Fullstack CRUD Application - Platform For Managing Students and Campuses

- **Due**: June 14th, 2019 by 10:00AM
- **Points**: 25
- **Submitting:** GitHub URL to repository (front-end) and GitHub URL to repository (back-end)
- **Recommendation:** Use `create-react-app` to bootstrap the front-end portion of the application and use `express-generator` to bootstrap the back-end portion of the application
  - You might also need to look into setting up a `proxy` in the package.json of the front-end or the `cors` npm module
- If there is a time-crunch regarding setting up a back-end (database and routes), feel free to use dummy data on the front-end as a last resort
- **Group/Team Sizes**: 2 to 3

Goal

Using Node, Express, React, Redux, PostgreSQL, and Sequelize, build a RESTful full-stack web application to manage students and campuses. This will cover all of the CRUD operations such as Creation, Reading, Updating, and Deletion. This will encompass models, querying a database with an ORM, designing routes/endpoints and handler functions to process user requests and generate responses, writing out React Components, managing the state of the application with React-Redux, and much more. This will also involve having two individual repositories/applications (a separate server and a separate client), which encourages separation of concerns and modularity.

Assignment

Complete the following general User Stories:

As a User I:

- [   ] will land on a visually pleasing homepage by default, which allows navigation to view **all campuses** and **all students**
- can navigate to **all campuses view**, and
  - [   ] see a list of all campuses in the database
  - [   ] see an informative message if no campuses exist
  - [   ] add a new campus

- ■ [ ] with a validated form displaying real-time error messages
- ■ [ ] which redirects to the new campus' **single campus view**
- ● can navigate to a **single campus view**, and
  - ○ [ ] see details about a single campus, including enrolled students (if any)
  - ○ [ ] see an informative message if no students are enrolled at that campus
  - ○ [ ] navigate to any student's **single student view**
  - ○ [ ] delete the campus (and elegantly handle associated students)
  - ○ [ ] edit campus information (including adding/removing students)
    - ■ [ ] with a validated form displaying real-time error messages
    - ■ [ ] which redirects back to the **single campus view**
- ● can navigate to **all students view**, and
  - ○ [ ] see a list of all students in the database
  - ○ [ ] see an informative message if no students exist
  - ○ [ ] add a new student
    - ■ [ ] with a validated form displaying real-time error messages
    - ■ [ ] which redirects the new student's **single student view**
- ● can navigate to a **single student view**, and
  - ○ [ ] see details about a single student, including the campus at which they are enrolled (if exists)
  - ○ [ ] see an informative message if student is not enrolled at a campus
  - ○ [ ] navigate to **single campus view** of the student's enrolled campus
  - ○ [ ] delete the student
  - ○ [ ] edit the student's information (including campus s/he is enrolled at)
    - ■ [ ] with a validated form displaying real-time error messages
    - ■ [ ] which redirects back to the **single student view**

Complete = Completes all User Stories above

Incomplete = Does not complete all User Stories above; needs improvement or missing submission

Here is a more technical breakdown/guideline of what's expected from the above User Stories...

All Campuses and Students (21/57)

Backend (Sequelize)
- [ ] Write a `campuses` model with the following information:
  - [ ] name - not empty or null
  - [ ] imageUrl - with a default value

- [ ] address - not empty or null
  - [ ] description - extremely large text

- [ ] Write a `students` model with the following information:
  - [ ] firstName - not empty or null
  - [ ] lastName - not empty or null
  - [ ] email - not empty or null; must be a valid email
  - [ ] imageUrl - with a default value
  - [ ] gpa - decimal between 0.0 and 4.0

- [ ] Students may be associated with at most one campus. Likewise, campuses may be associated with many students

(**Express and Sequelize**)
- [ ] Write a route to serve up all students
- [ ] Write a route to serve up all campuses

Frontend (React-Redux, React, and React Router)
- [ ] Write a campuses sub-reducer to manage campuses in your Redux store
- [ ] Write a students sub-reducer to manage students in your Redux store

- [ ] Write a component to display a list of all campuses (just their names and images)
- [ ] Write a component to display a list of all students (just their names)
- [ ] Display the all-campuses component when the url matches `/campuses`
- [ ] Display the all-students component when the url matches `/students`
- [ ] Add links to the navbar that can be used to navigate to the all-campuses view and the all-students view

Single Student and Single Campus (14/57)

Backend (Express and Sequelize)
- [ ] Write a route to serve up a single campus (based on its id), _including that campuses' students_
- [ ] Write a route to serve up a single student (based on their id), _including that student's campus_

Frontend (React and React Router)
- [ ] Write a component to display a single campus with the following information:
  - [ ] The campus's name, image, address and description
  - [ ] A list of the names of all students in that campus (or a helpful message if it doesn't have any students)
- [ ] Display the appropriate campus's info when the url matches `/campuses/:campusId`
- [ ] Clicking on a campus from the all-campuses view should navigate to show that campus in

the single-campus view

- [ ] Write a component to display a single student with the following information:
  - [ ] The student's full name, email, image, and gpa
  - [ ] The name of their campus (or a helpful message if they don't have one)
- [ ] Display the appropriate student when the url matches `/students/:studentId`
- [ ] Clicking on a student from the all-students view should navigate to show that student in the single-student view

- [ ] Clicking on the name of a student in the single-campus view should navigate to show that student in the single-student view
- [ ] Clicking on the name of a campus in the single-student view should navigate to show that campus in the single-campus view

Adding a Campus and Adding a Student (12/57)

Backend (Express and Sequelize)
- [ ] Write a route to add a new campus
- [ ] Write a route to add a new student

