

OnBoard - Capstone Proposal

Noah Varghese

Commented [SS1]: Please leave all comments in the document for the next draft. Thanks.

Background

The background of my project stems from my previous jobs working at restaurants. There was a lot of overhead spent on training staff, making sure product knowledge and procedures were up to date. There were tests handed out, graded, reviewed and the opportunity to retake up to 3 times if minimum grade was not met. Disciplinary action was taken after the 3rd unsuccessful attempt. This took up a lot of management's time that could have been better spent elsewhere. This application aims to reduce overhead and management involvement, eliminate paper waste, and have the bonus of keeping track of employee information.

Paragraph Description

The project I am proposing is web application based around employee on-boarding. The problems it will be addressing is reducing meetings and eliminating paper waste. Employers/managers will be able to upload an "on-boarding package" or an employee handbook and create quizzes or assessments to ensure the employee has gone through and understands what is expected of them. Employees will be able to log in and refer to these documents at any point during their tenure. Managers will be able to upload new hire documents, and updated training programs, as well as view which employees have successfully completed these tasks. Potential additional scope could include resume and cover letter submission, as well as hiring through this site. Also instant messaging through the web app. Metrics that could be included in this are; employees who have completed the tasks and how long it took, as well as how many people made it to the interviewing and hiring stage if job search functionality is implemented.

Project Scope

Sample data:

- Employee handbook from previous job

Base functionality:

- project manager (tasks to be completed, lists, documents, projects)

Extended functionality:

- reporting (list specific reports) and charts (list specific charts)

- event manager (if not base functionality)

 - CRUD events including date, time, duration, location

Roles:

- Manager

- Employee

Functionality Chart

Feature	Employee	Manager
Home page	X	X
Login	X	X
Login – Register	X	X
Admin – Add employees		X
Admin – View all employees		X
Admin – Edit employees		X
Admin – Delete employees		X
Admin – Create handbook		X
Admin – View handbooks		X
Admin – Edit handbooks		X
Admin – View all quizzes		X
Admin – Edit quizzes		X
Admin – Delete quizzes		X
Admin – Create department		X
Admin – View department		X
Admin – Edit department		X
Admin – Delete department		X
Admin – Create roles		X
Admin – View roles		X
Admin – Edit roles		X
Admin – Delete roles		X
Admin – Add roles to department		X
Admin – Assign employee(s) to roles and departments		X
Admin – Assign handbooks and quizzes to roles and departments		X
Admin – View reports		X
Admin – View employees who completed quizzes		X
Admin – View employees with outstanding quizzes		X
Admin – View employees who have not read handbooks		X
Admin – View employees who have read handbooks		X
User – View quizzes	X	
User – Take quizzes	X	
User – View scores	X	
User – View handbooks	X	
Logout	X	X

Commented [SS2]: I think this has become a real elephant. Too much functionality. You have:

Handbook manager
Quiz manager
Message manager
Meeting manager
CRUD on employees/departments

This needs to be reduced.

Choose 2 of these:
Handbook manager
Quiz manager
Message manager
Meeting manager

Keep CRUD on employees/departments for manager

Remove mockups that are not required, and remove duplications. I think the mockups are also bloating the file size of this file, so reduce the size of the screen captures and/or remove the background graphic in the mockups to reduce the size.

Commented [SS3R2]: This has not been addressed - which features have you decided to remove? See above comment. Looks like you went with removing message manager and meeting manager. Please update the functionality chart.

Figure 1 – Public Page

Allows user logins or sign ups – no other information is displayed

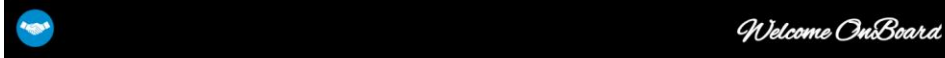


Commented [SS4]: Please add background, figure number and caption for each image and a description for each image.

Welcome OnBoard
LOGIN | SIGN UP

Figure 1.1 - Login Page

All accounts login and gain access through this page



Login

Don't have an account? [Sign Up](#)

