

Team Badgers

Skills/Knowledge Badging System



Capstone Presentation

Team Badgers Members



- **Sponsors (State Farm Insurance):** Glenn Austin, Dave Hopfensperger, Hans Yeazel
- **Mentor:** Sambashiva Kethireddy



Logan Ritter

- Team Lead
- Project Communicator
- Documentor



Tristan Marcus

- Development Architect
- Quality Assurance
- Lead Front-end Coder



Robel Tegegne

- Release Manager
- Lead Back-end Coder



Yuanbo Xu

- Front-end Coder



Abdulrahman Alamoudi

- Front-end Coder

The Problem



State Farm Insurance - Enterprise Technology in Tempe, AZ

- Work with all things tech
- 6,000 employees
- Majority are currently working virtually

Current Problems

- Lack of social interaction, motivation, and recognition that existed in the office.
- There is no current online rewards/recognition system
- Unable to view what other teams/coworkers are learning, achieving, or accomplishing without direct contact.

The Solution



Gamified Web based Social Media - Skills/Knowledge Badging System

- Single Page Application (SPA)
 - Interesting and responsive GUI
 - Secure login / User Authentication
 - Badge delivery system (send/receive/remove)
 - Badge printing
 - Internal social currency (Kudos)
 - Email signature integration (Via custom generator)

The product that we envision will be similar to a video game achievement system

Requirements Overview



Non-Functional Requirements Overview

- Performance requirements
 - GUI - easy to navigate and readable
 - Accounts - creating and logging into an account will be sufficiently quick
 - Badges - Simple way of viewing and sending badges with high resolution badge images.
 - Social Currency - Simple way of sending and redeeming kudos
 - Security - using a token instead of sending sensitive info over http request
- Environmental requirements
 - Application must be a single page
 - Must be easy to transfer over to State Farm

Requirements Overview Continued



Functional Requirements Overview

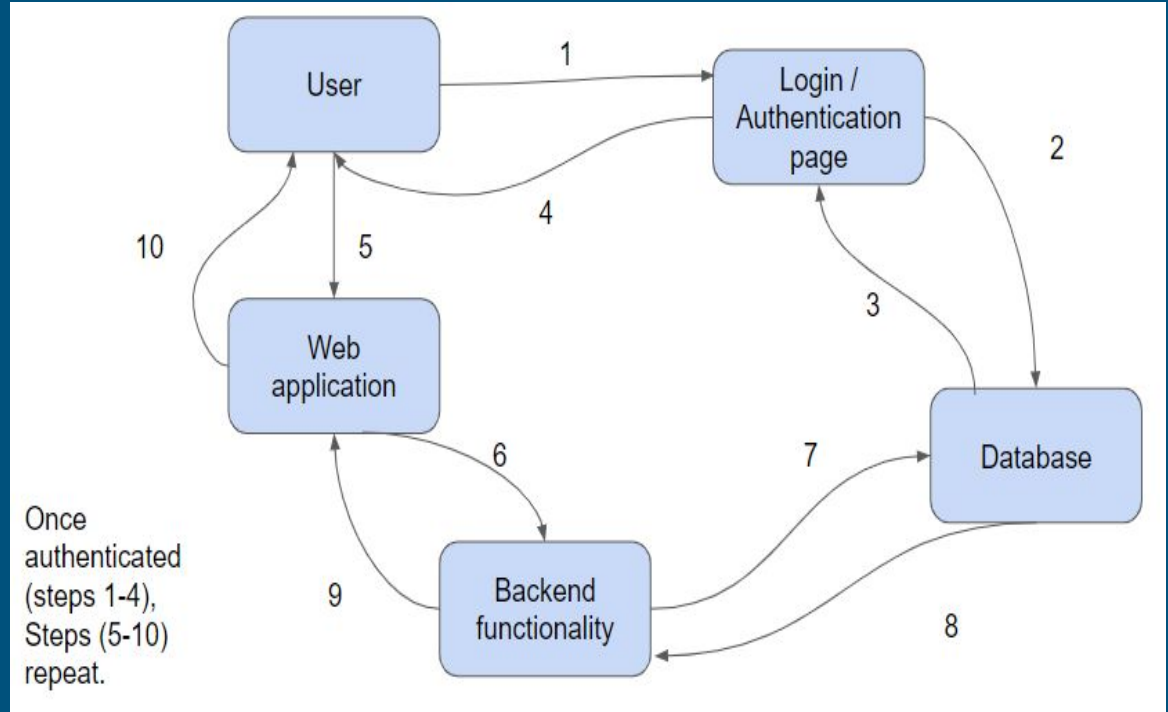
- Interesting and responsive GUI (Single Page Application)
- Account system with access restrictions
- Social currency (Kudos)
- Badge Delivery System
- Badge printing
- Email signature integration

