UNIVERSITY OF PITTSBURGH
CS2310 MULTIMEDIA SOFTWARE ENGINEERING

DAYCARE MANAGEMENT SYSTEM
FINAL PROJECT PRESENTATION

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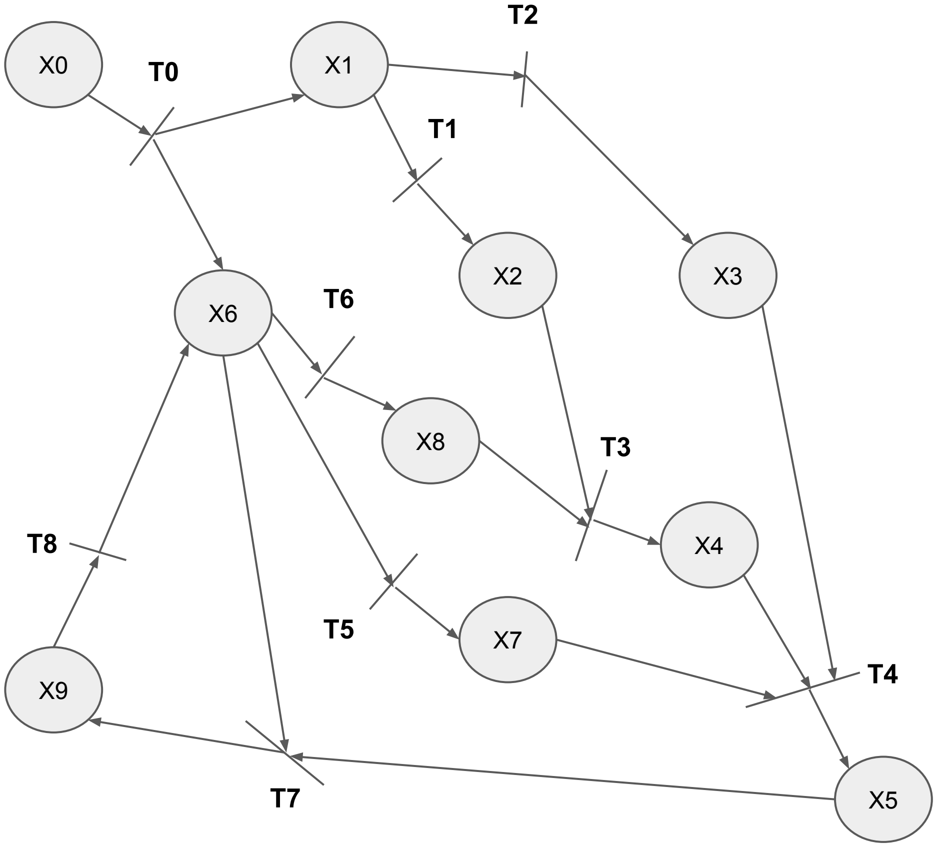
Description

- Together Old and Young (TOY) is a global movement to promote younger children and older adults learning together.
- Recreational Facility Daycare Management System (RFDMS) Offers a platform to any recreational facility offering activities and spaces that empower intergenerational learning.
- The main goal is to create a “daycare” management system that is agnostic to the supplemented facility.
- A “daycare” management system should provide the following functionalities:
  - Allow a Regular User to submit an Application to register their Kid(s) in the system.
  - Allow a Regular User to submit an Application to register as a Mentor in the system.
  - Allow an Admin User to approve Applications in the system.
  - Allow an Admin User to manage Mentors and Kids in the system.
  - Allow the guardian of a Kid to submit an unscheduled Appointment in the system.
  - Allow a Mentor to view and accept to attend any available (unscheduled) Appointment(s) in the system, which causes the Appointment to become scheduled.
  - Allow an Admin to check in/check out the Kid and Mentor associated with a scheduled Appointment (start/end the scheduled Appointment).

Control Diagram (Petri-Net)



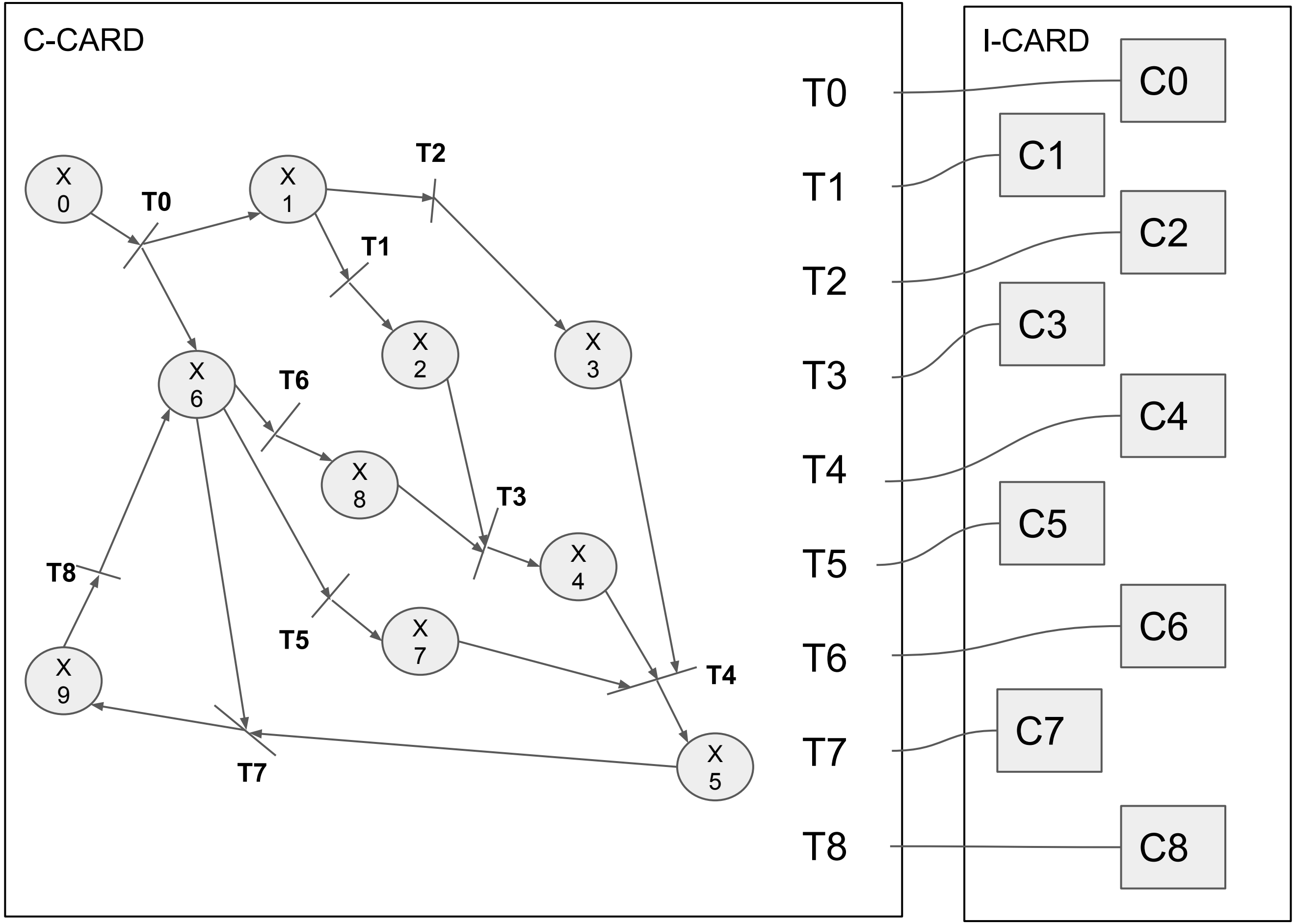
PLACES:

- **X0** = APPLICATION INITIAL STATE
- **X1** = REGULAR USER STATE
- **X2** = USER WITH KID(S) STATE
- **X3** = MENTOR USER STATE
- **X4** = UNSCHEDULED APPOINTMENT FOR USER'S KID STATE
- **X5** = SCHEDULED APPOINTMENT FOR USER'S KID AND MENTOR STATE
- **X6** = ADMIN USER STATE
- **X7** = MENTOR USER APPROVED STATE
- **X8** = USER'S KID APPROVED STATE
- **X9** = ACTIVE APPOINTMENT STATE

TRANSITIONS:

- **T0** = *ANY USER* SUCCESSFULLY LOGS IN
- **T1** = *REGULAR USER* SUBMITS KID APPLICATION
- **T2** = *REGULAR USER* SUBMITS MENTOR APPLICATION
- **T3** = *REGULAR USER* (WITH APPROVED KID) SUBMITS UNSCHEDULED APPOINTMENT FOR THE KID
- **T4** = *REGULAR USER* (APPROVED AS MENTOR) ACCEPTS UNSCHEDULED APPOINTMENT
- **T5** = *ADMIN USER* APPROVES MENTOR APPLICATION
- **T6** = *ADMIN USER* APPROVES KID APPLICATION
- **T7** = *ADMIN USER* CHECKS IN KID AND MENTOR
- **T8** = *ADMIN USER* CONCLUDES AN ACTIVE APPOINTMENT

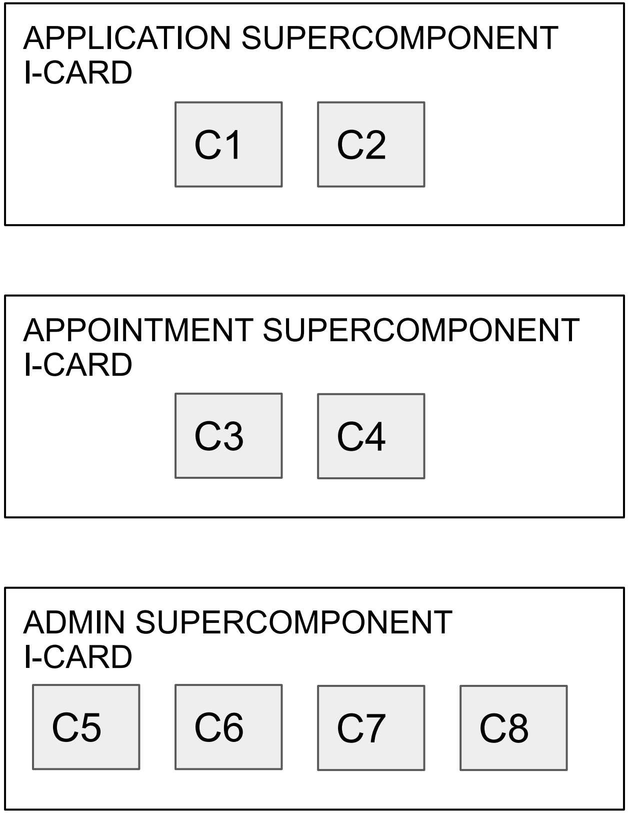
Information and Control Cards



COMPONENTS:

- **C0** = USER AUTHENTICATION
- **C1** = SUBMIT KID APPLICATION
- **C2** = SUBMIT MENTOR APPLICATION
- **C3** = SUBMIT UNSCHEDULED APPOINTMENT FOR THE KID
- **C4** = CHANGE UNSCHEDULED APPOINTMENT TO SCHEDULED APPOINTMENT
- **C5** = SUBMIT MENTOR
- **C6** = SUBMIT KID
- **C7** = CHECK IN KID/MENTOR
- **C8** = CHECK OUT KID/MENTOR