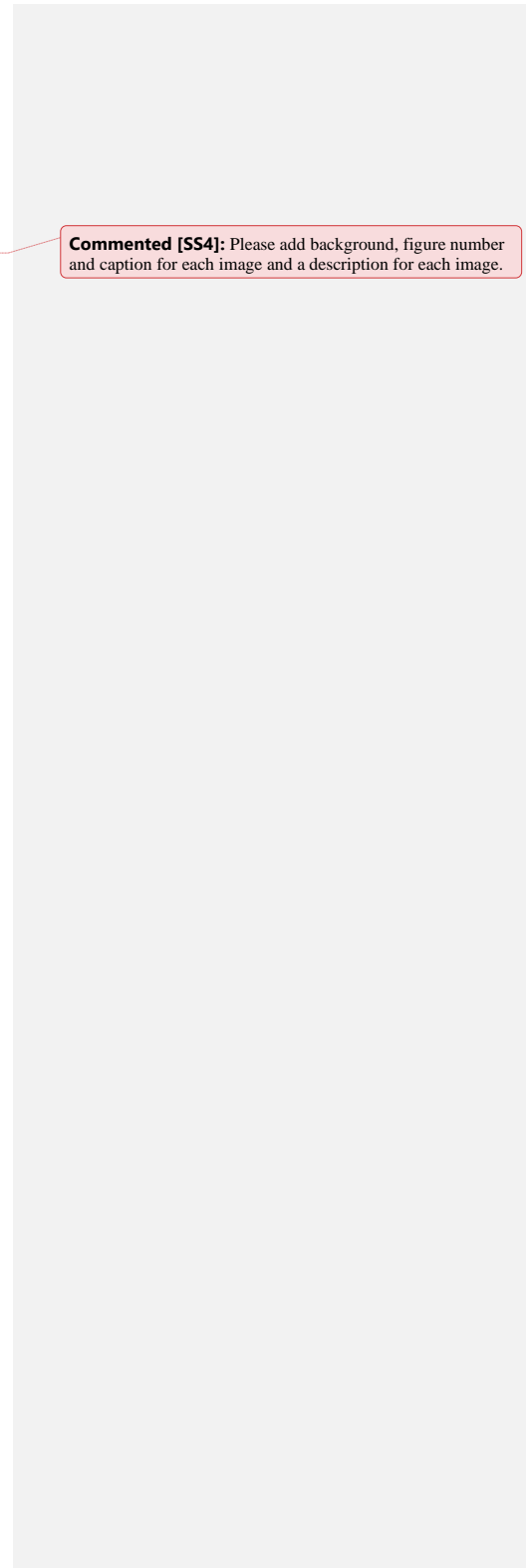


Figure 1.2.1 - Signup Page (new business)

Creates new business, person creating is the highest-level admin for the business. Takes Individual information, name, email, birthday, phone number, address, as well as business information – business information and address. Has link back to login page



Welcome OnBoard

First Name

Last Name

Email

Phone

Address

Postal Code

City

Province

☒ I am starting a new account

Birthday

Business Name

I am a: ☐ Employee

Address

☒ Manager

City

Postal Code

Password

Province

Confirm Password

Sign Up

Have an account? Log In

Figure 1.2.2 - Signup page (existing business)

Existing business employee sign up. Employees can sign up, employer would provide them with a code that is related to the business account, so that employees are associated with the business.

The screenshot shows a web page with a black header. On the left is a blue circular logo with a white handshake icon. On the right, the text "Welcome OnBoard" is written in a white, cursive font. Below the header is a light gray rounded rectangle containing a registration form. The form has two columns of input fields: "First Name", "Last Name", "Email", "Phone", "Address", "Postal Code", "City", "Province", "Birthday" (with a calendar icon), "Existing Business Code", "Password", and "Confirm Password". To the right of the "Birthday" field is a label "I am a:" followed by two radio buttons: "Employee" (checked) and "Manager". Below the input fields is a "Sign Up" button. At the bottom of the form, it says "Have an account? Log In".

Figure 1.3.1 - Forgot Password

If user has forgotten password, link on login page will redirect here and user can enter their email associated with the account for password reset instructions.

The screenshot shows the same web page header as Figure 1.3.1. Below the header is a light gray rounded rectangle containing a form for password reset. At the top of the form, it says "Enter your email and instructions will be sent to reset your password". Below this is an "Email" input field. At the bottom of the form is a "Send Email" button.

Figure 1.3.2 - Reset Password

Reset password link in email will direct user to this page. Allows creation of new password.



Please enter new password

Password

Confirm Password

Reset Password

Figure 2 – Admin Home Page

Gives summary of employees (total, trained – or those who have completed all handbooks and quizzes, and untrained - those who have incomplete handbooks and quizzes), total roles, total departments, quizzes (total number, number of quizzes that everyone has completed, number of quizzes that have not been completed), handbooks (total number, amount that have been read by all that were assigned to it, and number that have not been read by all)

Home

Employees

Roles

Departments

Handbooks

Quizzes

Reports

Logout

Employees

Total: 15

Trained: 15

Pending: 0

Managers: 4

Roles

Total: 8

Departments

Total: 3

Quizzes

Total: 25

Complete: 19

Pending: 6

Handbooks

Total: 25

Complete: 19

Pending: 6

Messages

Total: 15

Unread: 15

Meetings

Upcoming: 1

Past: 0

Welcome back Manager

Figure 2.1 - Admin Employees Section

Table listing employees (id, name, role, department). Able to create, search, sort, filter by role and department, edit and delete employees.