Architecture Overview



Technologies

- Front-end - ReactJS
- Back-end - (express) NodeJS
- Database - MongoDB
- Graphic Design - Gimp



Implementation Overview



- Front-end ReactJS
 - Component based structure will allow us to easily create a single page application.
 - Offers a wide variety of tools to support our functionality as an internal social media.
 - Optimization tools are already implemented into React's libraries.
 - Natively supports NodeJS.
- Back-end NodeJS (express)
 - Highly extensible
 - NodeJs uses Javascript which maintains consistency with the front end.
 - Team Familiarity and experience.
- Database - MongoDB
 - Ease of use
 - Accessibility
 - Real time synchronization
 - Team Familiarity and Experience.

Prototype Review

Prototype walkthrough



Challenges and Resolutions



- Real time content updates - The application performs many functionalities that require a real time update to happen in order to provide the most updated information to every user.
- State management - Single page applications with user restrictions must enforce state management in order to keep the application displaying updated/accurate information.
- User Authentication (middleware) - Making sure login sessions aren't manipulated and user's aren't logged in and out on data updates.
- General bug fixing - With development, there are bound to be bugs that come up with new implementations.

Schedule



Team Badgers Implementation Plan

	Week 1 (1/11-1/16)	Week 2 (1/17-1/23)	Week 3 (1/24-1/30)	Week 4 (1/31-2/6)	Week 5 (2/7-2/13)	Week 6 (2/14-2/20)	Week 7 (2/21-2/27)	Week 8 (2/28-3/6)	Week 9 (3/7-3/13)	Week 10 (3/14-3/20)	Week 11 (3/21-3/27)	Week 12 (3/28-4/3)	Week 13 (4/4-4/10)	Week 14 (4/11-4/17)	Week 15 (4/18-4/24)	Week 16 (4/25-4/30)
<i>Foundation and Setup</i>	Completed	Completed														
<i>Connecting Components</i>		Completed	Completed													
<i>Security and User Authentication</i>			Completed	Completed												
<i>Badge Delivery System</i>				Completed	Completed	Completed	Completed									
<i>Kudos System</i>					Completed	Completed	Completed	Completed								
<i>Email Signature Generator</i>							Completed	Completed	Completed							
<i>Badge Printing</i>									Completed	Completed	Completed					
<i>Enhancement and Extra Features</i>												Completed	In Progress	In Progress	In Progress	Backlog
<i>Testing</i>		Tested Foundation and Setup	Tested Connecting Components	Tested Security and User Auth			Test Badge Delivery	Test Kudos System		Test Email Signature Generator		Test Badge Printing		Test new enhancements and features	Test new enhancements and features	Test new enhancements and features

Legend:

- Backlog
- In Progress
- Completed

Testing Plan



- Unit Testing - The goal is to ensure that each individual component of our product works as intended.
 - User Login Authentication
 - Badge Delivery System
 - Kudos System
 - Badge Printing
 - Email Signature Generator
 - Waterfall Feed and User Badge Library
- Integration Testing - The goal is to ensure that our components are communicating between one another properly.
 - Badges
 - Kudos
 - Waterfall feed
- Usability Testing - The goal is to ensure that our product is user friendly and easy to learn. (2 phases)
 - Phase one: team testing
 - Phase two: client testing (target audience)

When problems appear we will fix them and re-perform the test to ensure the problem is fixed.

Future Work



- Multiple Access Levels
 - Manager Level
 - Admin Level
- Team/Group Creation
- Badge Idea Submission Form
- User Profiles

Closing



- Client: State Farm Insurance - Enterprise Technology, Tempe, AZ
- Problem: Lack of a system to acknowledge and reward employees for their work to help boost morale and productivity
- Solution: A gamified web based social media application that can award badges and social currency to employees
 - Components - Secure login/User Authentication, Badge delivery system, Badge printing, Kudos social currency, and Email signature generator.
 - Technologies - ReactJs, NodeJS, and MongoDB
- Challenges: Real time content updates, State management, User Authentication/Middleware and general bug fixing
- Testing: Unit testing, Integration testing, Usability testing.