password are incorrect, a message would display informing the user and they would be prompted to reenter. If the username and password are correct, the user will be redirected to the admin page.

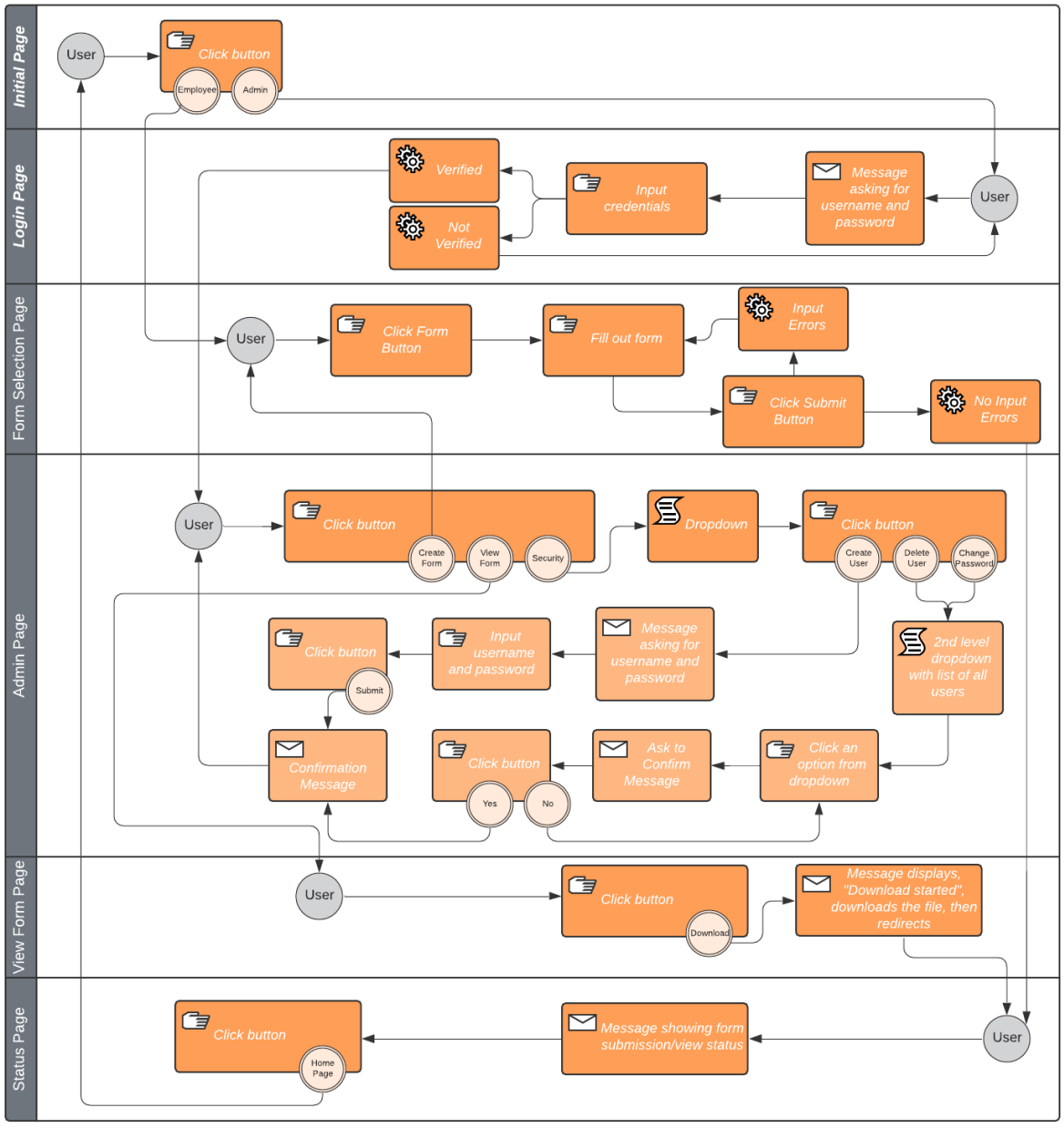
On the admin page the user has three options. If they press the create form button, they will be redirected to the form selection page. This page functions the same as it would for the employee with the addition of form 04. The other two options are the view form button and the security button.

If the user clicks the view form button they will be redirected to the view form page. The user would click the download button and a message would appear confirming the download. After the download has started they would be redirected to the status page which functions the same as with a form submission.