Home

Employee

Roles

Departments

Handbooks

Quizzes

Reports

Logout

Welcome OnBoard

Add New

Search

Filter by Department

Filter by Role

Sort

Employee Number	Name	Role	Department	
100001	Ada Lovelace	Cook	Kitchen	
100002	Grace Hopper	Server	Front of House	Edit Delete
100003	Margaret Hamilton	Barista	Front of House / Bar	Edit Delete
100004	Joan Clarke	Manager	Management	Edit Delete

Name (ASC)

Name (DESC)

Role(ASC)

Role(DESC)

Department(ASC)

Department(DESC)

Employee Number (ASC)

Employee Number(DESC)

Figure 2.1.2 - Admin employee create/update form

Form presented when create or update is selected from figure 2.1. Allows entry of name, email, phone, address, promote employee to manager, reset password, assign employee to multiple roles or departments.

Home

Employees

Roles

Departments

Handbooks

Quizzes

Reports

Logout

Welcome OnBoard

First Name

Last Name

Email

Phone

Address

Postal Code

City

Province

Birthday

☒ Manager

Temp Password

Confirm Temp Password

Roles

Departments

Create

Figure 2.2 - Admin Roles Section

Table listing roles (id, role name, and department role is associated with). Able to create, edit, delete, search, sort and filter by department or manager.

Home

Employees

Roles

Departments

Handbooks

Quizzes

Reports

Logout

Add New

Search...

Filter by Department

Filter by Manager

Sort

Role ID	Roles	Department	Actions
200001	Barista	Bar	Edit Delete
200002	Line Cook	Kitchen	Edit Delete
200003	Server	Front of House	Edit Delete
200004	Supervisor	Supervisors	Edit Delete

Name (ASC)

Name (DESC)

Role(ASC)

Role(DESC)

Department(ASC)

Department(DESC)

Role ID(ASC)

RoleID(DESC)

Manager (ASC)

Manager (DESC)

Figure 2.2.1 - Admin Role create/update form

Form appears when user click create/edit in figure 2.2. Fields included are text input for role name, dropdown to choose department to assign role to, dropdown to add employees to role.

Home

Employees

Roles

Departments

Handbooks

Quizzes

Reports

Logout

Role

Department:

Employees:

Cancel

Create


Role

Departments

Employees

Figure 2.3 - Admin Department Section

Table listing departments (id, department name, manager). Able to create, edit, and delete departments. Can search, sort and filter by manager.



Welcome OnBoard

Home

Employees

Roles

Departments

Handbooks

Quizzes

Reports

Logout

Add New

searching.....

Filter by Department

Filter by Role

Sort

Department ID	Department	Manager	
300001	Front of House	Ada Lovelace	Edit Delete
300002	Bar	Grace Hopper	Edit Delete
300003	Kitchen	Margaret Hamilton	Edit Delete
300004	Supervisors	Joan Clarke	Edit Delete

Figure 2.3.1 - Admin Department Create/Update form

Form appears when user click create/edit in figure 2.3. Fields included are text input for department name, dropdown to choose roles to associate with department, dropdown to add manager to role.



Figure 2.4 - Admin Handbook Section
Display list of handbooks, default sorted alphabetically, can sort by departments or roles. Filter by roles and departments, search functionality as well. Create, edit and delete options available for each handbook.