Supercomponents



APPLICATION SUPERCOMPONENT I-CARD

C1 C2

APPOINTMENT SUPERCOMPONENT I-CARD

C3 C4

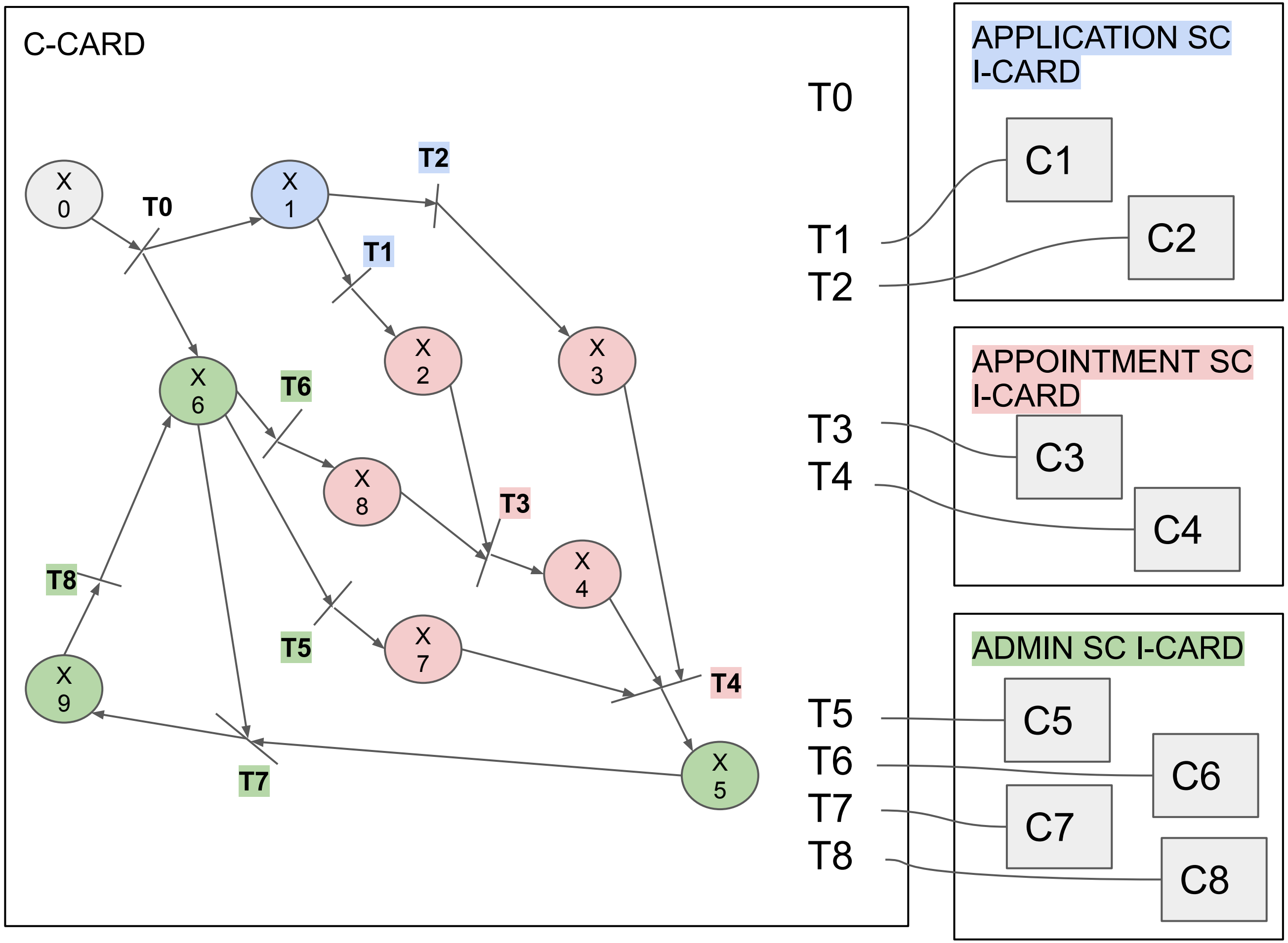
ADMIN SUPERCOMPONENT I-CARD

C5 C6 C7 C8

BASE COMPONENTS:

- **C0** = USER AUTHENTICATION
- **C1** = SUBMIT KID APPLICATION
- **C2** = SUBMIT MENTOR APPLICATION
- **C3** = SUBMIT UNSCHEDULED APPOINTMENT FOR THE KID
- **C4** = CHANGE UNSCHEDULED APPOINTMENT TO SCHEDULED APPOINTMENT
- **C5** = SUBMIT MENTOR
- **C6** = SUBMIT KID
- **C7** = CHECK IN KID/MENTOR
- **C8** = CHECK OUT KID/MENTOR

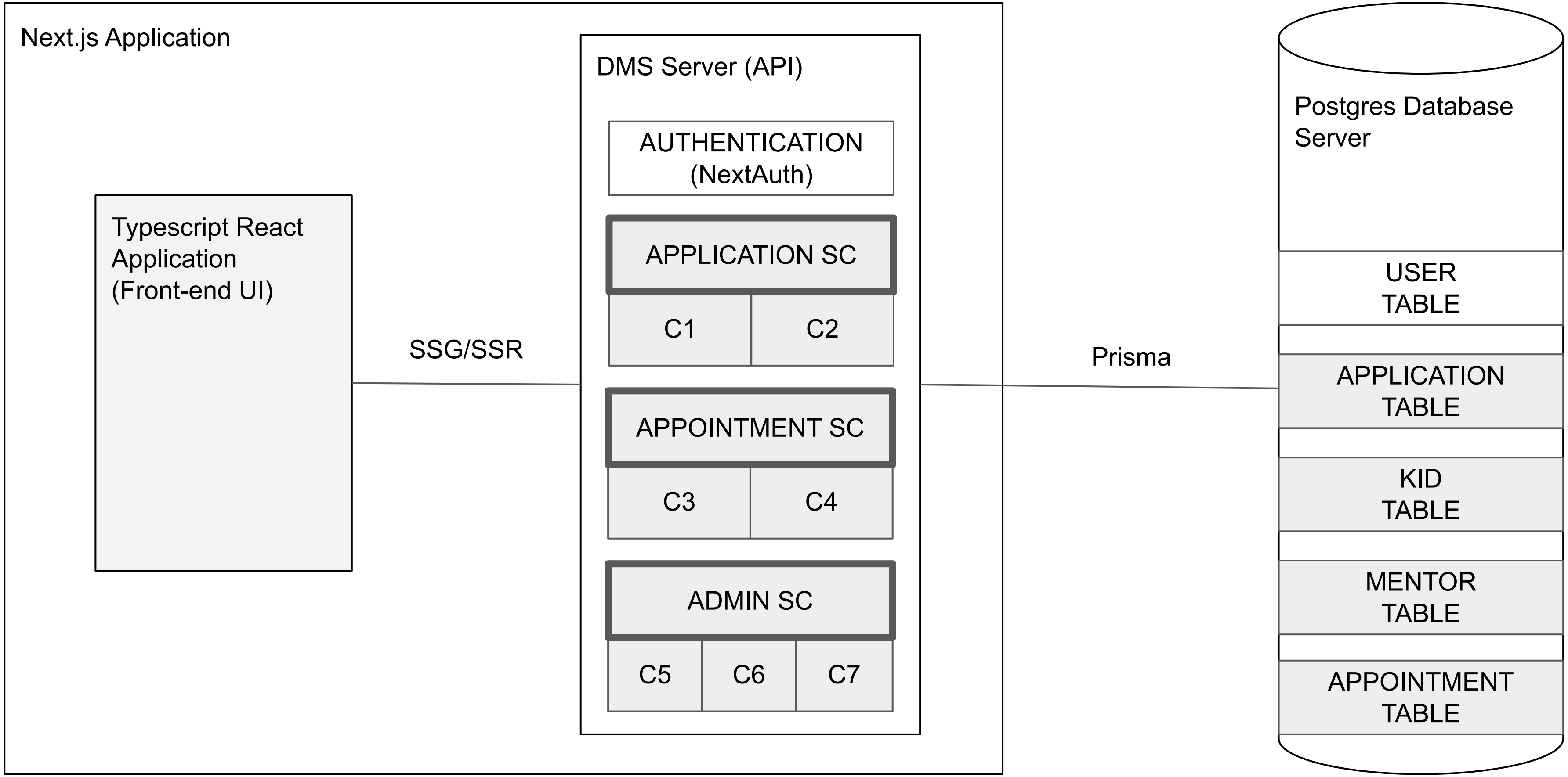
Supercomponent Highlight



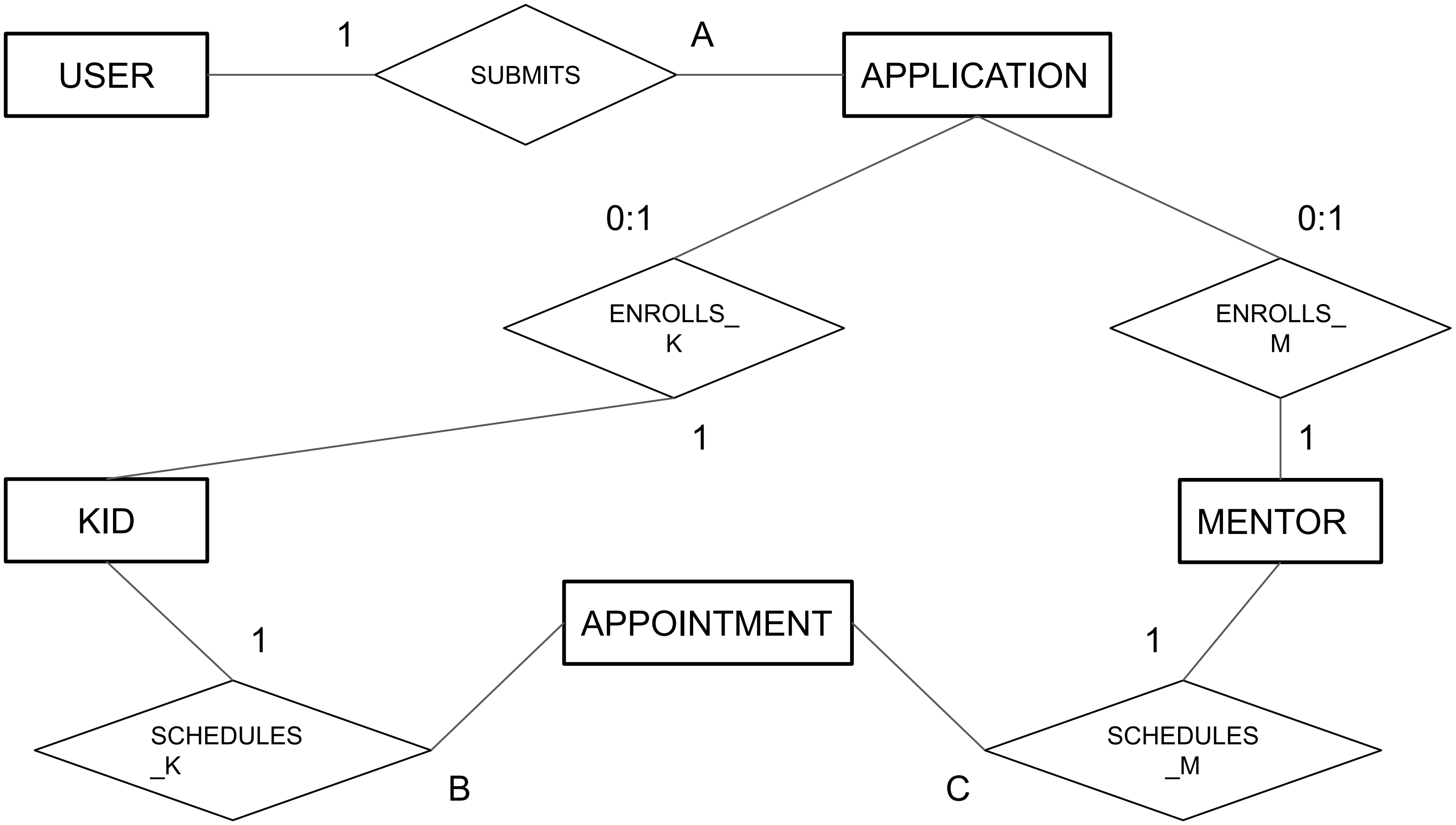
COMPONENTS:

