To: Professor Krasso
From: Lea Trueworthy
Date: 18 September 2019
Subject: Node Quiz

Introduction

NodeQuiz was created to help inform a user/audience about the selected topic of their choosing. The User will first be directed to the login page asking for their employee id number. Once they are are login in, the programmed system allows the user to select one of three slideshows to be displayed followed by a short 10 question quiz. Once the quiz is finished a summary page with the quiz results will show including a cumulative summary page. This will be accomplished but using a NoSQL database.

Purpose

NodeQuiz was built to give specific, helpful information to a user/audience so that the reader learns something new or understands a topic better.

Terminology

Abbreviation	Description
MEAN.JS	A full-stack JavaScript web application using MongoDB, Express, AngularJS, and Node.js.
Database	Systematic collection of data
SQL	Structured Query language is the standard language for dealing with Relational Databases.
ORD	Object Relational Diagram(s) - A database management system composed of a relational database (RDBMS) and an object-oriented database (OODBMS).
Prototype	A simulation or sample version of a final product
Wireframe	A layout of a web page that demonstrates what interface elements will exist on key pages.
Angular	a TypeScript-based open-source front-end web application platform led by the Angular Team at Google and other communities

Express	is a web application framework for Node.js, released as free and open-source software under the MIT License. It is designed for building web applications and APIs
MongoDB	is a free and open-source cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents
Node.js	is a JavaScript runtime built on Chrome's V8 JavaScript engine. Node.js uses an event-driven, non-blocking I/O model; npm
Typescript	is an open-source programming language designed for development of large applications and is a subset of JavaScript

User Personas

Lillian Newton - Student

Behaviours

- Begins everyday at 7am
- Constantly worries about money
- She is stable and reliable, but can also be very lazy and a bit impatient.

Facts & Demographics

- College Student
- 19 years old
- Lives on campus in Reno, Nevada

Needs & Goals

- Wants to graduate college with a degree in a booming industry
- Lillian wants the option to work while she travels
- Impatient so she wants learning terminals that are straight to the point

Harold Whitmore - Retired Engineer

Behaviours

- Harold's family visit every weekend
- Starts his day with a bowl of oatmeal and a walk with Comet
- Family comes first

Facts & Demographics

- Age 72
- Wife of 50 years recently past
- 2 grown children, 3 grandkids
- Lives in California on a small farm with 1 horse named Comet

Needs & Goals

- Looking for a new hobby after his wife died
- Harold wants to make his own schedule

Isabella Marsh - Office Manager

Behaviours

- Loves to travel
- Likes to keep up with World Events
- Begins the day with a cup of tea
- Prone to feeling inadequate

Facts & Demographics

- Age 46
- No kids, Married for 15 years
- Full Time Health Center Office manager

Needs & Goals

- Returning back to school to learn a new trait
- Changing careers
- wants something that can be accessible anywhere

User Stories

As a < type of user >, I want < some goal > so that < some reason >.

Lillian's Story
As a student, I want to test my knowledge so that I can validate my skills
As a user, I need to be able to access NodeQuiz using my employee ID number, so that I can test and record my overall scores.
As a user, I want to be able to login multiple times, so that I can see my scores for each quiz
As a student, I want to learn something new so that I can advance my knowledge without going to class
As a future developer, I want to view over developers applications so that I can learn from them and better myself

Isabella's Story
As a student, I want to test my knowledge so that I can validate my skills
As a student, I want to understand databases so that I can begin building my own
As a middle age women, I want to advance my knowledge so that I can change career paths
As a user, I want to learn about the web so that I can create something just as beautiful
As a user, I need material to cover navigation and quizzes, so that I have thorough understanding of what types of questions will be presented.