If the user were to click the security button a dropdown list would appear with three options. The first option is the create user button. If the user clicks the create user button a box message with a submit button will appear prompting the user to input a username and password. After submitting they would get a confirmation message and the page would reset to the base state with no buttons clicked.

The second option is the delete user option. If the user clicked this button a second dropdown list would appear with all of the users currently registered. The user would select a user and a confirmation message would appear. If yes was selected the user would be deleted and a confirmation would appear, then resetting the page. If no was selected the message would disappear and the deletion would be canceled.

The third option is the change password option. This option functions the same way as the delete user option, instead in the confirm prompt, there would be a text box to enter the new password.


Initial Page
User
Click button
Employee
Admin
Login Page
Verified
Not Verified
Input credentials
Message asking for username and password
User
Form Selection Page
User
Click Form Button
Fill out form
Input Errors
Click Submit Button
No Input Errors
Admin Page
User
Click button
Create Form
View Form
Security
Dropdown
Click button
Create User
Delete User
Change Password
Click button
Submit
Input username and password
Message asking for username and password
2nd level dropdown with list of all users
Confirmation Message
Click button
Yes
No
Ask to Confirm Message
Click an option from dropdown
View Form Page
User
Click button
Download
Message displays, "Download started", downloads the file, then redirects
Status Page
Click button
Home Page
Message showing form submission/view status
User

D. **As Measured by:**

The specific goal of the project is to have a functioning web application that follows the customer's requirements as closely as we can. The system should allow for an employee to create forms without logging in. The admin features should only be accessible to the admin, who needs to have a functioning log in UI that is connected to the mySQL database. It should allow the admin to change the passwords of the users he creates to have admin access.

The forms of the project should be able to be created and viewed. The forms should be visually appealing, have a submission page, and successfully populate to the database. These forms also need to be exportable via Excel file.

6. Significance

A. The project, assuming accepted, will be utilized by FVSRA in a real world application as an incident management application.
B. The part of the project that will hopefully impress future prospect employers would be the group work aspect, working in an agile environment, and the implementation of React.
C. HTML, CSS, JS, and React will be used for the front end. mySQL, JS, REST API, phpmyadmin, and Node.js for the backend.
D. The new technology we will be implementing is React. None of us have worked with React before so we are not completely sure it's use, however, we know it is going to be implemented into the front end.

7. Tasks and Schedule

Our group has 4 members and we plan to split up the work as evenly as we can. Josh and Andy are the only members who were apart of the same project from last semester, so they will carry the heaviest weight in terms of organization and understanding especially in the first couple weeks. Hopefully after the fourth week everyone in the group will fully understand their role and we can split up the hours into 135 hours each.

A. ***Overall Task Schedule*** -

Front End Backlog

Courtesy of:
Ricksoft

Priority	Task ID	Task Type	Task Name	Description	Sprint Ready	Status	Estimates Hours	Week Completion Date
High	F1	Frontend	Login Page Update 1	Change initial page to employee and admin button	Yes	Yes	1	Week 5
High	F2	Frontend	Login Page Update 2	Link admin page and employee page accordingly	Yes	Yes	0.25	Week 5
High	F3	Frontend	Form Access	Remove form 04 from the employee form creation page	Yes	Yes	1.5	Week 5
High	F4	Frontend	Update Form01	Update IDs and Names for form variables on Form 01	Yes	Yes	2	Week 5
High	F5	Frontend	Update Form02	Update IDs and Names for form variables on Form 02	No	Yes	5	Week 5
High	F6	Frontend	Update Form04	Update IDs and Names for form variables on Form 04	Yes	Yes	2	Week 5
High	F7	Frontend	Update Form04	Update IDs and Names for form variables on Form 04E	Yes	Yes	2	Week 5
Low	F8	Frontend	Question mark	Add clickable question mark to each form with brief description	Yes	Yes	4	Week 5
High	F9	Frontend	Fix Form 02	Form 02 does not display the proper inquiry fields. Needs to be entirely redone	Yes	Yes	5	Week 5
High	F10	Frontend	Update Admin Style	Change admin page color scheme and orientation	Yes	Yes	2	Week 5
Low	F11	Frontend	Add FV Headers and Footers	Add FV Headers and Footers	Yes	Yes	1	Week 4