- **C0** = USER AUTHENTICATION
- **C1** = SUBMIT KID APPLICATION
- **C2** = SUBMIT MENTOR APPLICATION
- **C3** = SUBMIT UNSCHEDULED APPOINTMENT FOR THE KID
- **C4** = CHANGE UNSCHEDULED APPOINTMENT TO SCHEDULED APPOINTMENT
- **C5** = SUBMIT MENTOR
- **C6** = SUBMIT KID
- **C7** = CHECK IN KID/MENTOR
- **C8** = CHECK OUT KID/MENTOR

Deployment Diagram



Database Entity-Relationship Diagram



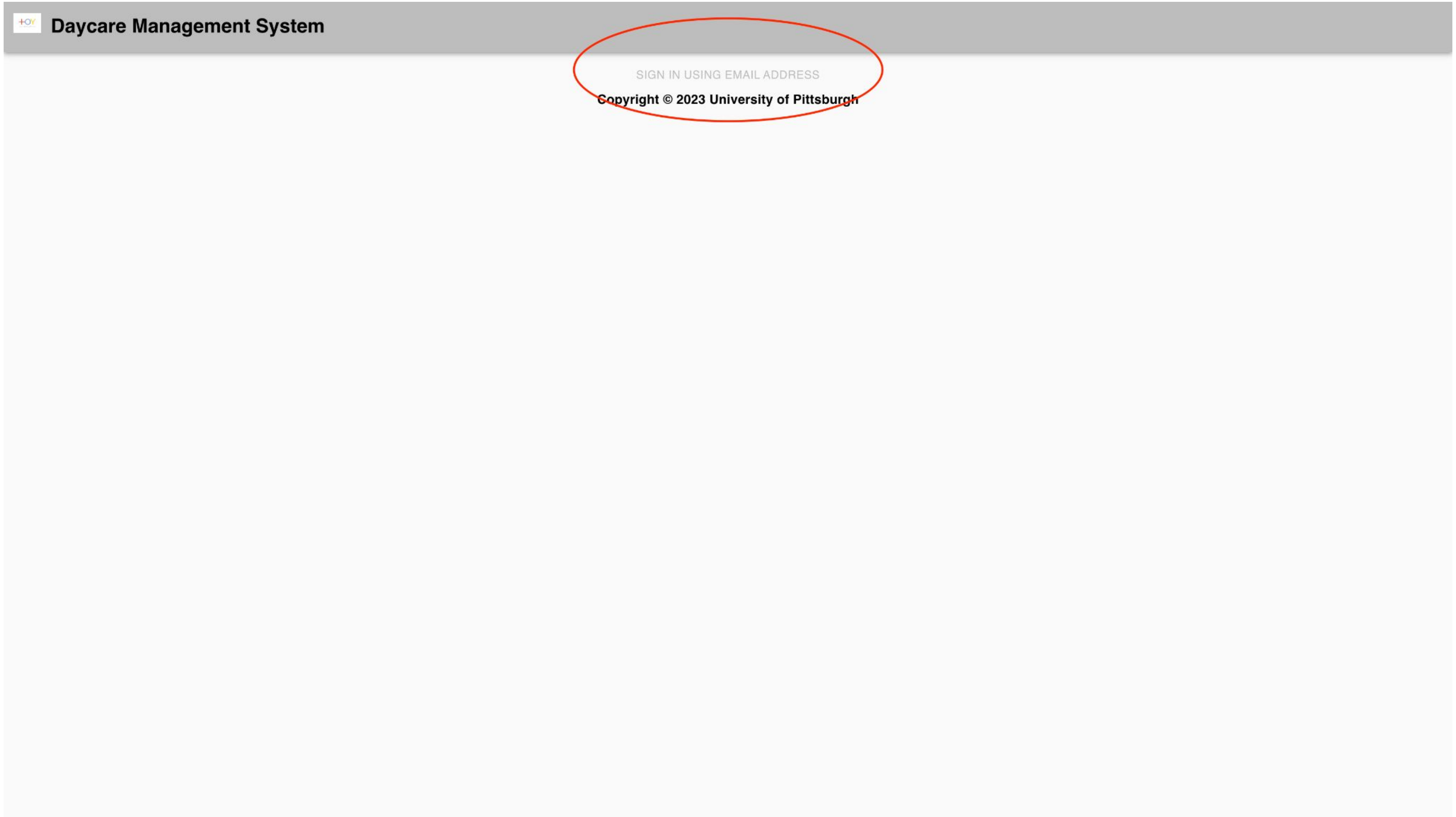
- **ENTITIES:**
  - **USER**: id, name, *email*
  - **APPLICATION**: app_id, user_id, application_type, applicant_name, applicant_age, applicant_photo, applicant_file, isApproved
  - **KID**: app_id (kid_id)
  - **MENTOR**: app_id (mentor_id)
  - **APPOINTMENT**: appt_id, app_id, schedule_timestamp, start_timestamp, end_timestamp, isActive

- **RELATIONSHIPS:**
  - **SUBMITS<USER, APPLICATION> 1:A, PARTIAL/PARTIAL,**
  - **ENROLLS_K<APPLICATION, KID> 0/1:1, PARTIAL/PARTIAL,**
  - **ENROLLS_M<APPLICATION, MENTOR> 0/1:1, PARTIAL/PARTIAL,**
  - **SCHEDULES_K<KID, APPOINTMENT> 1:B, PARTIAL/PARTIAL,**
  - **SCHEDULES_M<MENTOR, APPOINTMENT> 1:C, PARTIAL/PARTIAL,**

Prototype Detailed Scenarios

Scenario 1: Regular User Log In

- Click “Sign In Using Email Address” and then follow the sign-in process (this is currently mocked using [Email Magic Links with NextAuth]())



Daycare Management System

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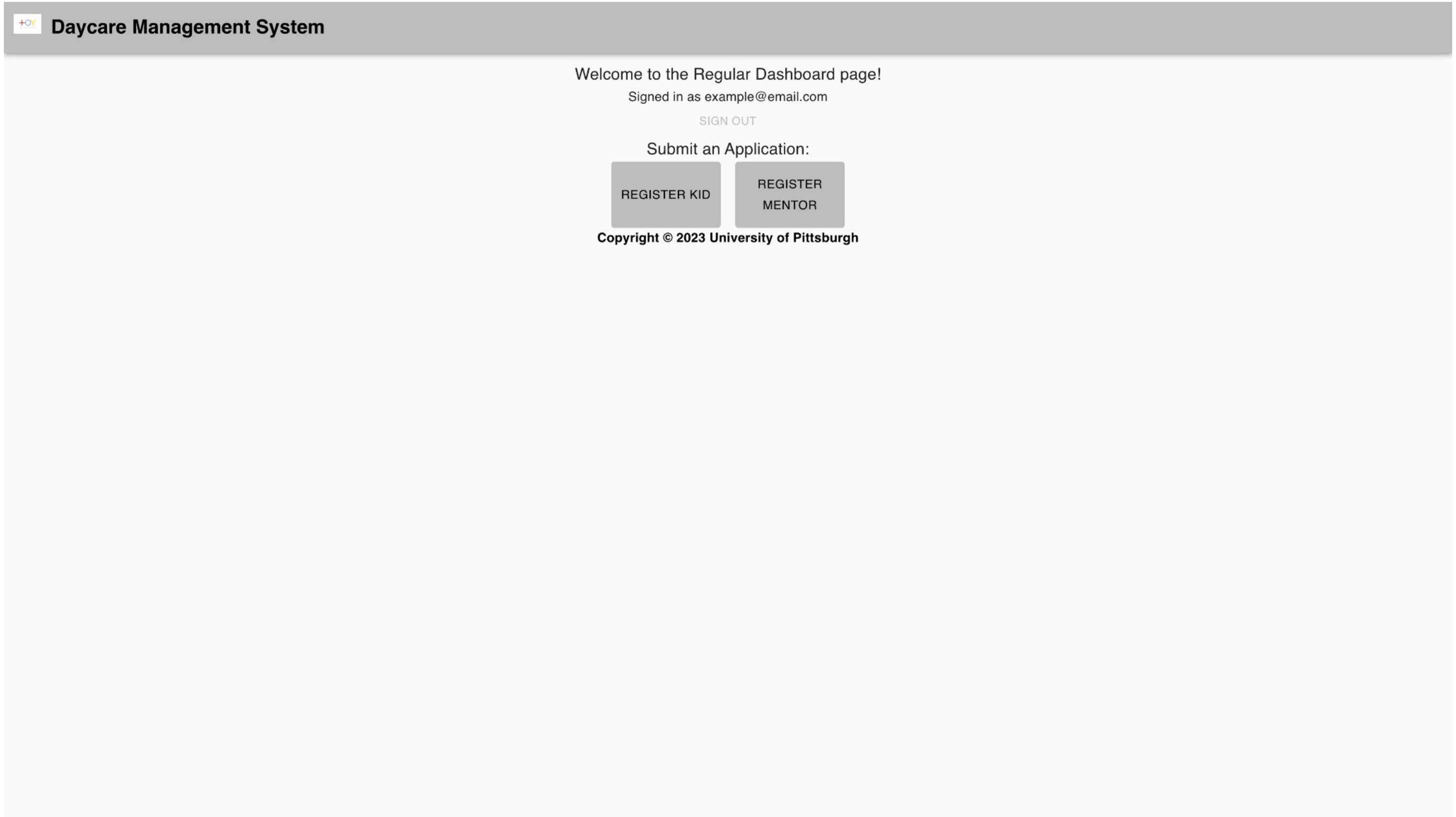
Prototype Detailed Scenarios

Scenario 1: Regular User Log In

- After successfully logging in, the Regular User has been redirected to the Regular User Dashboard.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as example@email.com

Submit an Application:

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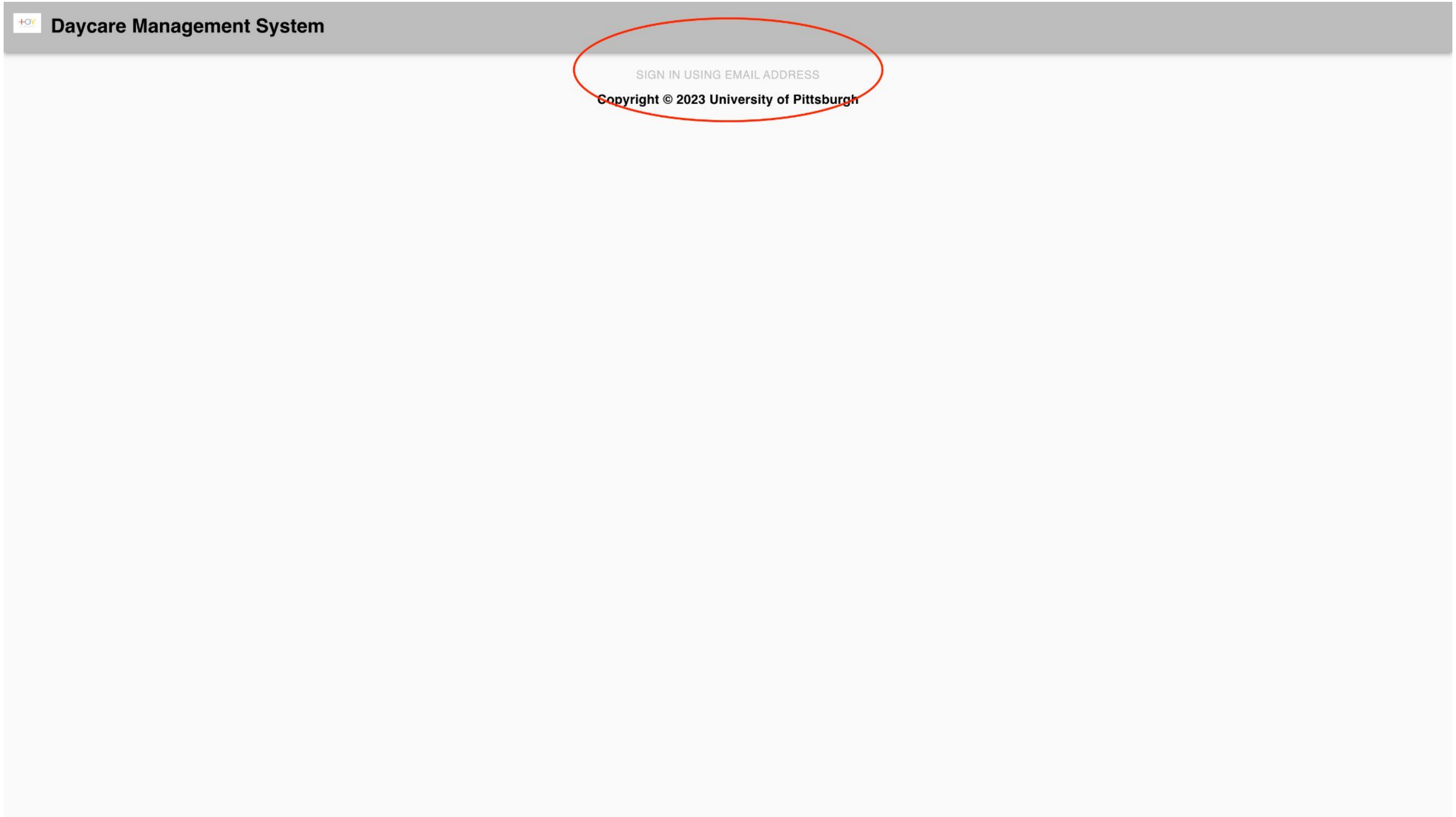
Prototype Detailed Scenarios

Scenario 2: Admin User Log In

- Click “Sign In Using Email Address” and then follow the sign-in process (this is currently mocked using Email Magic Links with NextAuth)



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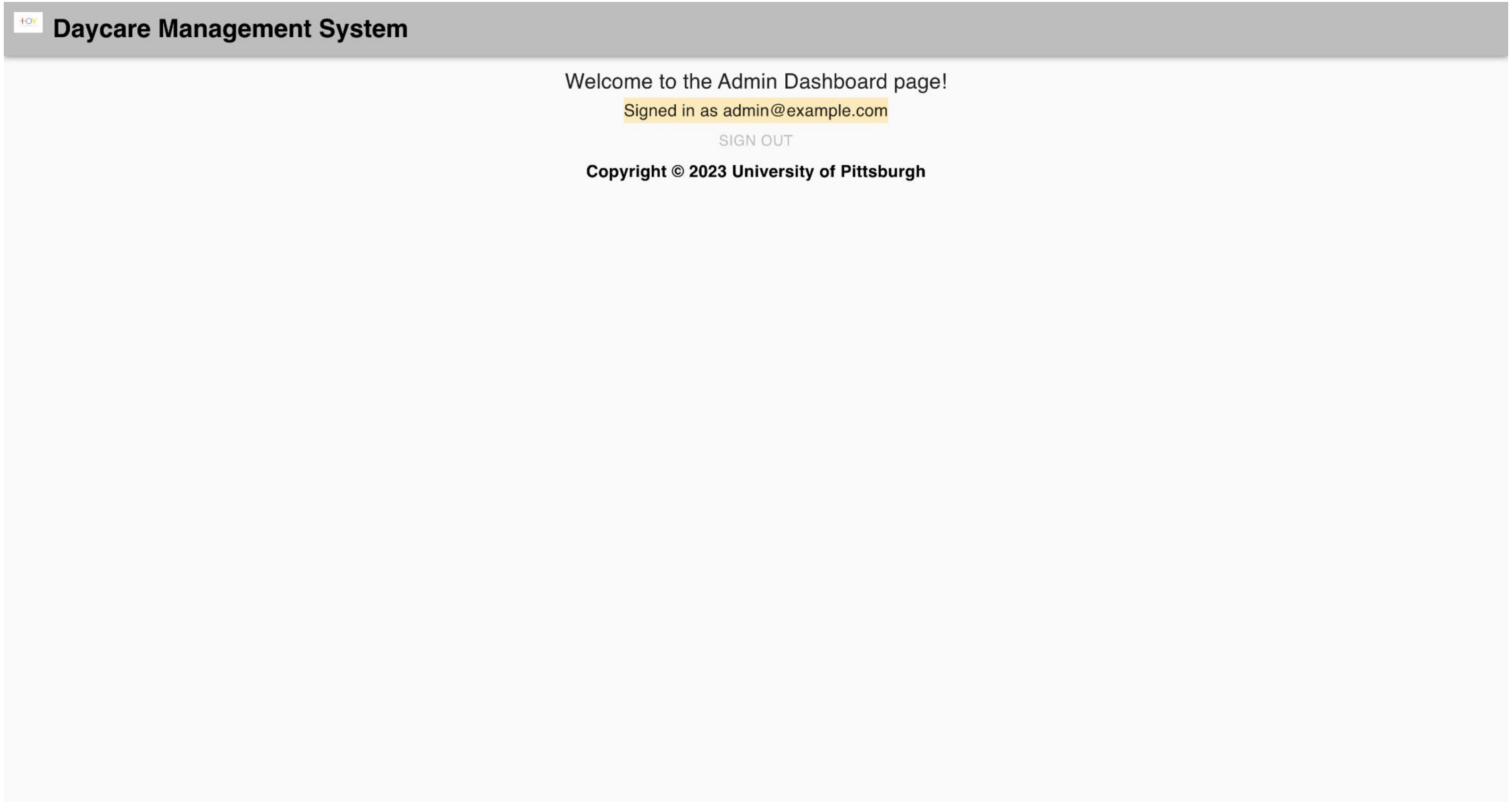
Prototype Detailed Scenarios

Scenario 2: Admin User Log In

- After successfully logging in, the Admin User has been redirected to the Admin User dashboard.



Welcome to the Admin Dashboard page!

Signed in as admin@example.com

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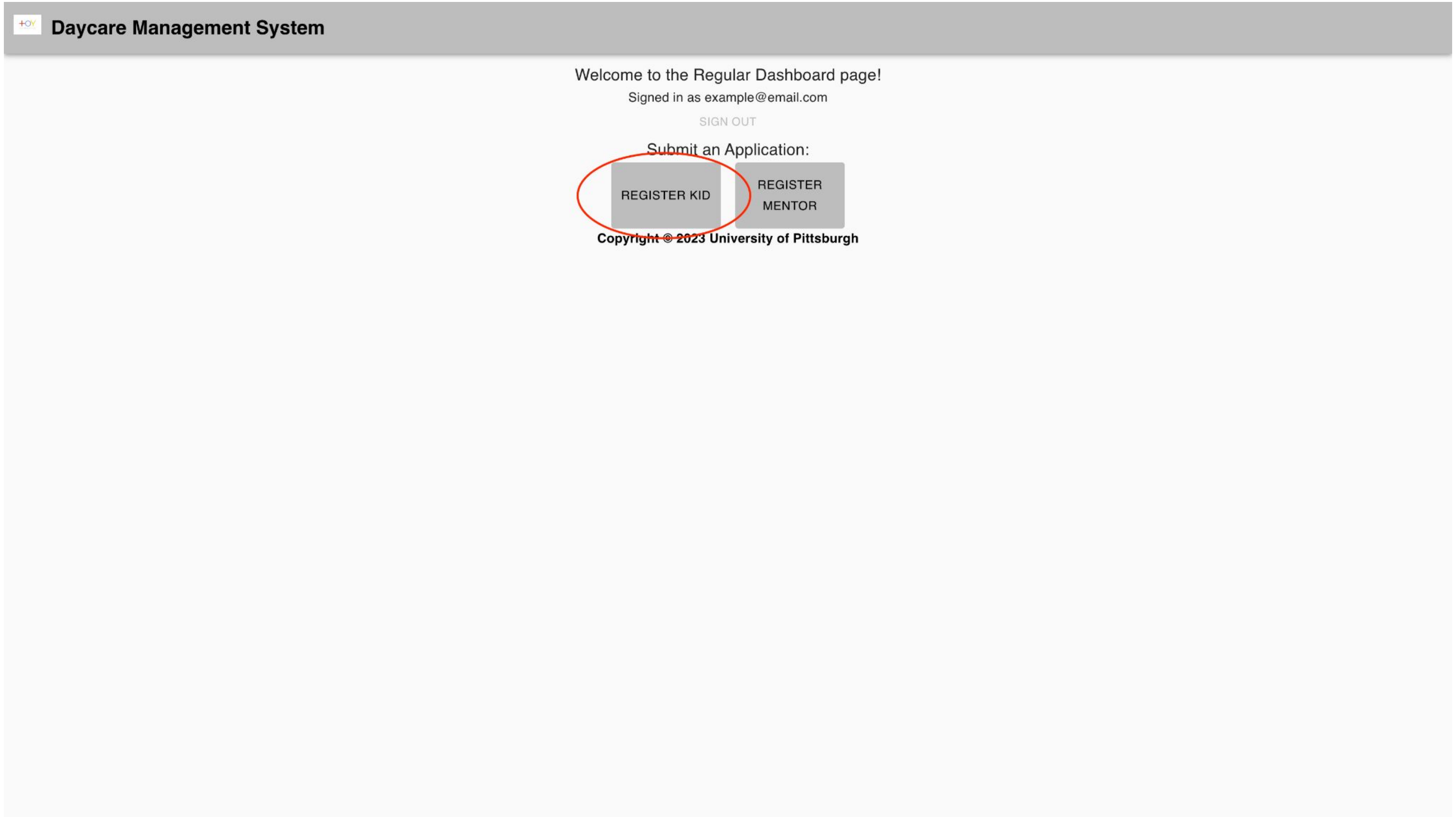
Prototype Detailed Scenarios

Scenario 3: Regular User Submits Kid Application(s)

- As a Regular User viewing the Regular User dashboard, Click “Register Kid” button.



Welcome to the Regular Dashboard page!