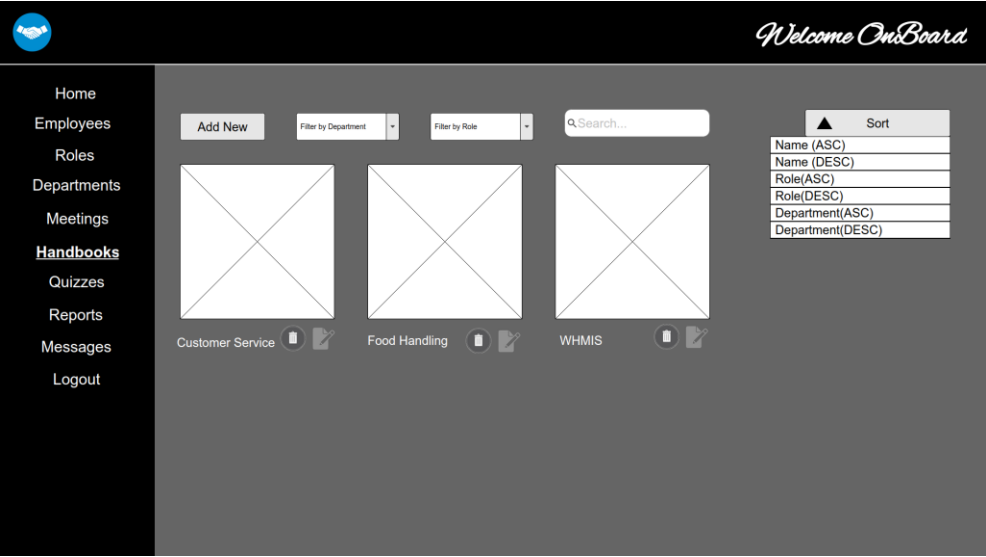


Figure 2.4.1 - Admin Handbook Create/Update

Form to create or update handbooks. Display to the left allows users to delete or skip to editing sections as they are created. Dropdowns to assign to multiple roles and departments. Textbox for handbook name. Textbox for section name, will change as user clicks next section or previous section buttons. Textbox to type content for each section, accepts plain text. Buttons to add, delete and update current section, as well as buttons to navigate to different selections, previous section button will disappear if user is on first section. Next section button will disappear if user is on last section.

Home
Employees
Roles
Departments
Handbooks
Quizzes
Reports
Logout

Sections:

Raw Meat

Roles: Barista Departments: Front of House

Handbook: Food Handling

Section: Raw Meat

Content:

- Wear gloves
- Wash hands
- Don't pick nose
- Use clean knives

Previous Section Add Section Next Section

Delete Section Update

Figure 2.5 - Admin Quiz Section

Display list of quizzes, default sorted alphabetically, can sort by departments, roles, or handbooks they are associated with. Filter by roles, departments, and handbooks, there is search functionality as well. Create, edit and delete options available for each quiz.

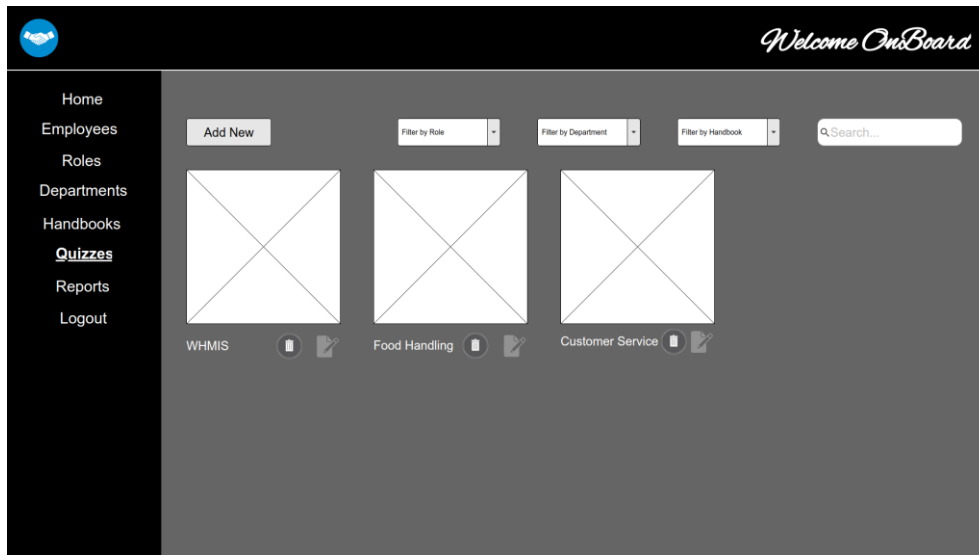


Figure 2.5.1 - Admin Quiz Create/Update

Form to create or update quizzes. Display to the left allows users to delete or skip to editing sections as they are created. Dropdowns to assign to handbooks. Textbox for quiz name. Textbox for section name, will change as user clicks next section or previous section buttons. Textbox to type quiz question. Dropdown to select number of possible answers (2-5, 2 accounts for true or false). Radio buttons allow for selection of correct answer, next to radio buttons are text inputs for the possible answers. Buttons to add, delete and update current section, as well as buttons to navigate to different selections, previous section button will disappear if user is on first section. Next section button will disappear if user is on last section. Icon next to question number deletes question on click. Icon next to quiz section deletes that section and all questions within on click.

Figure 2.5.1 - Admin Reports

Different charts to give reports on employee statuses. Chart to display average number of quiz attempts per department. Average number of quiz attempts per role. Number of employees per department, number of employees per role, and number of managers per department. Also includes number of employees who have not read assigned handbooks, and number who have not attempted assigned quizzes.

Commented [SS5]: Set the number of choices to vary between 3 and 5 which is pretty standard for multiple choice. When you code it's one class where 2 is true/false and 3-5 is multiple choice.

Need to be able to edit/delete questions so will need a grid or some other navigation for quiz questions within a quiz.

