Automated Fitness Instructor Certification Website

sddec19-04
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Advisor: Mohamed Selim
https://sddec19-04.sd.ece.iastate.edu/

Project Background

- Original client: Farrell's Extreme Bodyshaping
- Project was started by a previous intern
- Given a UI template with fake data
- Halfway through semester, client cancels the project
- Will refer to client as AFIC from now on

Presenter: Max Talley

Project Plan

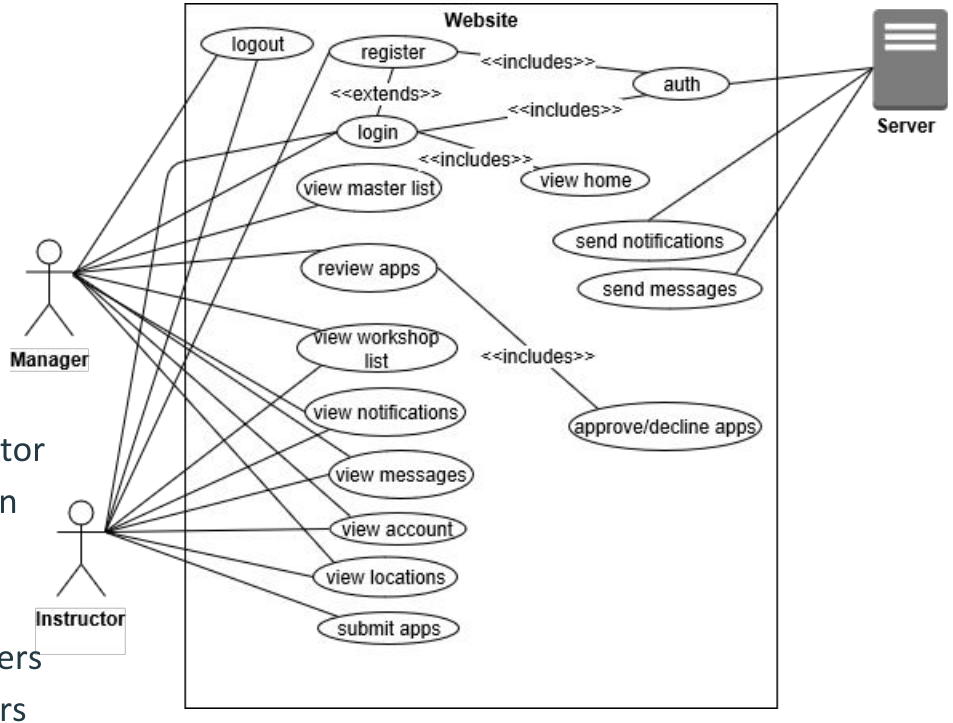
Problem Statement

- Problem
  - Instructor records are maintained by hand
  - Certifications are updated manually
  - Time consuming process
- Proposed Solution
  - Bring certification process online
  - Records will be updated automatically
  - Vastly decrease record maintenance time

Presenter: Max Talley

Use Cases

- 3 actors
  - Instructor
    - Apply for Certification
    - Attend Workshops
    - View Location Information
  - Manager
    - Register new Trainer/Instructor
    - Approve/Decline Certification Applications
  - Server
    - Sends messages between users
    - Sends notifications to all users



Presenter: Ryan Menster

Functional Requirements

- A well constructed database schema
  - Database must be efficient and intuitive
- Displaying lists
  - Instructor, workshop, and location lists
- Authentication of an employee or instructor
  - Checks must be made for verification of employee or instructor
- Use of individual trainers data
  - Used for automating instructor certification

Non-Functional Requirements

- System should only be accessible by instructors and managers
- Database should be completely secure and accessible only by management
- Both the web server and database should be set up in a maintainable way

Constraints & Considerations

- Constraints
  - Extensive database information is unknown
  - Maintaining IEEE and ABET standards
  - Time
- Considerations
  - Continue with initial website or rebuild
    - Rebuild as angular is deprecated
  - Creating a system that can be maintained by a different team of developers
  - AWS or Azure
  - Instructor or manager privileges

Presenter: David Bane

What makes our project unique?