Frontend (React and React Router)
- [ ] Write a component to display a form for adding a new campus that contains inputs for _at least_ the name and address.
- [ ] Display this component EITHER as part of the all-campuses view, or as its own view
- [ ] Submitting the form with a valid name/address should:
  - [ ] Make an AJAX request that causes the new campus to be persisted in the database
  - [ ] Add the new campus to the list of campuses without needing to refresh the page

- [ ] Write a component to display a form for adding a new student that contains inputs for _at least_ first name, last name and email
- [ ] Display this component EITHER as part of the all-students view, or as its own view
- [ ] Submitting the form with a valid first name/last name/email should:
  - [ ] Make an AJAX request that causes the new student to be persisted in the database
  - [ ] Add the new student to the list of students without needing to refresh the page

Removing a Campus and Removing a Student (10/57)

Backend (Express and Sequelize)
- [ ] Write a route to remove a campus (based on its id)
- [ ] Write a route to remove a student (based on their id)

Frontend (React and Axios/Fetch)
- [ ] In the all-campuses view, include an `X` button next to each campus

- [ ] Clicking the `X` button should:
  - [ ] Make an AJAX request that causes that campus to be removed from database
  - [ ] Remove the campus from the list of campuses without needing to refresh the page

- [ ] In the all-students view, include an `X` button next to each student
- [ ] Clicking the `X` button should:
  - [ ] Make an AJAX request that causes that student to be removed from database
  - [ ] Remove the student from the list of students without needing to refresh the page

Total: - / 57

The following 15 images (wireframes) can help guide your decisions regarding UI/UX:

Campus Listing

All Campuses   Add Campus

| [campus image] | **Campus Name**
5 students

edit   delete |
| [campus image] | **Campus Name**
5 students

edit   delete |

| [campus image] | **Campus Name**
5 students

edit   delete |
| [campus image] | **Campus Name**
5 students

edit   delete |

| [campus image] | **Campus Name**
5 students

edit   delete |
| [campus image] | **Campus Name**
5 students

edit   delete |

| [campus image] | **Campus Name**
5 students

edit   delete |
| [campus image] | **Campus Name**
5 students

edit   delete |

Campus Listing Blank Slate

All Campuses

There are no campuses registered in the database.

Add Campus

New Campus Form

Campus Name

[   ]

[Add Campus]

Show Campus

[campus image]

{{campus.name}}

Lorem ipsum dolor sit amet, consectetur
adipiscing elit, sed do eiusmod tempor
incididunt ut labore et dolore magna
aliqua. Ut enim ad minim veniam, quis
nostrud exercitation ullamco laboris nisi
ut aliquip ex ea commodo consequat. Duis
aute irure dolor in reprehenderit in
voluptate velit esse cillum dolore eu
fugiat nulla pariatur. Excepteur sint
occaecat cupidatat non proident, sunt in
culpa qui officia deserunt mollit anim id
est laborum.

323 W Adress St
Citystate, Provence 78778

edit   delete

Students on campus

Add Students

[student image]	[student image]	[student image]	[student image]	[student image]
Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name
[student image]	[student image]	[student image]	[student image]	[student image]
Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name

Show Campus
w/No Students

[campus image]

{{campus.name}}

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

323 W Adress St
Citystate, Provence 78778

[edit] [delete]

Students on campus

There are no students currently registered to this campus.

[Add Students]

Edit Campus

Campus Name

Really Cool Campus

Campus Location

1200 Address Lane

Campus Image URL

http://www.placekittens.com/g/300/498

Campus Description

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Save Changes

Students on Campus

Select student...   ▼   Add to Campus

There are no students currently registered to this campus.

Show Student w/No Campus Set

[student image]

{{student.name}}

GPA: 3.4

edit   delete

This student is not registered to a campus.

Select campus...   ▼   Add to Campus

New Student Form

Student Name

Add Student

Show Student

[student image]

{{student.name}}

GPA: 3.4

edit   delete

This student is registered to a campus

[campus image]   **Campus Name**
                  5 students

                  edit

Select campus... ▼

Change Campus

Student Listing
Blank Slate

All Students

There are no students registered in the database.

Add Student

All Students

Add Student

[student image]	[student image]	[student image]	[student image]	[student image]
Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name

[student image]	[student image]	[student image]	[student image]	[student image]
Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name

[student image]	[student image]	[student image]	[student image]	[student image]
Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name

[student image]	[student image]	[student image]	[student image]	[student image]
Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name

[student image]	[student image]	[student image]	[student image]	[student image]
Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name	Student Name campus name

❖ Campus Card

[campus image]

Campus Name

5 students

edit   delete

❖ Student Row

[student image]

Student Name

remove from campus

❖ Student Card

[student image]

Student Name

campus name

Edit Campus
w/No Students

Campus Name	Really Cool Campus
Campus Location	1200 Address Lane
Campus Image URL	http://www.placekittens.com/g/300/498
Campus Description	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Save Changes

Students on Campus

Select student... ▼   Add to Campus

[student image]	Student Name	remove from campus
[student image]	Student Name	remove from campus
[student image]	Student Name	remove from campus
[student image]	Student Name	remove from campus
[student image]	Student Name	remove from campus
[student image]	Student Name	remove from campus

Form With Errors

Student Name

GPA

Three

Student URL

http://www.placekittens.com/g/300/498

Student Name CAN NOT be blank.
GPA must be a number between 0.0 and 4.0

Save Changes

Edit Student

Student Name   Collin Miller

         GPA   3.4

Student URL   http://www.placekittens.com/g/300/498

         Save Changes