Commented [SS6]: Good charts

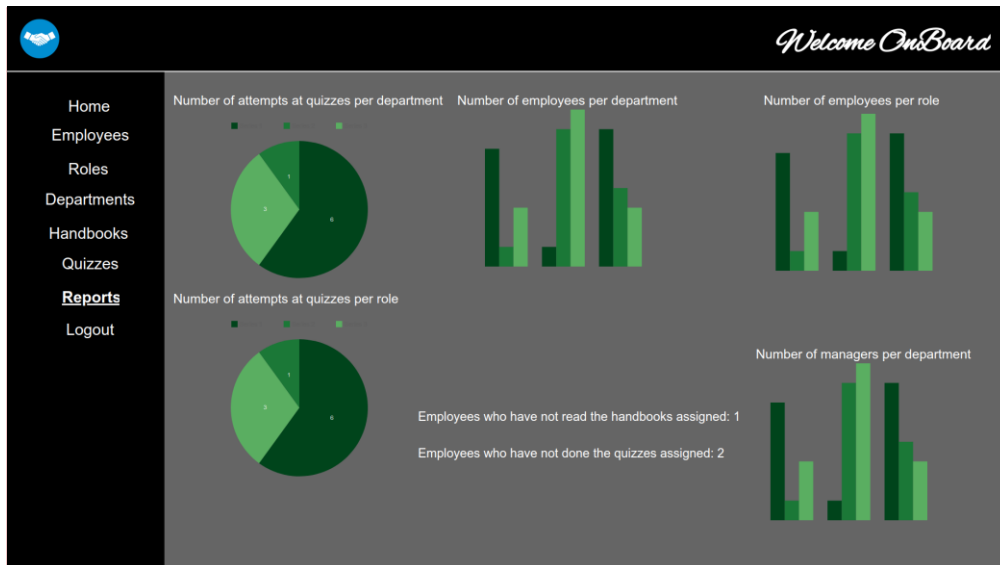


Figure 3.1 - Employee Handbooks Section

View list of available handbooks, next to handbook name a label with read/unread will indicate if the employee has viewed it already.

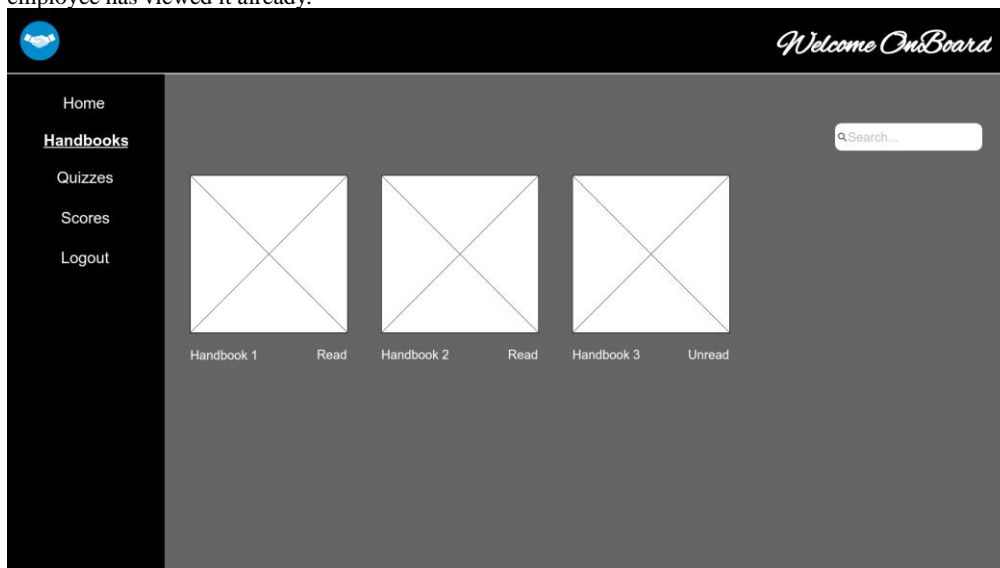


Figure 3.1.1 - Employee View Handbook

View contents of handbook. Left div contains handbook name and section names. Right div contains handbook name, current section name, and section content. Buttons allow employee to go back a section, forward a section, or back to the list of handbooks.