- Client has a proprietary certification
- No product on the market is built around this
- We needed to build something that can support their certification and management process

Presenter: Max Talley

Potential Risks & Mitigation

- We no longer have a client
  - Client left the project due to unforeseen circumstances
  - We decided to continue with the initial project
    - We have enough information from the client to continue and finish the project
- Group member schedules do not line up
  - Very few opportunities to meet
  - We make sure to reserve the times when we are all available
  - We have utilized online meetings, email, and group messaging apps (GroupMe)
- Limited group knowledge on languages used
  - React, Express, Microsoft Azure
  - We took time to self study these languages

Presenter: Ryan Menster

Resource Cost Estimate

- Azure is our only expense
  - Server will cost us about $25/month
  - Database will be about $30/month

- Total Cost per Month: $55/month
- Total Cost per Semester: $220

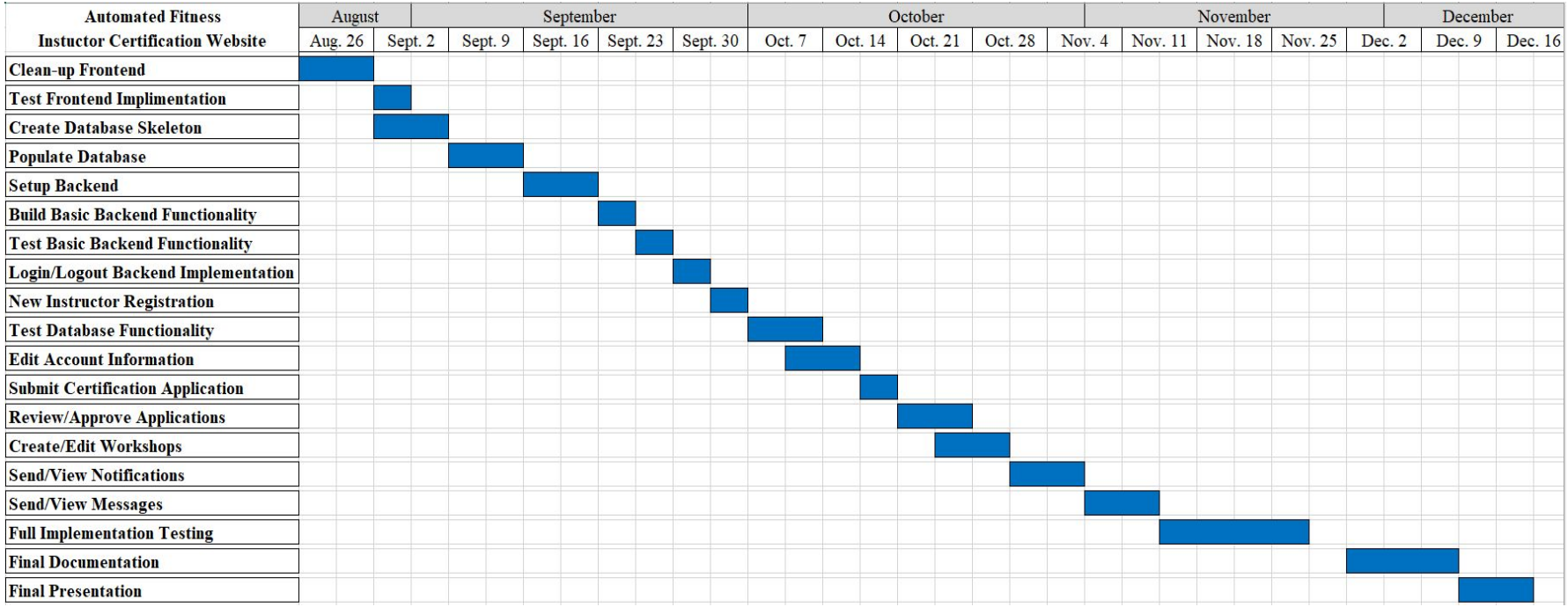
Presenter: Max Talley

Project Milestones

- Chose to use Agile
  - Allows for continuous integration and client communication
  - Iterative process works well for our senior design project
- Primary Milestones
  - Frontend Implementation
    - Web pages, User Interface, etc.
  - Backend Implementation
    - Routing, Certification Verification, Message Handling, etc.
  - Database Implementation
    - Account Creation, Data Retrieval/Additions, etc.

Presenter: Ryan Menster

Project Gantt Chart



Presenter: Ryan Menster

System Design

Functional Decomposition

- MVC Styled Architecture
  - Model: Sequelize Database
    - Manages all of our data to be viewed
  - View: React components
    - Present the data
    - Front-end
  - Controller: Express
    - Processes the user input accordingly
    - Back-end

Detailed Design

- What is:
  - A framework?
    - The big draw for using a framework is its componentization
      - Reusable code, easily pass data, logic easily handled
    - React & Material UI
  - A backend?
    - Handles the logic of managing data between the frontend and database
    - Express
  - A database?
    - Store complex data with connections to each other
    - Data accessible through queries
    - Sequelize, a Node.js ORM
  - A cloud service?
    - Stores our data and runs the server
    - Microsoft Azure