Back End Backlog

Courtesy of:
RS Ricksoft

Priority	Task ID	Task Type	Task Name	Description	Sprint Ready	Status	Estimates Hours	Week Completion Date
High	B1	Backend	Form 01 Functionality	Get, Post, and Delete features need to be created	Yes	Yes	2	Week 8
High	B2	Backend	Form 04 Functionality	Get, Post, and Delete features need to be created	Yes	Yes	2	Week 8
High	B3	Backend	Form 04E Functionality	Get, Post, and Delete features need to be created	Yes	Yes	2	Week 8
High	B4	Backend	Form 01 Connection	Connect front to back via changing variables	Yes	Yes	2	Week 8
High	B5	Backend	Form 02 Connection	Connect front to back via changing variables	Yes	Yes	2	Week 8
High	B6	Backend	Form 04 Connection	Connect front to back via changing variables	Yes	Yes	2	Week 8
High	B7	Backend	Form 04E Connection	Connect front to back via changing variables	Yes	Yes	2	Week 8
High	B8	Backend	Form 01 Checker	Develop backend for checking variables so user cant submit empty	Yes	Yes	2	Week 8
High	B9	Backend	Form 02 Checker	Develop backend for checking variables so user cant submit empty	Yes	Yes	2	Week 8
High	B10	Backend	Form 04 Checker	Develop backend for checking variables so user cant submit empty	Yes	Yes	4	Week 8
High	B11	Backend	Form 04E Checker	Develop backend for checking variables so user cant submit empty	Yes	Yes	2	Week 8
Low	B12	Backend	Status Page Route	After form submittion and download reroute to status page	Yes	Yes	2	Week 8
High	B13	Backend	Dowload CSV file for Minor Injury Log	Compile data to be downloaded as a csv file to the user	Yes	Yes	2	Week 8

Database Backlog

Courtesy of:
RS Ricksoft

Priority	Task ID	Task Type	Task Name	Description	Sprint Ready	Status	Estimates Hours	Week Completion Date
Medium	D1	Database	Rename Variables Form 01	Rename Variables Form 01	Yes	Yes	2	Week 10
Medium	D2	Database	Rename Variables Form 02	Rename Variables Form 02	Yes	Yes	2	Week 10
Medium	D3	Database	Rename Variables Form 04	Rename Variables Form 04	Yes	Yes	4	Week 10
Medium	D4	Database	Rename Variables Form 04E	Rename Variables Form 04E	Yes	Yes	2	Week 10
Medium	D5	Database	Create Login Table	Create login table including username and password information	Yes	Yes	2	Week 10

Learning Backlog

Courtesy of:
RS Ricksoft

Priority	Task ID	Task Type	Task Name	Description	Sprint Ready	Status	Estimates Hours	Week Completion Date
TOP	L1	Learning	Research React	Each member research/practice react	Yes	Yes	8	Week 4

Weekly Schedule* - Note: Red Weeks are weeks where we will not be able to complete tasks. Green weeks are go weeks, in which we will have a sprint in order to complete tasks

	Start	Tasks To Be Completed by End of Week	Notes
1	2022-01-10	Intro Week - No Tasks	
2	2022-01-17	Proposal Week - No Tasks	MLK Day (1/17) No Class
3	2022-01-24	Planning Week - No Tasks	
4	2022-01-31	Sprint 1 - L1	
5	2022-02-07	Technical interview practice - No Tasks	
6	2022-02-14	Sprint 2- F1-F11	
7	2022-02-21	Technical interview practice - No Tasks	
8	2022-02-28	Sprint 3- B1-B13	
9	2022-03-07	Break - No Tasks	Spring Break - (March 7-13)
10	2022-03-14	Sprint 4- D1-D5	
11	2022-03-21	Technical interview practice - No Tasks	
12	2022-03-28	Sprint 5	
13	2022-04-04	Technical interview practice - No Tasks	
14	2022-04-11	Sprint 6	Easter Break - April 15-17
15	2022-04-18	Final Sprint (7) Week	
16	2022-04-25	Presentations	
	2022-05-02		May 2-7

B. ***Schedule risk*** -

We believe our schedule is as aggressive as required to complete the current set of objectives. We plan to attempt to keep slightly ahead of schedule. If we realize we are falling behind or more tasks need to be added, then the schedule will be adjusted. The limit of aggression would be our overall time commitment, which would on average be about 9 hours per week per member.

C. ***Schedule Monitoring -***

Progress will be measured through the product backlog and weekly status reports. When a task is fully complete, the group will review each other's work through testing. For smaller tasks, a quick review will suffice. If a task that was scheduled to be completed is past due, the group will evaluate the task, determine if more people need to be devoted to it, and re-estimate the competition date. A task will be fully confirmed as completed when the entire group has confirmed so. Full testing of the whole system will be the best way to discover any possible errors we could have made, and task’s that turned out to have flaws will be adjusted as main priority.