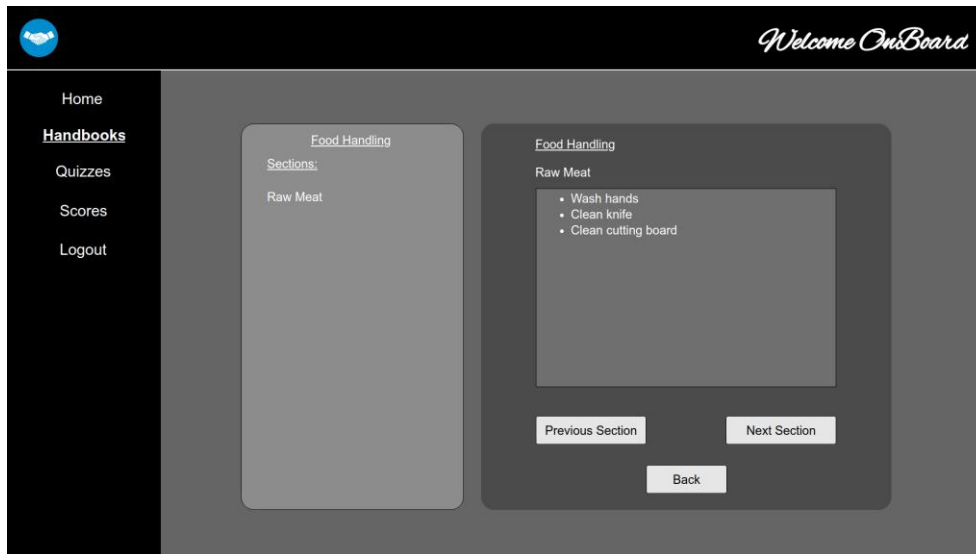


Figure 4.1 - Employee Quiz Section

View list of available quizzes, search functionality on this page only.

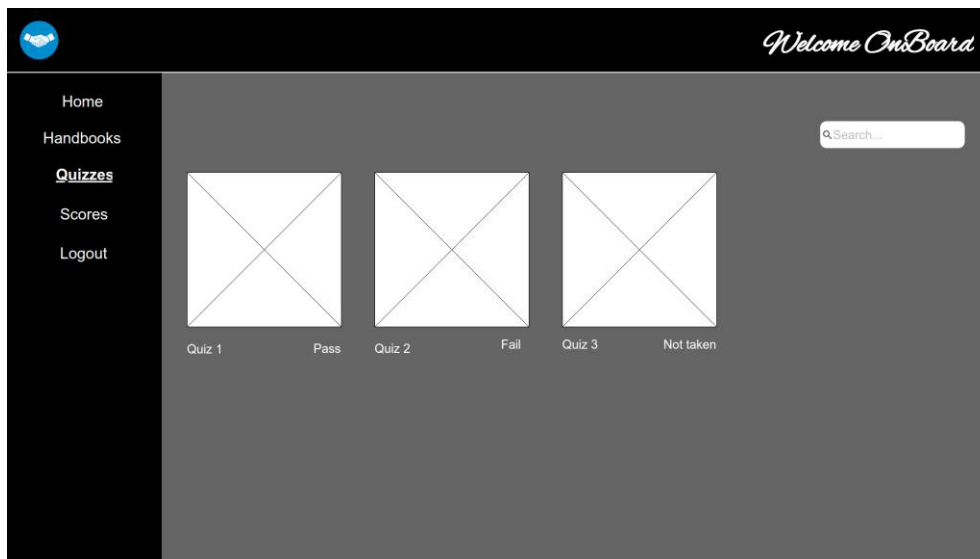


Figure 4.1.1 - Employee Take Quiz

Employee upon clicking a quiz will view this page. Left div shows quiz title, and sections within the quiz. Right div displays question number, quiz question and possible answers with radio buttons to select. Buttons allow employee to go back a question, forward a question, exit the quiz without

submission (sends them back to view all quizzes), or submit the quiz, which will direct them to the score section.

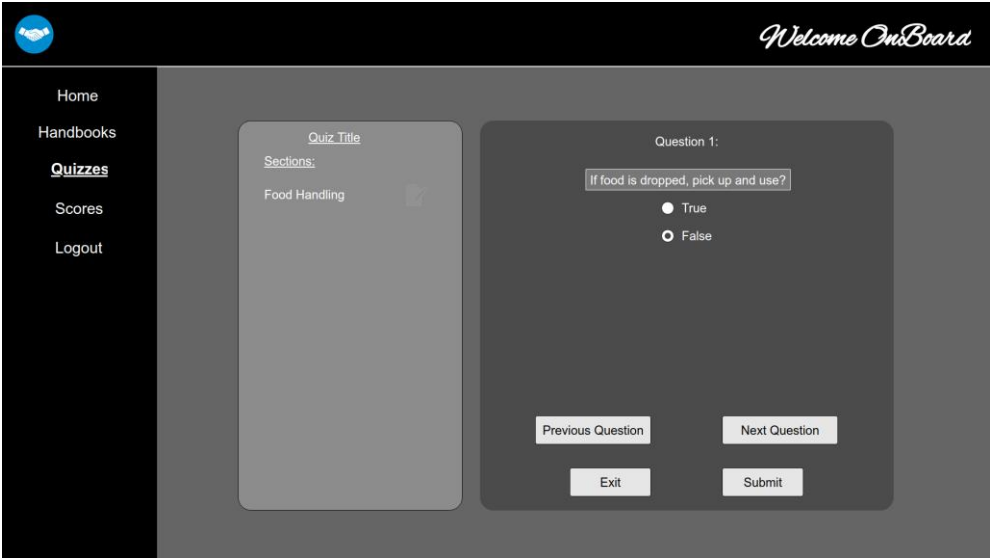


Figure 5.1 - Employee quiz scores
Displays quizzes, with score next to title. Allows users to search for specific quizzes. Quizzes may be taken a maximum of three times, with the most recent score being displayed.