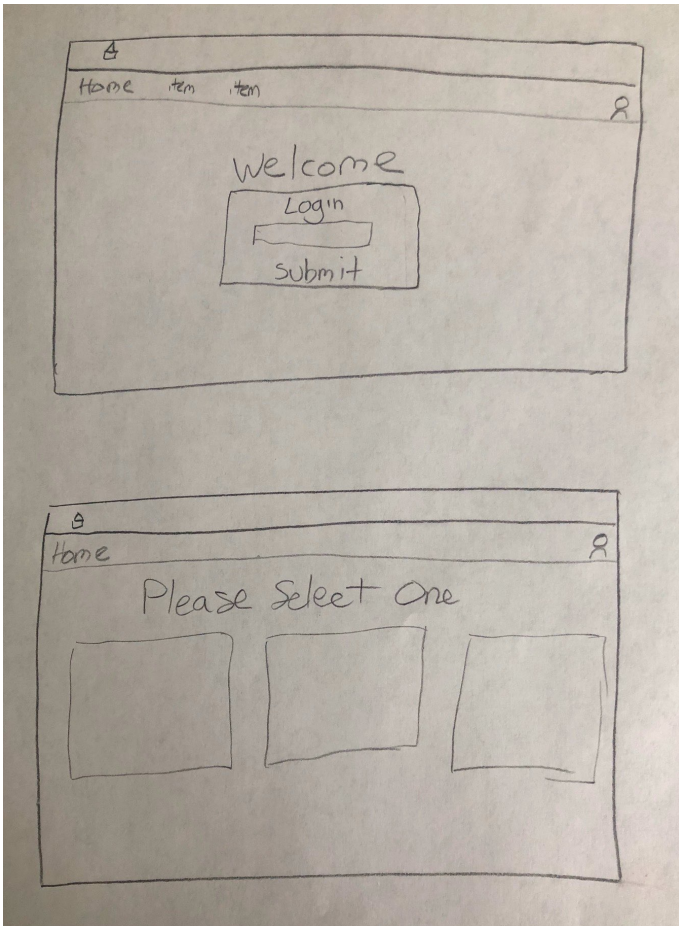
Harold's Story
As a widower, I want to learn a new hobby so that I can fill my time with something different and exciting
As a grandfather, I want to pause my work so that I can return on my own time or when it suits me
As a user, I want to understand the *web* better so that I can begin a new path of education
As a hobbyist, I want to enjoy the slideshow so that I can continue my enjoyment of the web
As a grandfather, I want to use what i've learned so that I can share and connect more with my grandkids