Signed in as example@email.com

Submit an Application:

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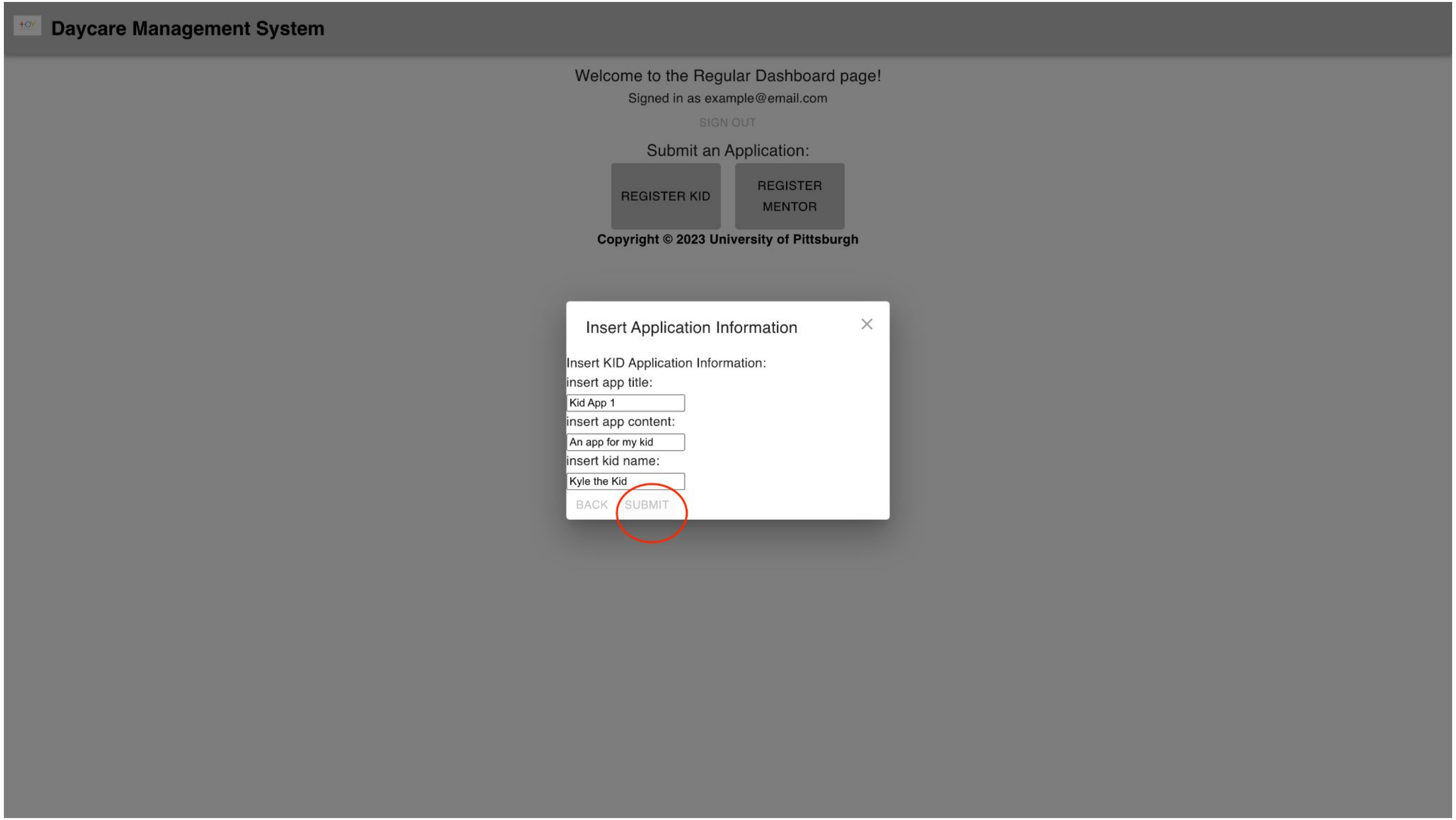
Prototype Detailed Scenarios

Scenario 3: Regular User Submits Kid Application(s)

- Once the Insert App Info popup has displayed, insert the required information. Then, click the “Submit” button



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as example@email.com

Submit an Application:

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Insert Application Information

Insert KID Application Information:

insert app title: Kid App 1

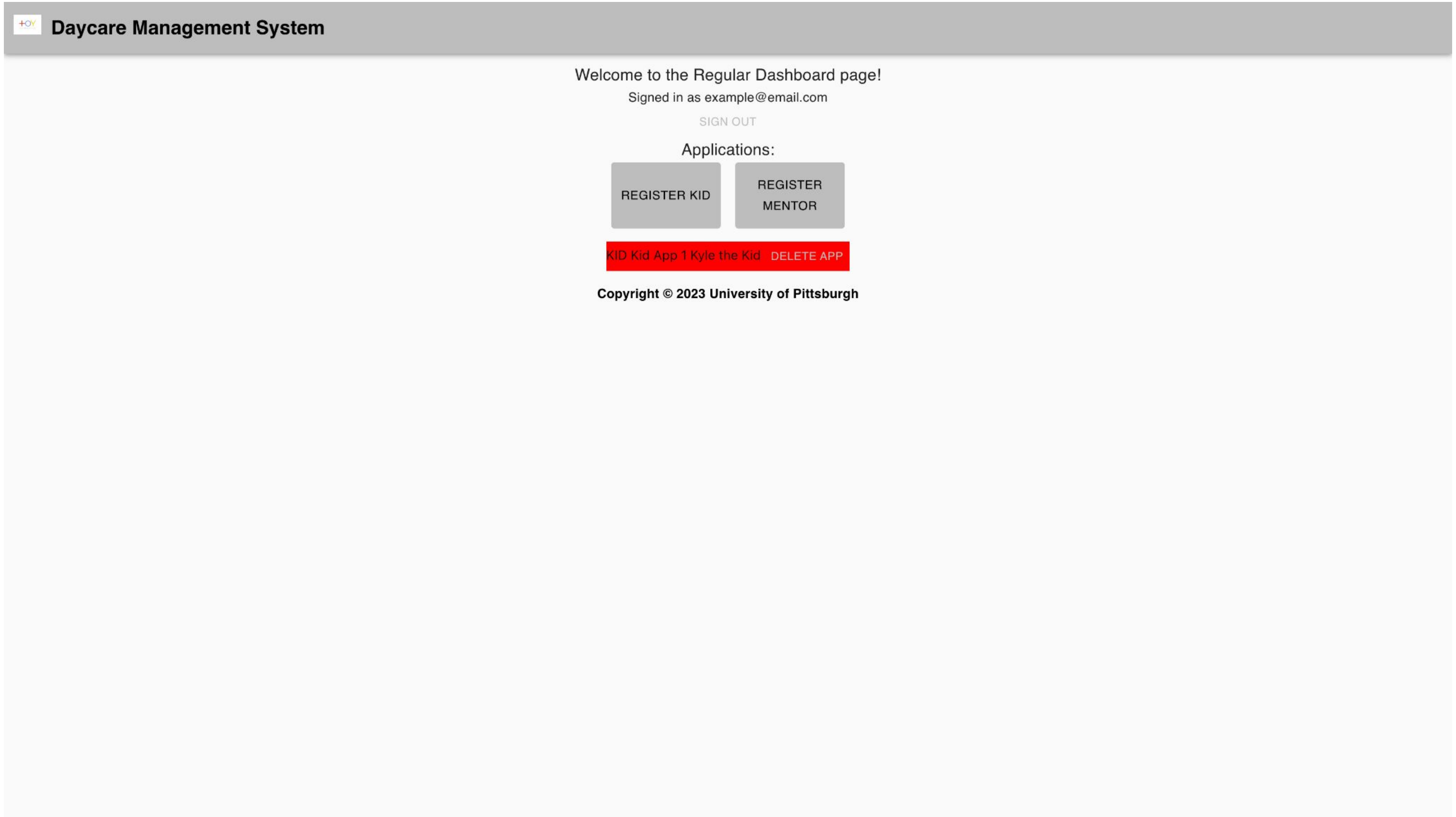
insert app content: An app for my kid

insert kid name: Kyle the Kid

Prototype Detailed Scenarios

Scenario 3: Regular User Submits Kid Application(s)

- Once the popup has closed, the Regular User will be able to view their list of Applications on the Regular User dashboard.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as example@email.com

Applications:

KID Kid App 1 Kyle the Kid

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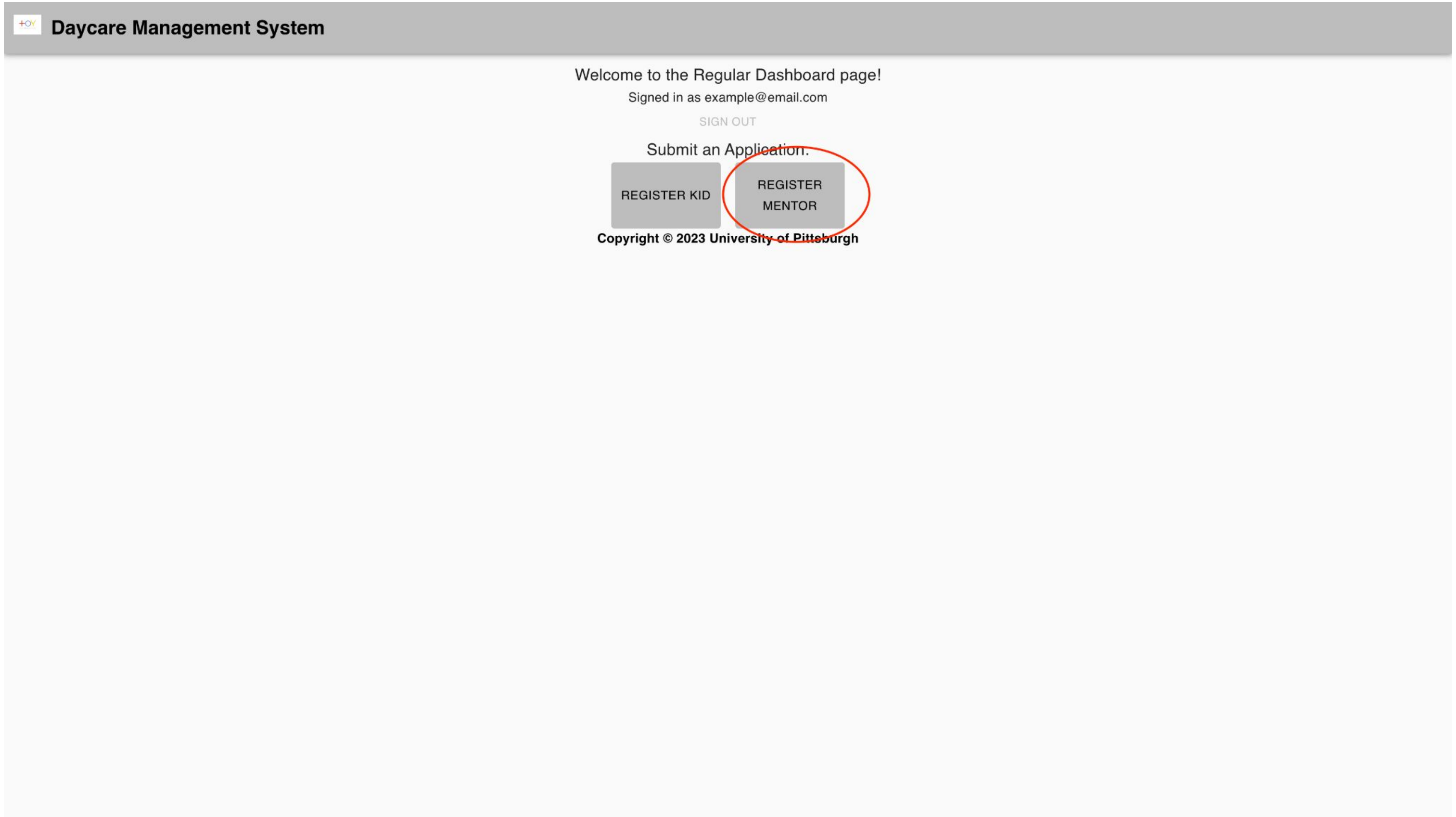
Prototype Detailed Scenarios

Scenario 4: Regular User Submits Mentor Application

- As a Regular User viewing the Regular User dashboard, Click “Register Mentor” button.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as example@email.com