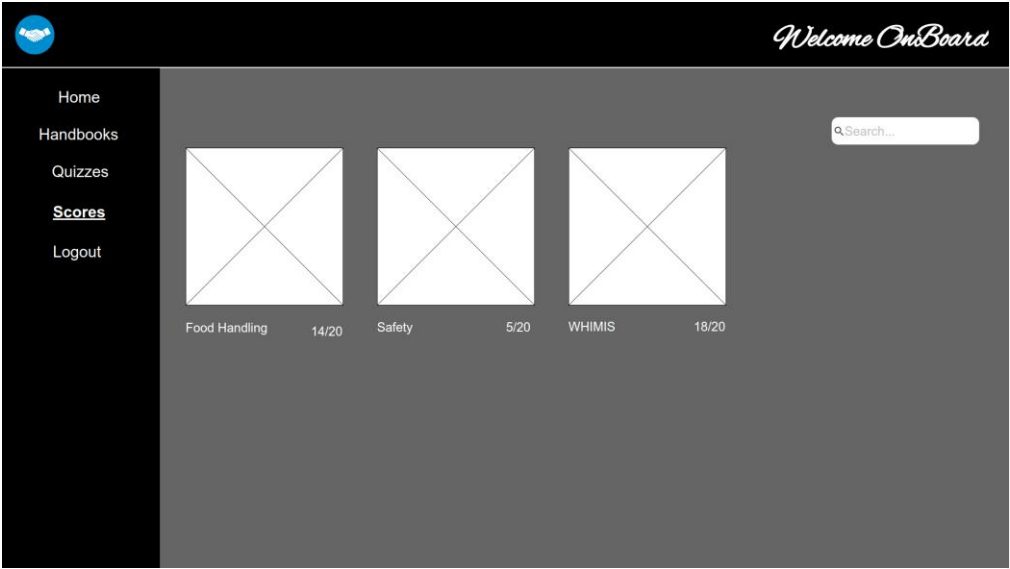
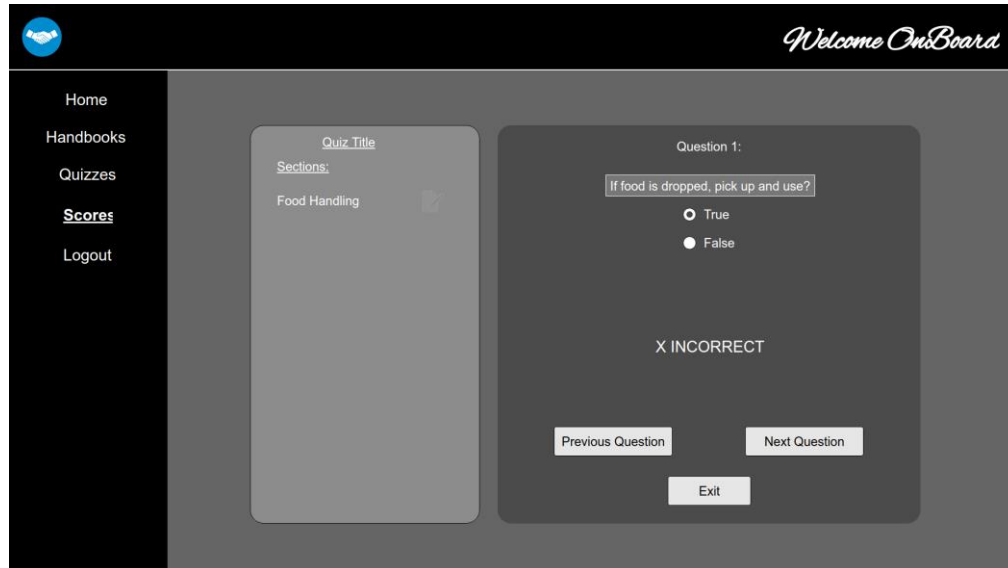
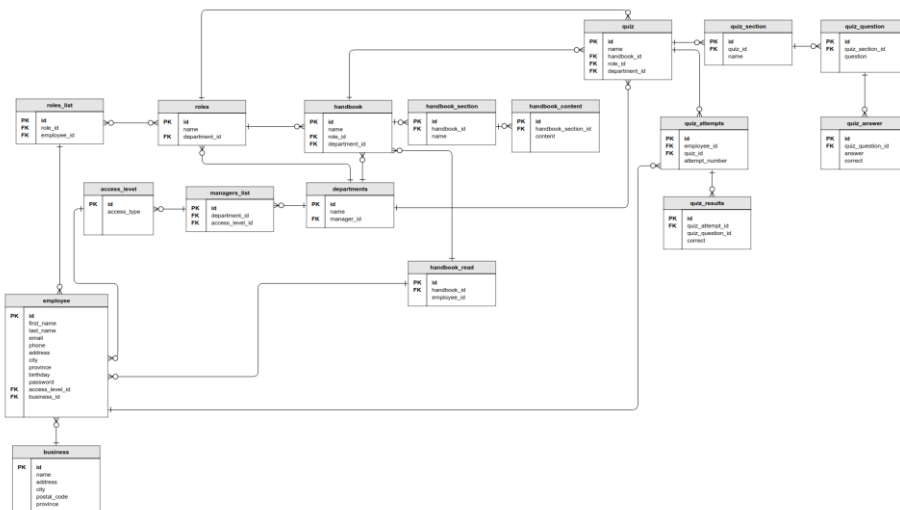