Presenter: David Bane

Technology Used

- React Frontend
  - Material.io
- Express Backend
- Sequelize Database
- Microsoft Azure Cloud Service

Presenter: Max Talley

Test Plan

- Functional testing
  - Unit, integration, and acceptance
- Integrity testing/code coverage
  - Can use a tool like Coveralls or Codecov
- Non-functional testing
  - Testing for performance, security, usability, and compatibility

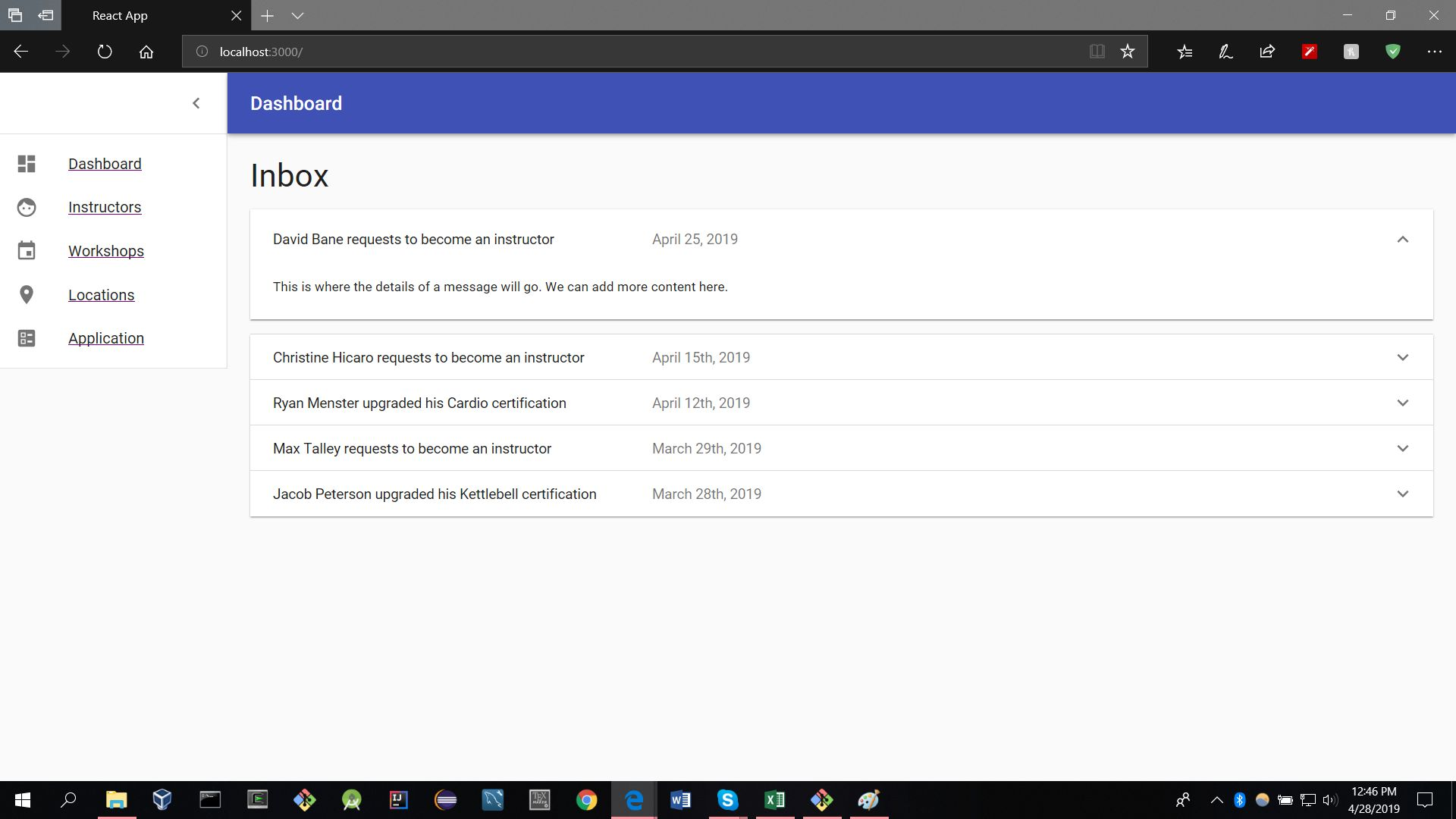
Presenter: Christine Hicaro

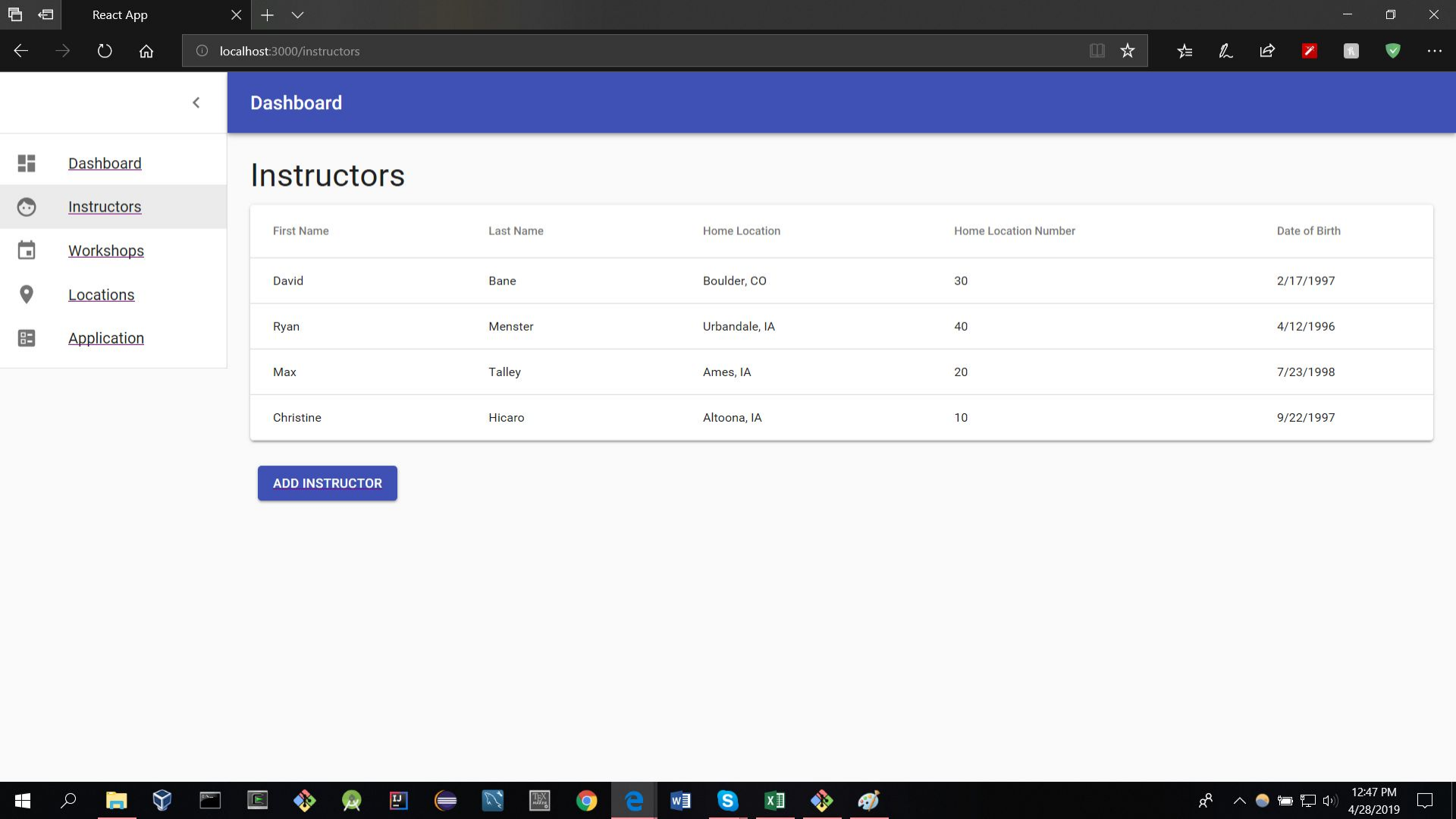
Current Project Status

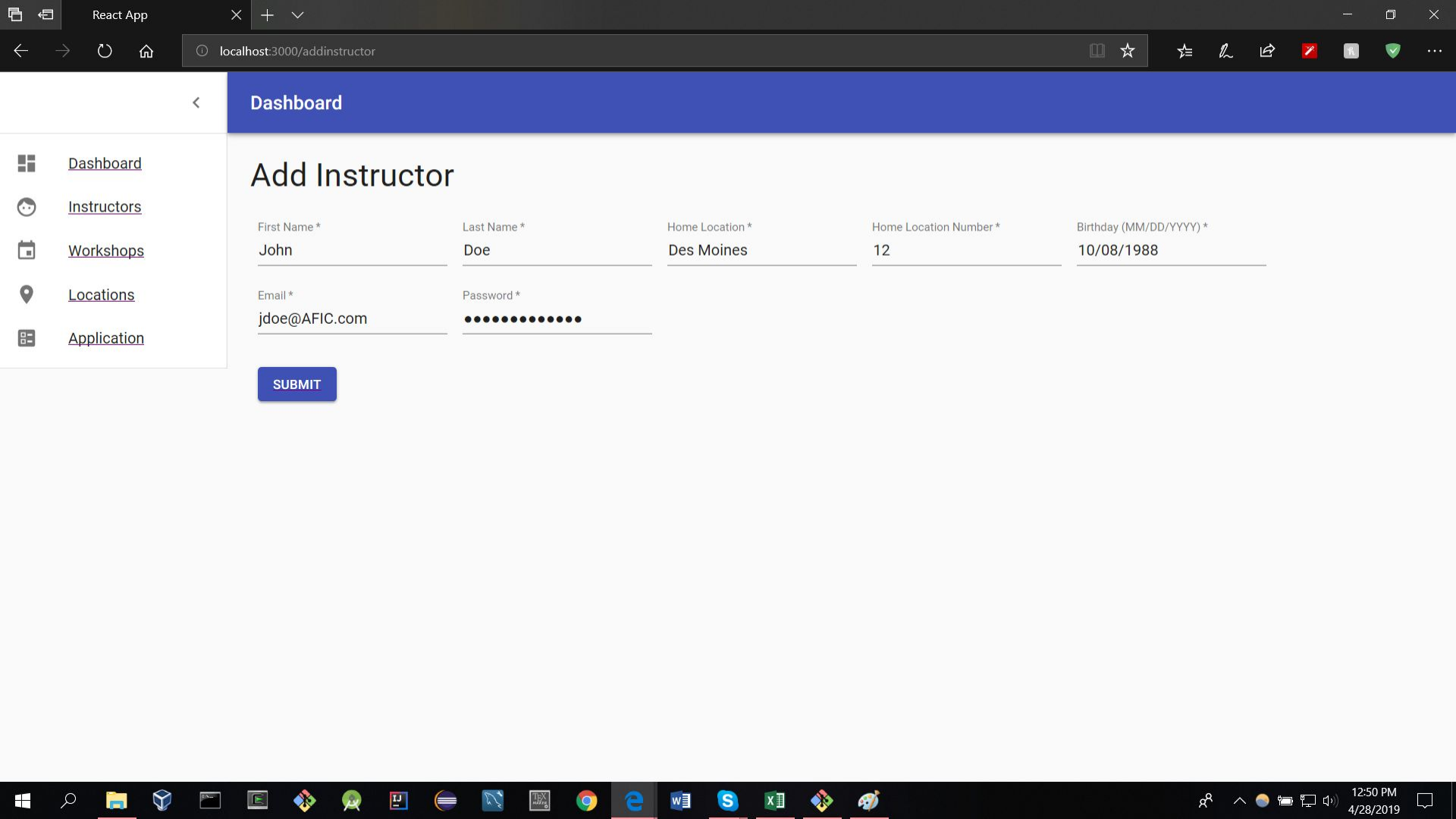
- Frontend currently under development
  - 6 primary web pages have been created
  - Next pages to complete: Login/Logout and Account Page
- Backend/Database implementation begins next semester
- First major milestone, finishing the User Interface, is about 50% complete
  - Many smaller milestones have been completed
- Project is in early stages, but we are right on schedule