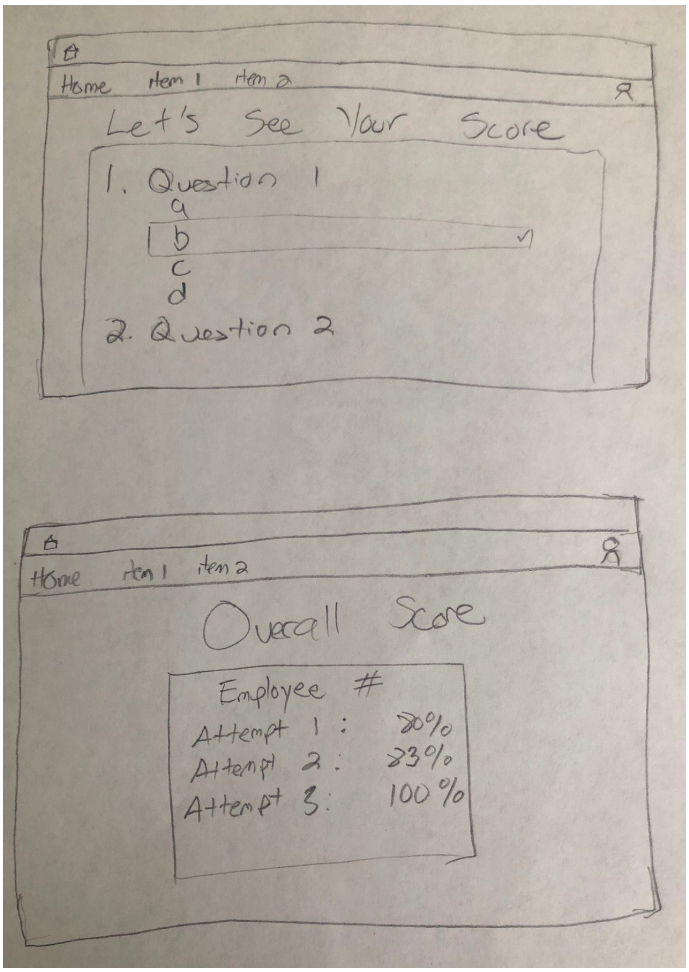
Time Estimations

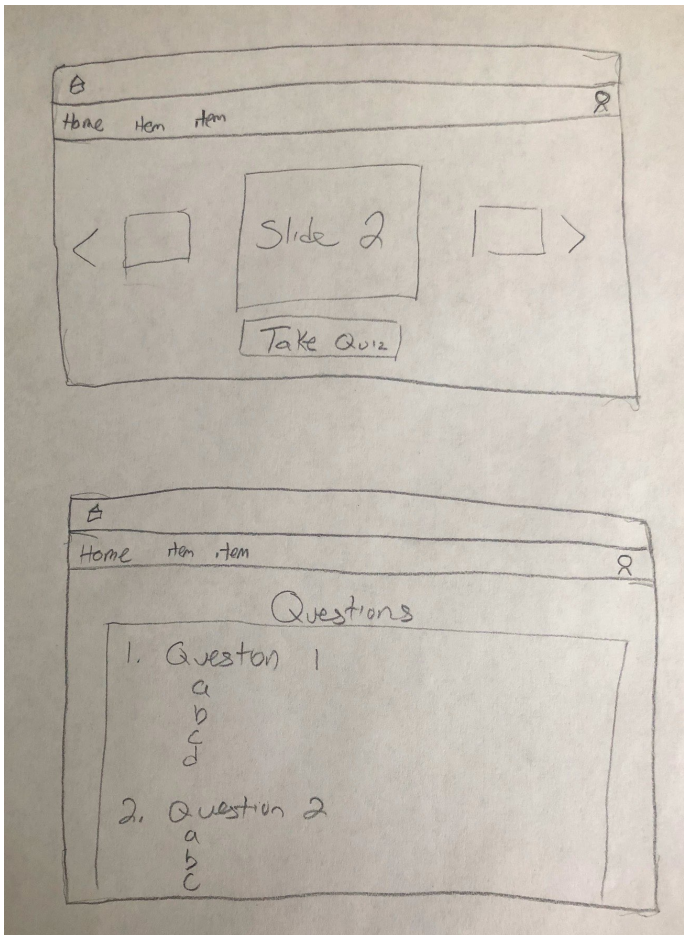
Tasks	Required Time
Construct prototypes including placing them in the technical design document	2 hours
Build code for Home Page	2 hours
Set up proper main root directory	30 minutes
Break and repair code	4 hours
Write 30 questions	1 hour
Tinker with slideshow so they are appropriate for new website	1.5 hours
Validate Employee Ids	5 Hours
Total Hours:	16 hours