Figure 5.1.1 - Employee quiz score breakdown

Employee can go through the questions in the quiz and it will display correct or incorrect, but not the correct answer.



Database Schema



Possible Extension

- Meeting scheduler
- Messaging amongst employees/manager
- Time off scheduler

Testing Plan

Test to Pass

The tests will be done using selenium. Backend test will be done using phpUnit.

- Test all pages and links that are displayed are working correctly
- Test logging in as admin and user, ensure public does not have access to any pages other than welcome/login/sign up
- Test creating a new business – register new business
- Test signing up as a manger using results from test 3
- Test signing up as new employee
- Test creating Employee from admin page
- Test forgot password link, check reset password functionality
- Test database functionality, create roles, departments, handbook and quiz, assign to user created in tests 5/6
- Test CRUD functionality on all tables (roles, departments, quizzes, handbooks)
- Test quiz results, ensure maximum 3 attempts per quiz per employee
- Test access levels, only managers assigned to roles/departments should be able to view those specific objects
- Test reports functionality, automate actions, view make sure reports are correct

Test to Fail

- Test logging in as fake user – Should display error
- Test forgot password with wrong email – Should not send mail
- Test register employee with nonexistent business – should display error
- Test forms with incorrect input (ie number instead of string, string instead of numbers, invalid DOB) - Should display error

In addition to these tests I will be testing multiple browsers (firefox, chromium, edge) to ensure the sight appears as it should.

Resources

- I will be using my friend Sharan Karanth as my advisor, he has been my mentor throughout this program, and is a previous CTO and skilled in many areas of development, if I get stuck, I will seek guidance from him
- I will be using AWS to host my final application

- I will be using my personal server to host my testing environment where all the development will occur
- I will be using Laravel, JavaScript, CSS3, HTML, PostgreSQL, and canvasJS to develop my application
- I will use JSON Web Tokens for authorizations

Challenges

The challenges of this project will be the database complexity in terms of how each object is related to each other, along with the access levels of the managers, also the SQL involved in generating data for the reports may be challenging as well. Generating the reports will be a challenge as I have not generated graphs before. These are obstacles that I will have to overcome to build this project, and I do have guidance that will be available to me should I hit a wall.

Week 1 Sept 8 th - 12 th	Set up development environment, install tools, setup databases
Week 2 Sept 13 th - 19 th	Develop user interface, and login system
Week 3 Sept 20 th - 26 th	Develop and test login system and forgot password.
Week 4 Sept 27 th - Oct 3 rd	Develop views for login/signup/forgot password. Test integration and move system to production
Week 5 Oct 4 th - 10 th	Work on website views get nav bar, links, and display set up
Week 6 Oct 11 th - 17 th	Work on backend CRUD, search, and filter for roles, departments and employees
Week 7 Oct 18 th - 24 th	Work on backend CRUD, search, filter, and results for quizzes, handbooks
Week 8 Oct 25 th - 31 st	Test backend operations of all objects
Week 9 Nov 1 st - 7 th	Integrate front and backend
Week 10 Nov 8 th - 14 th	Test access levels and security
Week 11 Nov 15 th - 21 st	Move system to production, test everything works the same
Week 12 Nov 22 nd - 28 th	Final project testing, test use in browsers
Week 13 Nov 29 th - Dec 4 th	Come up with presentation of final project