Submit an Application:

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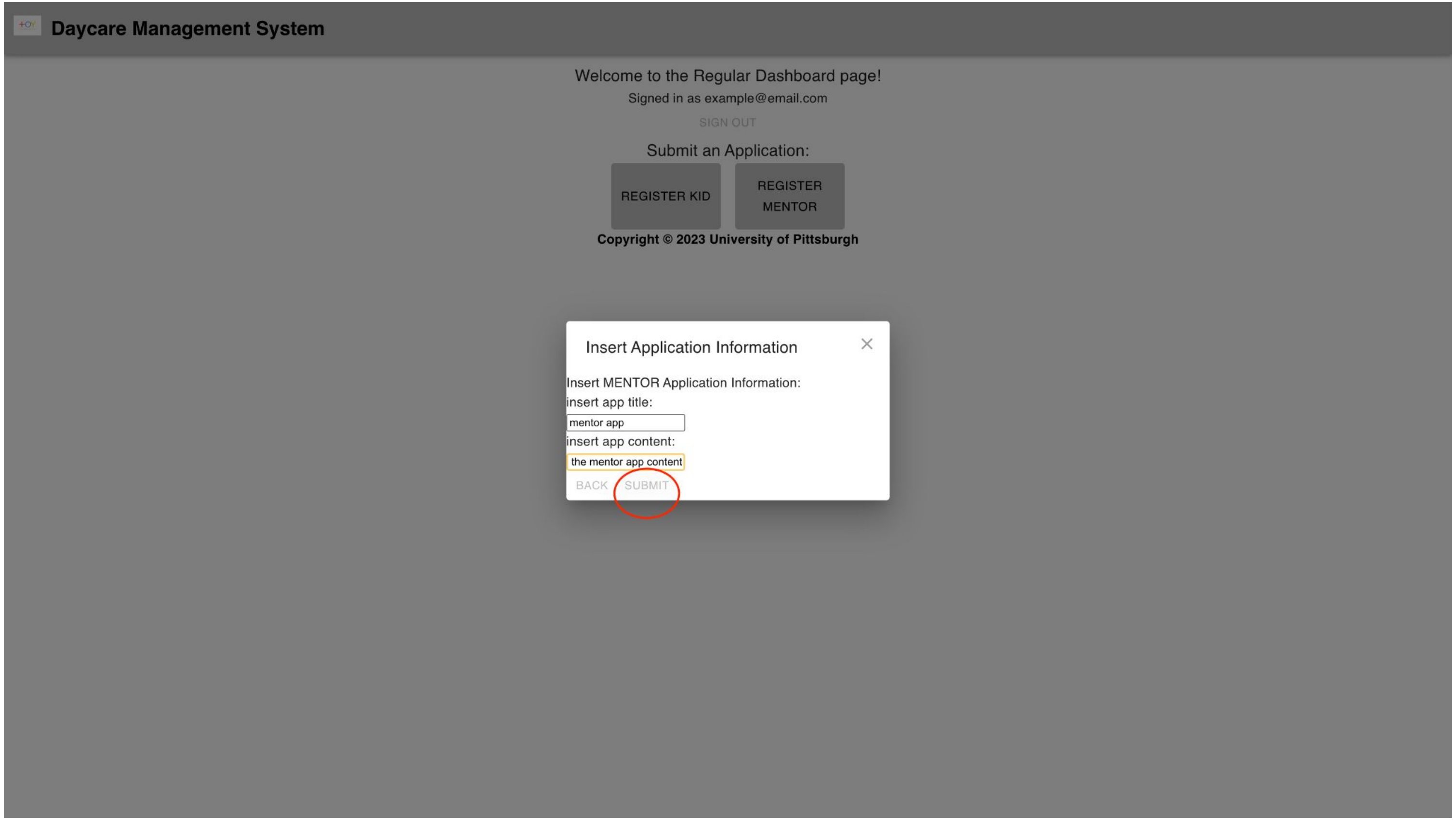
Prototype Detailed Scenarios

Scenario 4: Regular User Submits Mentor Application

- Once the Insert App Info popup has displayed, insert the required information. Then, click the “Submit” button



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as example@email.com

SIGN OUT

Submit an Application:

REGISTER KID | REGISTER MENTOR

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Insert Application Information

Insert MENTOR Application Information:

insert app title: mentor app

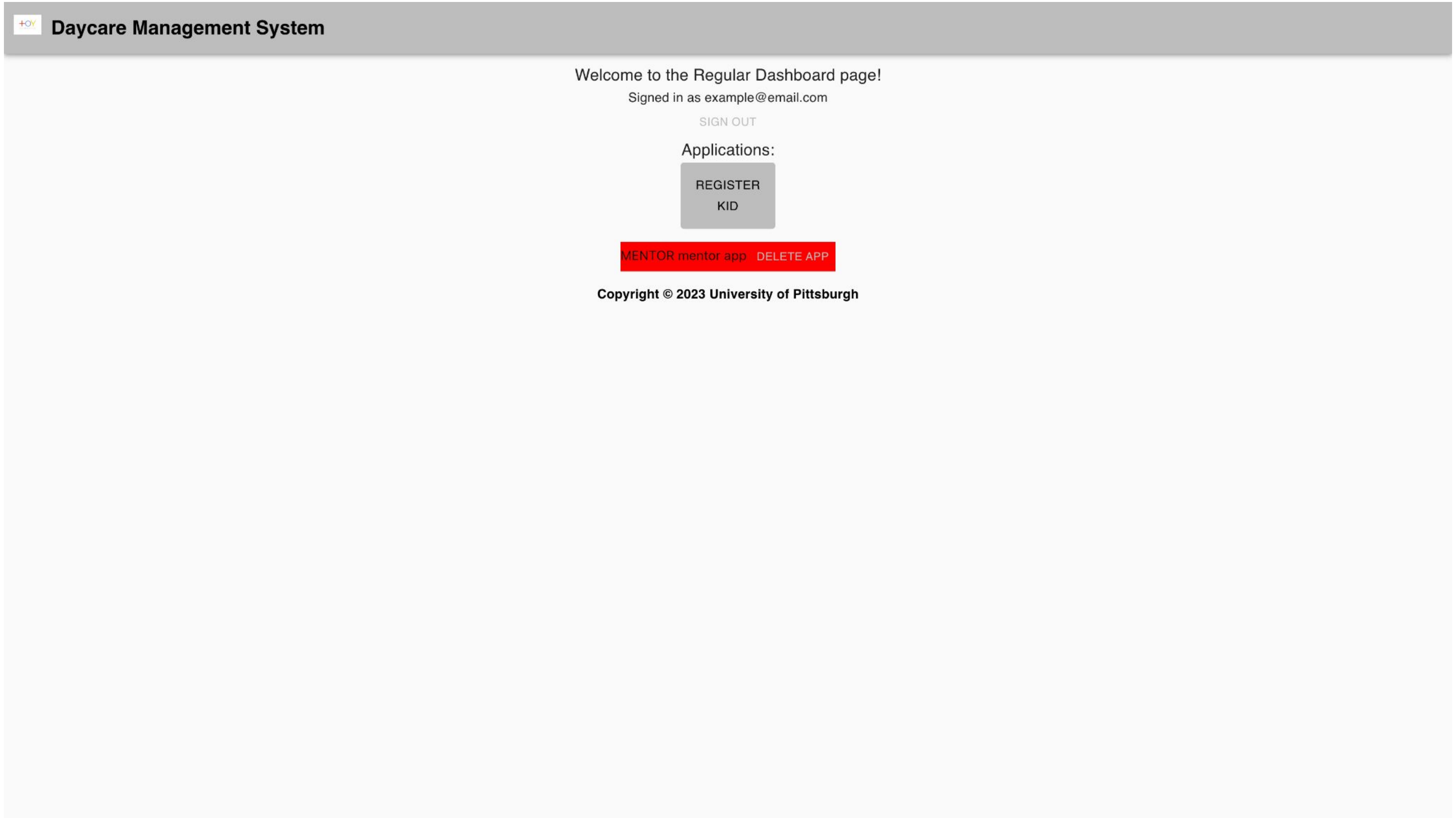
insert app content: the mentor app content

BACK SUBMIT

Prototype Detailed Scenarios

Scenario 4: Regular User Submits Mentor Application

- Once the popup has closed, the Regular User will be able to view their list of Applications on the Regular User dashboard. Notice that the "Register Mentor" button has become hidden because the Regular User may only submit one Mentor Application.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as example@email.com

Applications:

MENTOR mentor app

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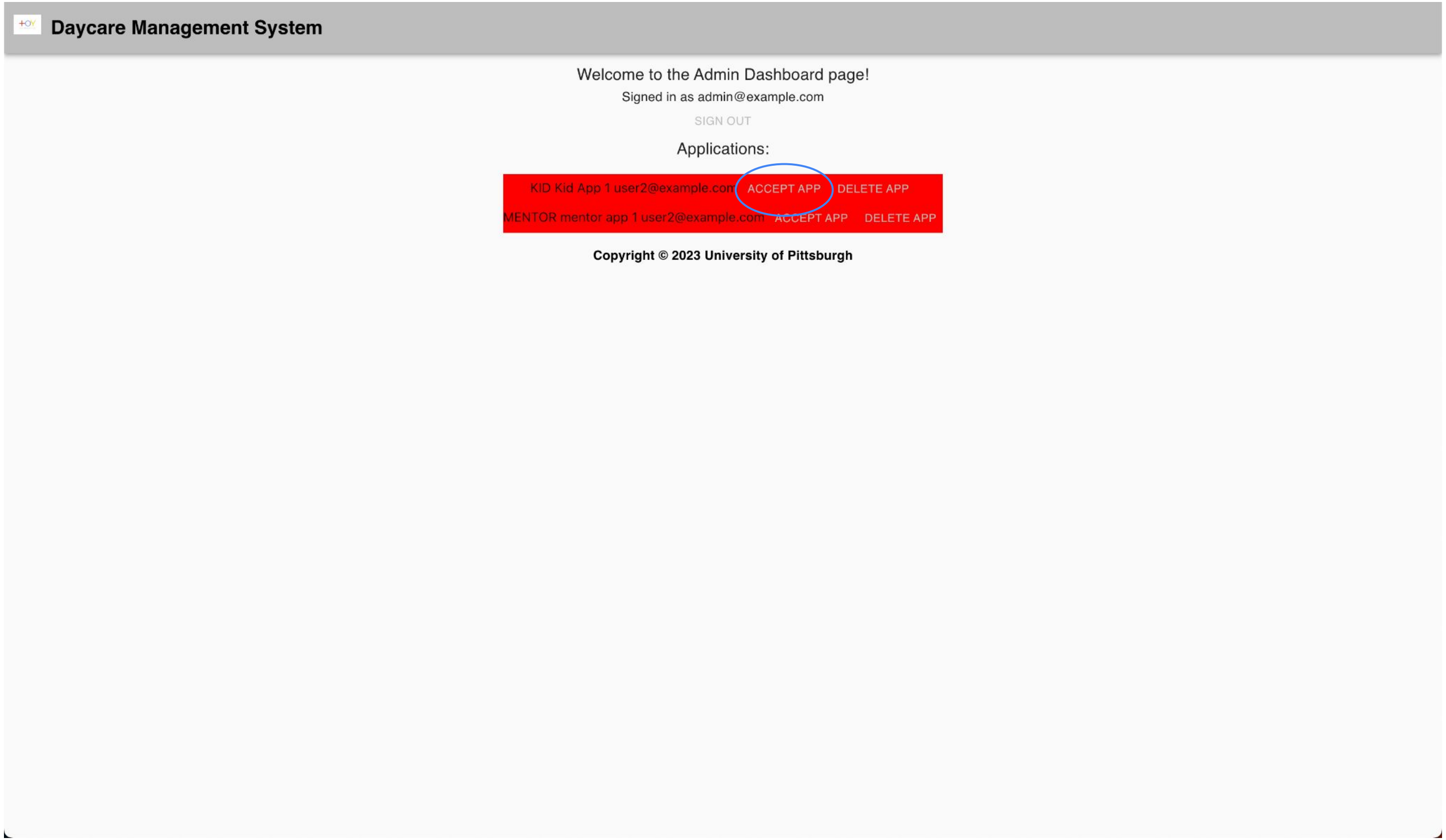
Prototype Detailed Scenarios

Scenario 5: Admin User Toggles Application Status Between Approved/Denied (Insert/Remove Mentor Or Kid From System)

- Once a Regular User has submitted any type of Application, an Admin User will be presented with all of the available Applications in the Admin User Dashboard. To accept a specific Application, the Admin User may click the “Accept App” button.