Process Design

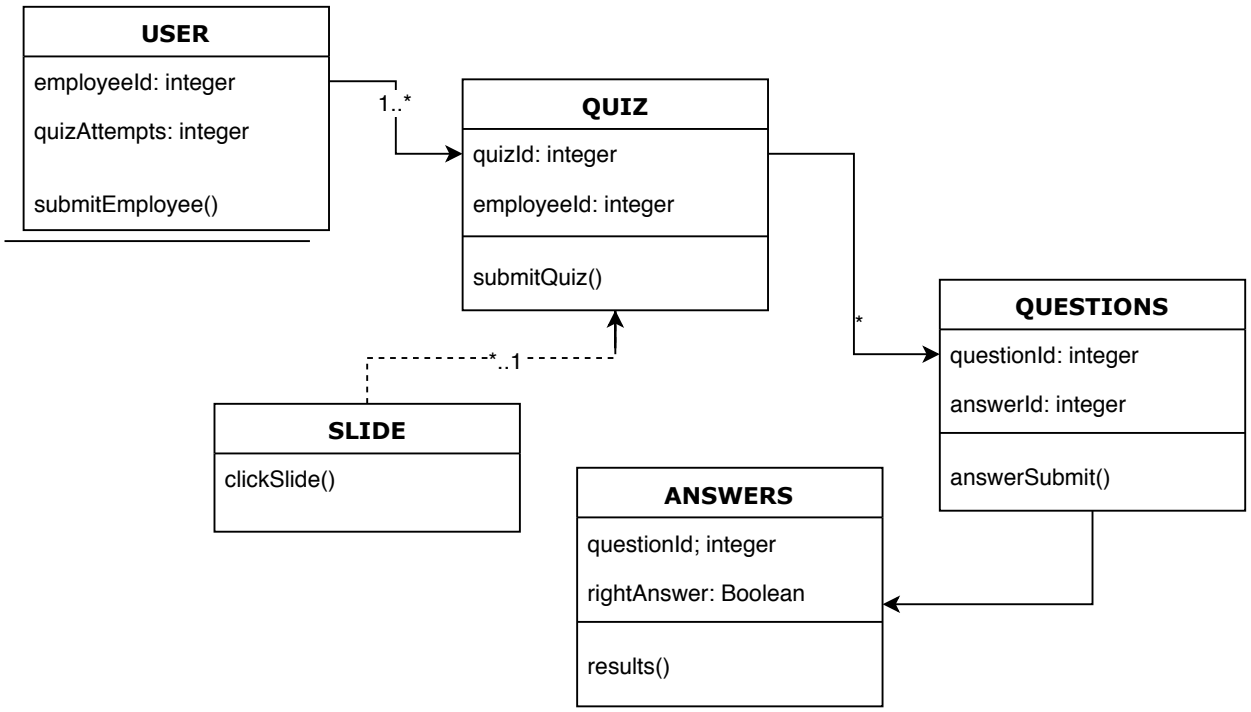
Prototypes



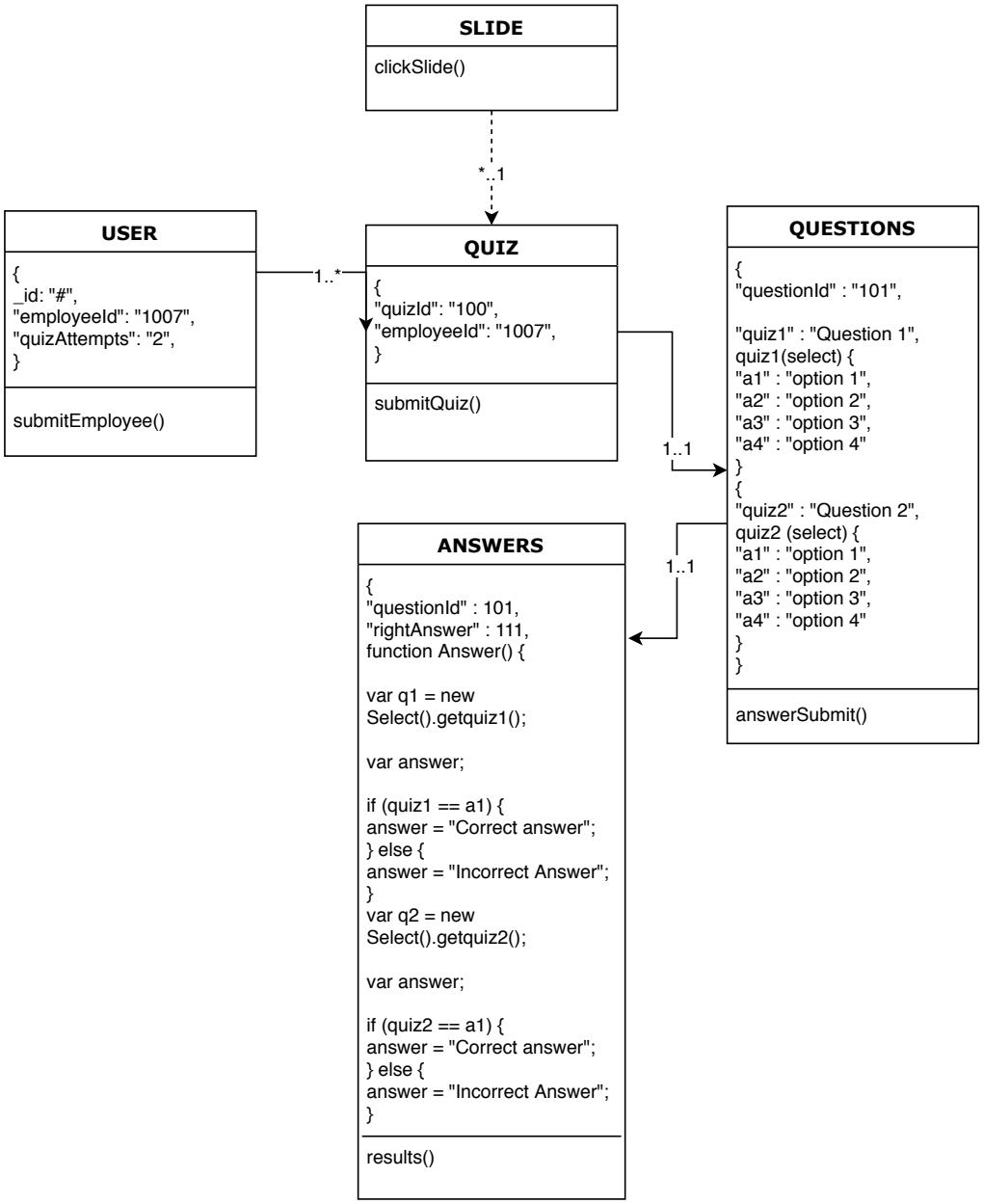




ORD


USER
employeeId: integer
quizAttempts: integer
submitEmployee()
1..*
QUIZ
quizId: integer
employeeId: integer
submitQuiz()
*..1
SLIDE
clickSlide()
*
QUESTIONS
questionId: integer
answerId: integer
answerSubmit()
ANSWERS
questionId; integer
rightAnswer: Boolean
results()

NoSQL Document Diagram



NoSQL data structure

```
{
    "employeeID": 1007,
    "quizAttempts": 2
    "quizId": 100 [

        {"questionId": 101 [

            {"quiz1": "What does CSS stand for and what is it used for?"}, {
                quiz1(select1) {

                    "a1": "Pickles",

                    "a2': "Cascading Style Sheets",

                    "a3": "Cats Sleeping Soundly",

                    "a4": "Cartoon Style Sheets",

                }
            }
        ]}
    ]

{"answerSubmit": 102 [

    function answer() {
        var a1 = new Selection(a1).geta1();

        var answer;

        if (quiz == a1) {
            answer = "Correct Answer";
        }
    }
]}
}
```

QA Testing

QA Test Plan

Unit Tests