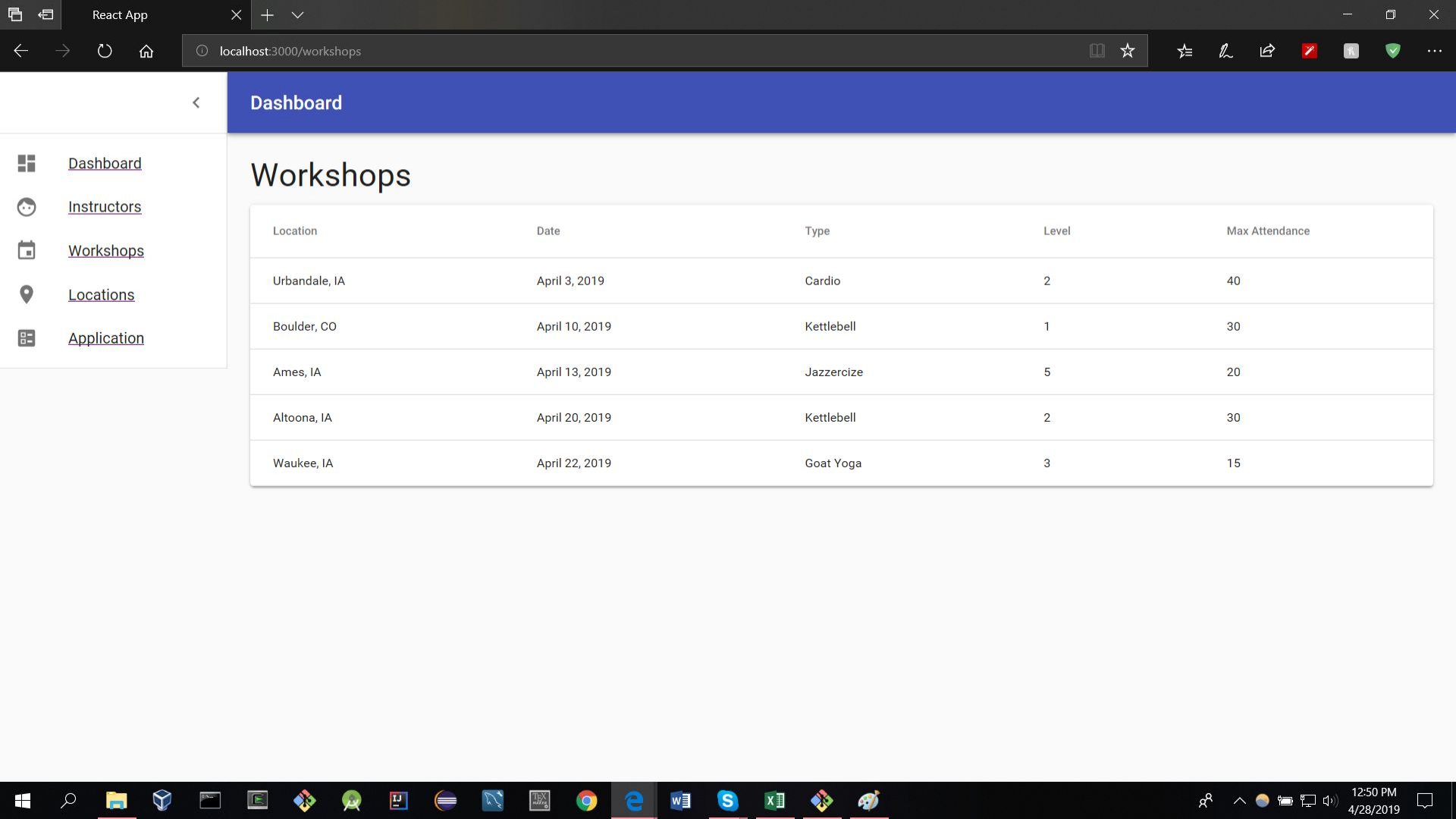
Presenter: Ryan Menster

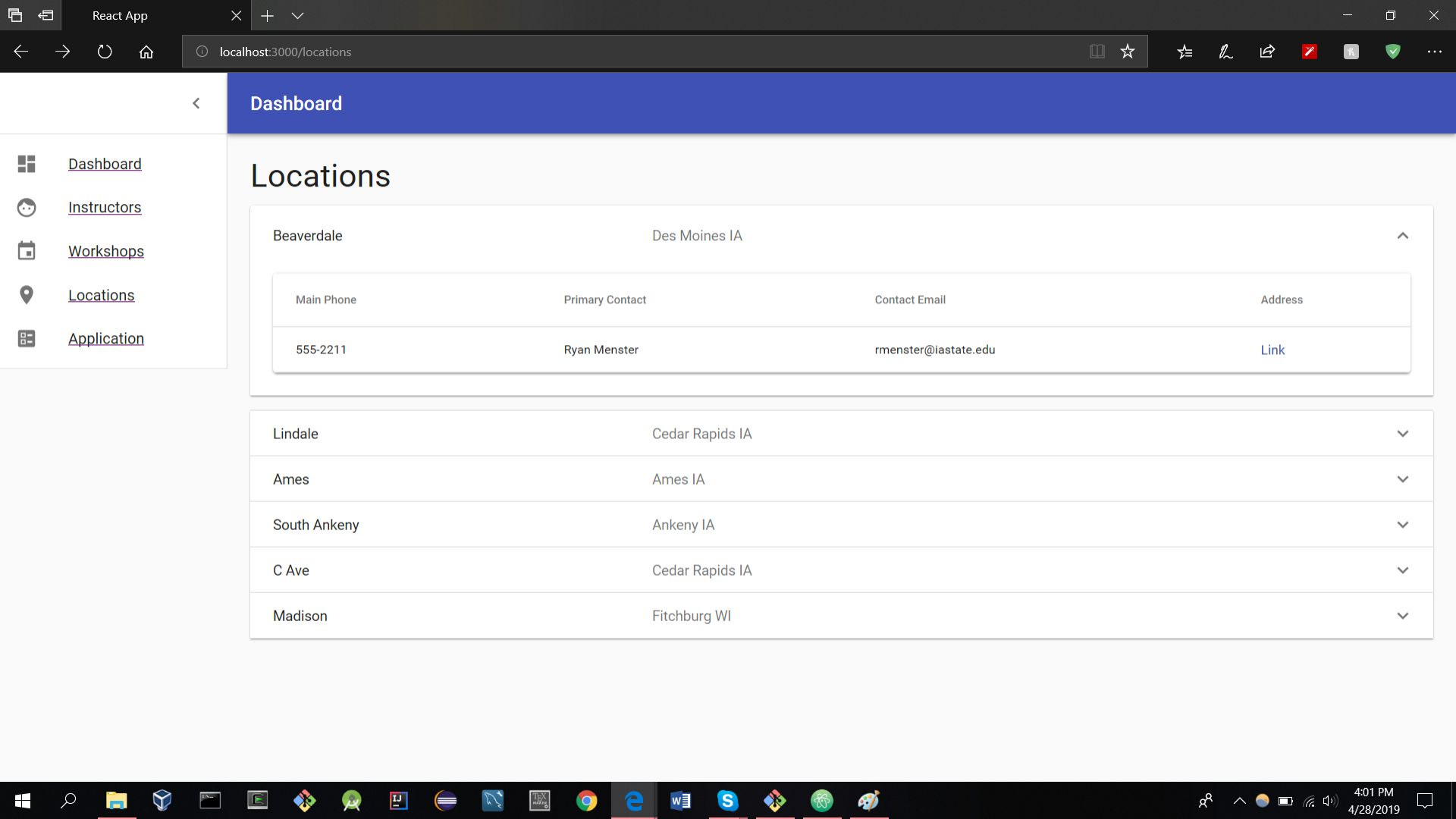
Product Design

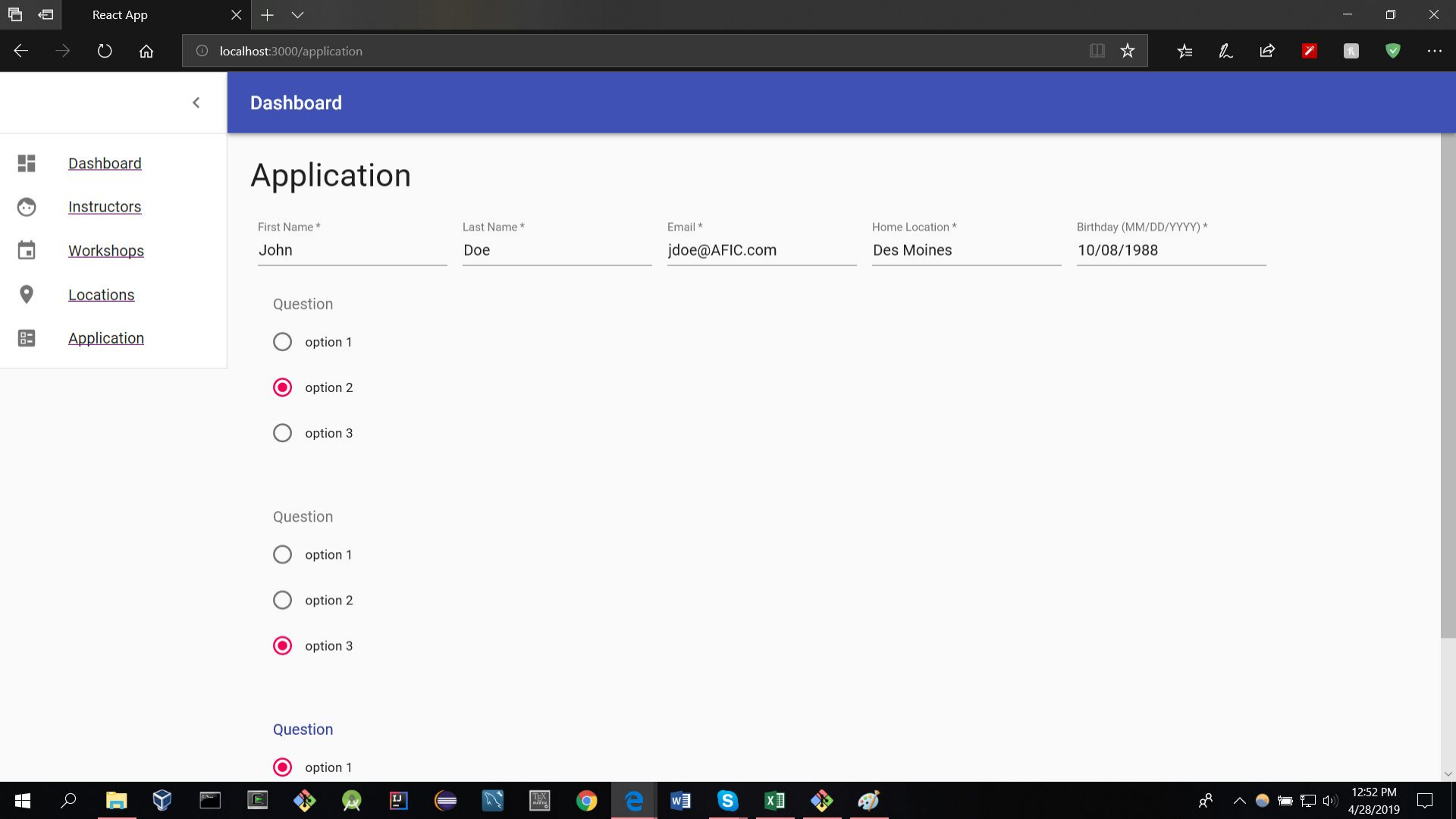

React App
localhost:3000/
Dashboard
Dashboard
Instructors
Workshops
Locations
Application
Dashboard
Inbox
David Bane requests to become an instructor
April 25, 2019
This is where the details of a message will go. We can add more content here.
Christine Hicaro requests to become an instructor
April 15th, 2019
Ryan Menster upgraded his Cardio certification
April 12th, 2019
Max Talley requests to become an instructor
March 29th, 2019
Jacob Peterson upgraded his Kettlebell certification
March 28th, 2019
12:46 PM
4/28/2019


React App
localhost:3000/instructors
Dashboard
Dashboard
Instructors
Workshops
Locations
Application
Instructors
First Name
Last Name
Home Location
Home Location Number
Date of Birth
David
Bane
Boulder, CO
30
2/17/1997
Ryan
Menster
Urbandale, IA
40
4/12/1996
Max
Talley
Ames, IA
20
7/23/1998
Christine
Hicaro
Altoona, IA
10
9/22/1997
ADD INSTRUCTOR
12:47 PM
4/28/2019


React App
localhost:3000/addinstructor
Dashboard
Dashboard
Instructors
Workshops
Locations
Application
Add Instructor
First Name *
John
Last Name *
Doe
Home Location *
Des Moines
Home Location Number *
12
Birthday (MM/DD/YYYY) *
10/08/1988
Email *
jdoe@AFIC.com
Password *
SUBMIT
12:50 PM
4/28/2019


React App
localhost:3000/workshops
Dashboard
Dashboard
Instructors
Workshops
Locations
Application
Workshops
Location
Date
Type
Level
Max Attendance
Urbandale, IA
April 3, 2019
Cardio
2
40
Boulder, CO
April 10, 2019
Kettlebell
1
30
Ames, IA
April 13, 2019
Jazzercize
5
20
Altoona, IA
April 20, 2019
Kettlebell
2
30
Waukee, IA
April 22, 2019
Goat Yoga
3
15
12:50 PM
4/28/2019


React App
localhost:3000/locations
Dashboard
Dashboard
Instructors
Workshops
Locations
Application
Locations
Beaverdale
Des Moines IA
Main Phone
Primary Contact
Contact Email
Address
555-2211
Ryan Menster
rmenster@iastate.edu
Link
Lindale
Cedar Rapids IA
Ames
Ames IA
South Ankeny
Ankeny IA
C Ave
Cedar Rapids IA
Madison
Fitchburg WI
4:01 PM
4/28/2019


React App
localhost:3000/application
Dashboard
Dashboard
Instructors
Workshops
Locations
Application
Application
First Name *
John
Last Name *
Doe
Email *
jdoe@AFIC.com
Home Location *
Des Moines
Birthday (MM/DD/YYYY) *
10/08/1988
Question
option 1
option 2
option 3
Question
option 1
option 2
option 3
Question
option 1
12:52 PM
4/28/2019

Group Roles

David: Group Facilitator

Ryan: Database Administrator

Max: Group Scribe

Christine: Group Administrator

Presenter: David, Ryan, Max,Christine

Plan for next semester

1. Finish the front end user interface
2. Design our database schema
3. Setup Microsoft Azure
4. Integrate Express routing
5. Develop our certification approval algorithm
6. Producing a final product

Presenter: David Bane

Thank you