Daycare Management System

Welcome to the Admin Dashboard page!

Signed in as admin@example.com

Applications:

KID Kid App 1 user2@example.com

MENTOR mentor app 1 user2@example.com

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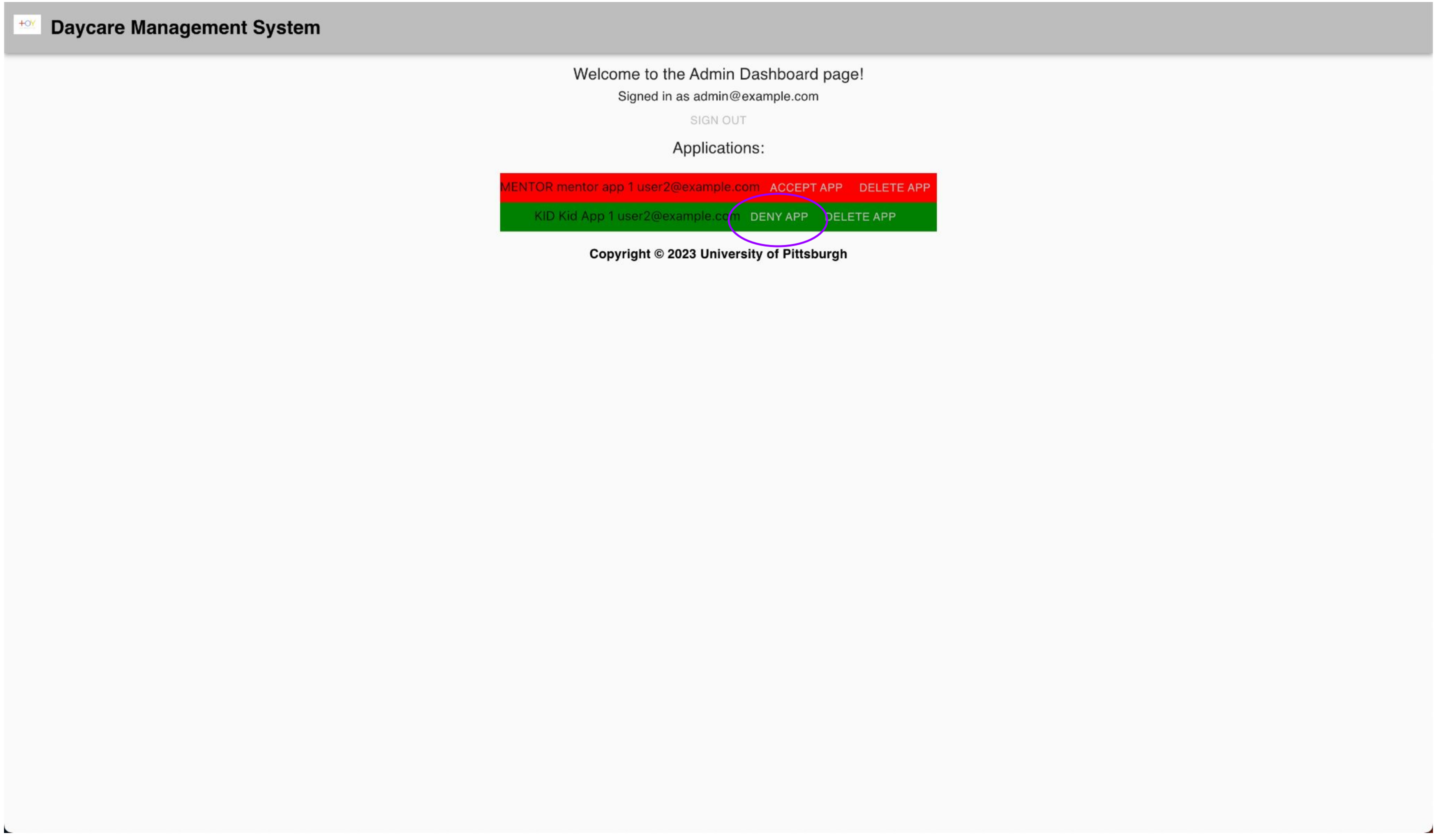
Prototype Detailed Scenarios

Scenario 5: Admin User Toggles Application Status Between Approved/Denied (Insert/Remove Mentor Or Kid From System)

- After the Admin User clicks the “Accept App” button, the specific Appointment will change state and color (from red=denied to green=approved), which indicates a successful update to approved. The Admin User may now click the “Deny App” button to toggle back.



Daycare Management System

Welcome to the Admin Dashboard page!

Signed in as admin@example.com

SIGN OUT

Applications:

MENTOR mentor app 1 user2@example.com ACCEPT APP DELETE APP

KID Kid App 1 user2@example.com DENY APP DELETE APP

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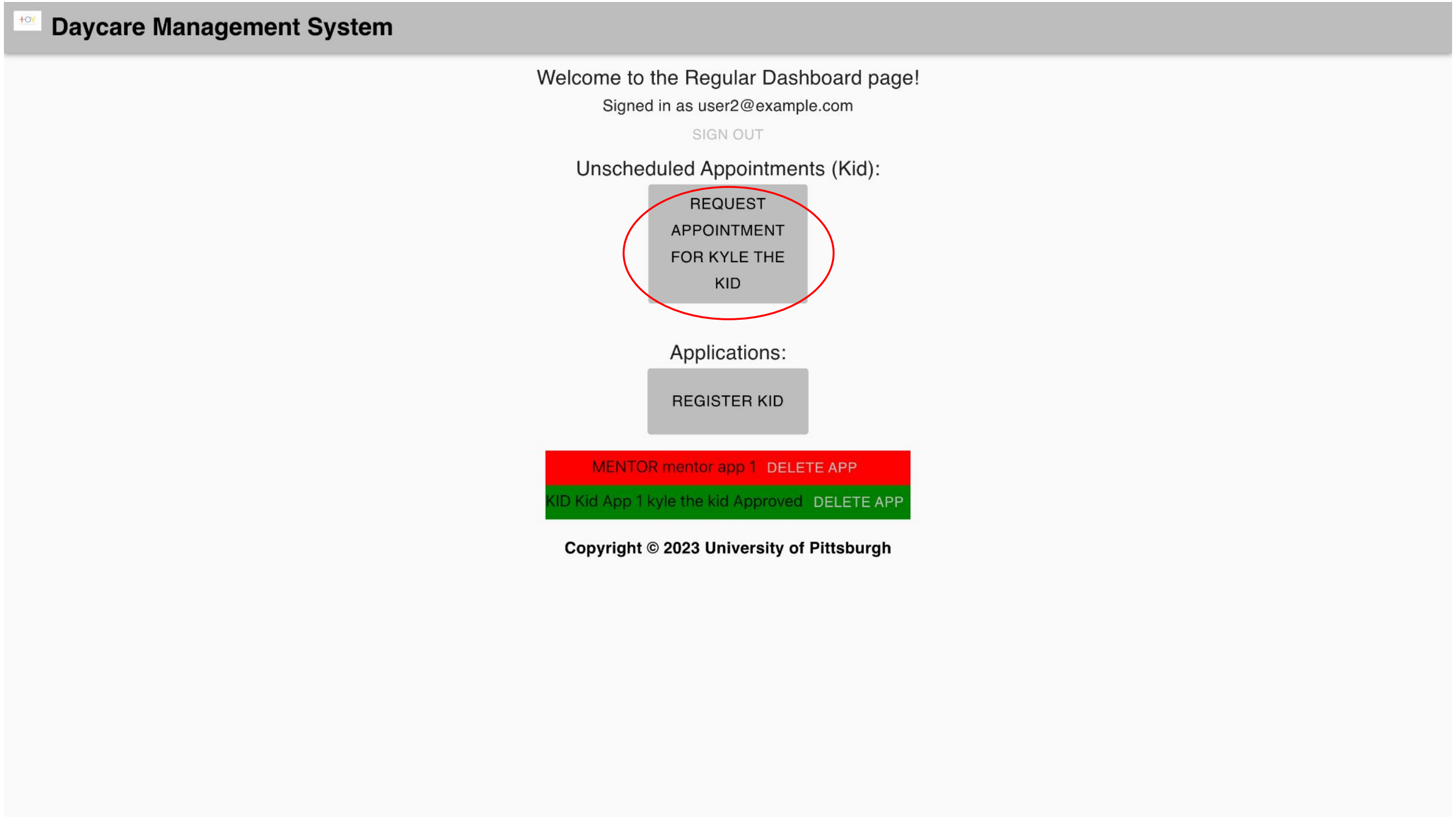
Prototype Detailed Scenarios

Scenario 6: Regular User With Kid Submits Unscheduled Appointment

- After an Admin User has approved a Regular User’s Kid Application, the Regular User will be presented with their approved Application state, and a “Request Appointment” button for the Kid that was approved. The Regular User will click this button.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as user2@example.com

Unscheduled Appointments (Kid):

Applications:

MENTOR mentor app 1 DELETE APP

KID Kid App 1 kyle the kid Approved DELETE APP

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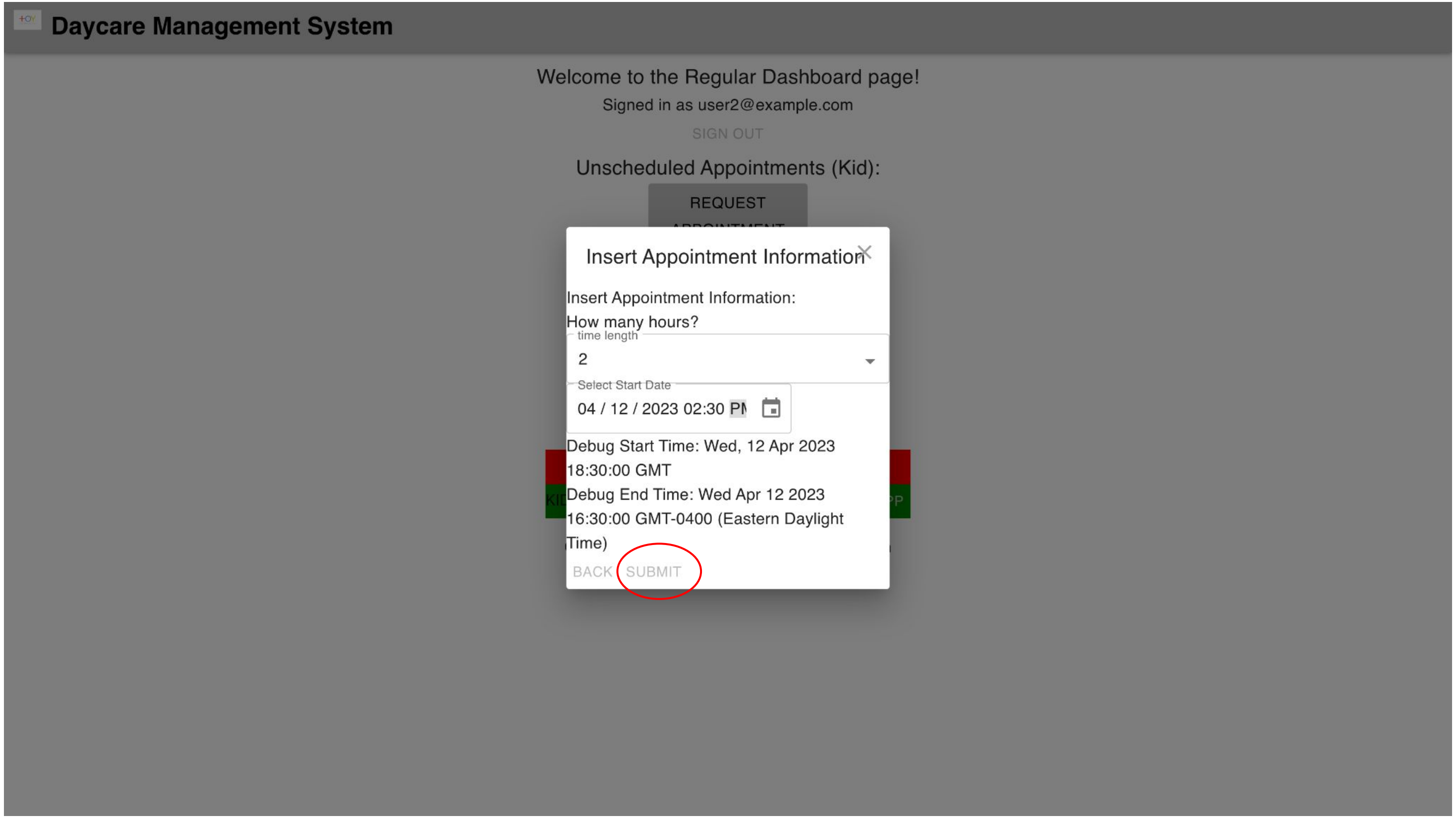
Prototype Detailed Scenarios

Scenario 6: Regular User With Kid Submits Unscheduled Appointment

- Once the Insert Appointment Info popup has displayed, insert the required information. Then, click the “Submit” button



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as user2@example.com

Unscheduled Appointments (Kid):

Insert Appointment Information

Insert Appointment Information:

How many hours?

time length: 2

Select Start Date: 04 / 12 / 2023 02:30 PM

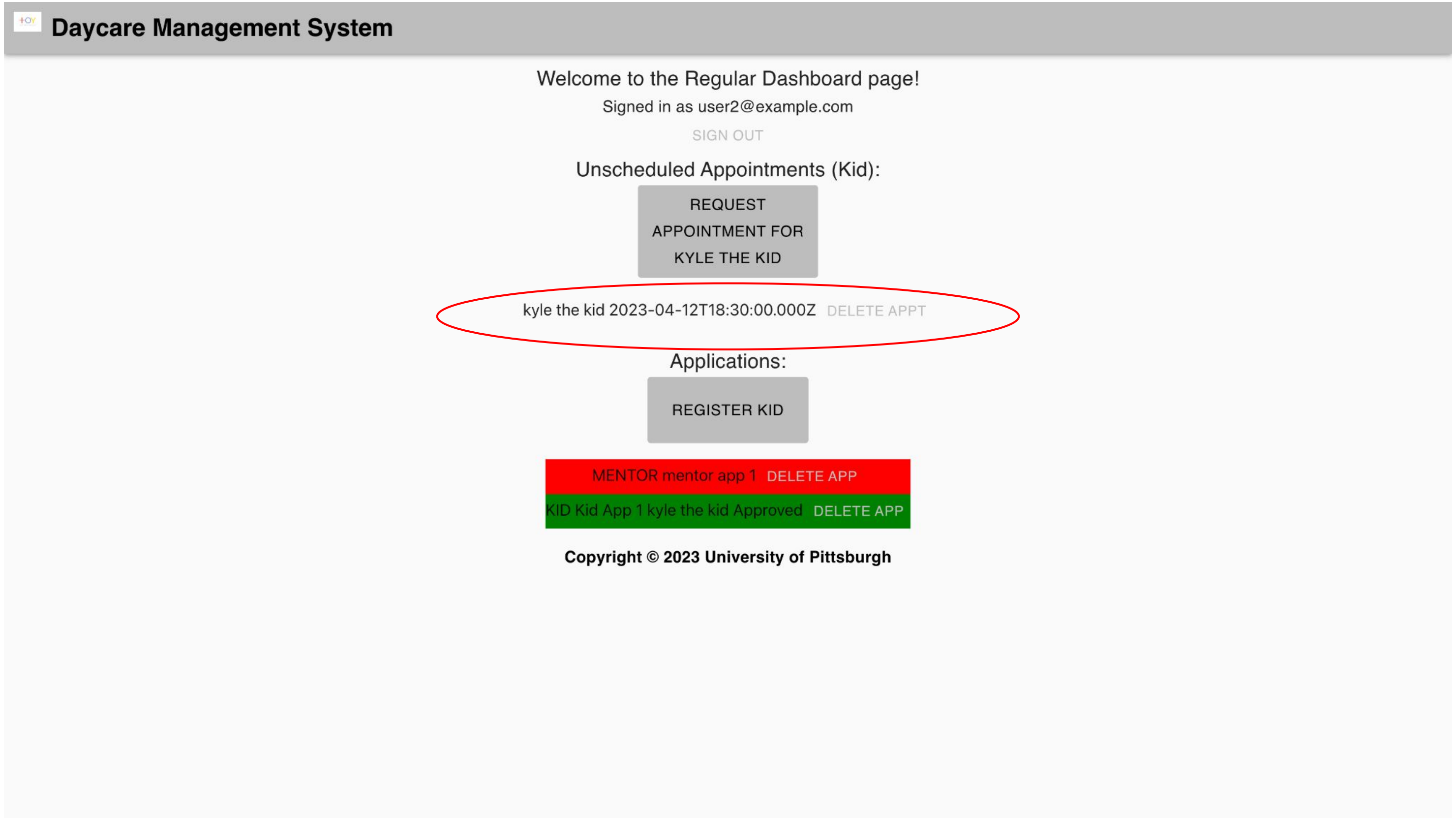
Debug Start Time: Wed, 12 Apr 2023 18:30:00 GMT

Debug End Time: Wed Apr 12 2023 16:30:00 GMT-0400 (Eastern Daylight Time)

Prototype Detailed Scenarios

Scenario 6: Regular User With Kid Submits Unscheduled Appointment

- Once the popup has closed, the Regular User will be able to view their list of Unscheduled Appointments on the Regular User dashboard.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as user2@example.com

Unscheduled Appointments (Kid):

kyle the kid 2023-04-12T18:30:00.000Z

Applications:

MENTOR mentor app 1

KID Kid App 1 kyle the kid Approved

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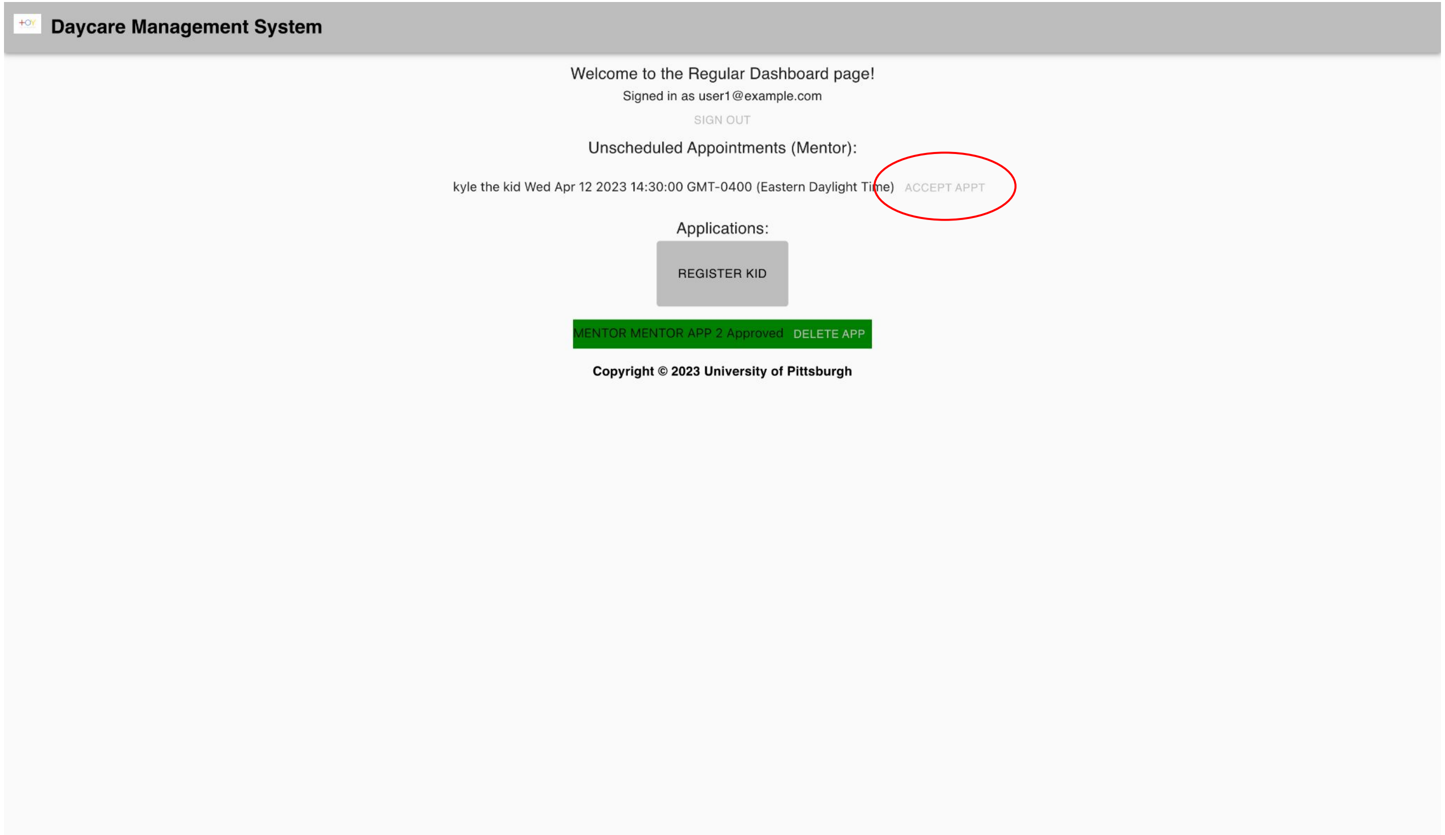
Prototype Detailed Scenarios

Scenario 7: Regular User As Mentor Accepts Unscheduled Appointment (Update Appointment Status To Scheduled)

- After a Regular User with Kid submits an Unscheduled Appointment, a different Regular User will be presented a list of all Unscheduled Appointments (barring any for their own Kid(s) in the system). The Regular User may click the “Accept” button for any of them.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as user1@example.com

Unscheduled Appointments (Mentor):

kyle the kid Wed Apr 12 2023 14:30:00 GMT-0400 (Eastern Daylight Time)

Applications:

MENTOR MENTOR APP 2 Approved

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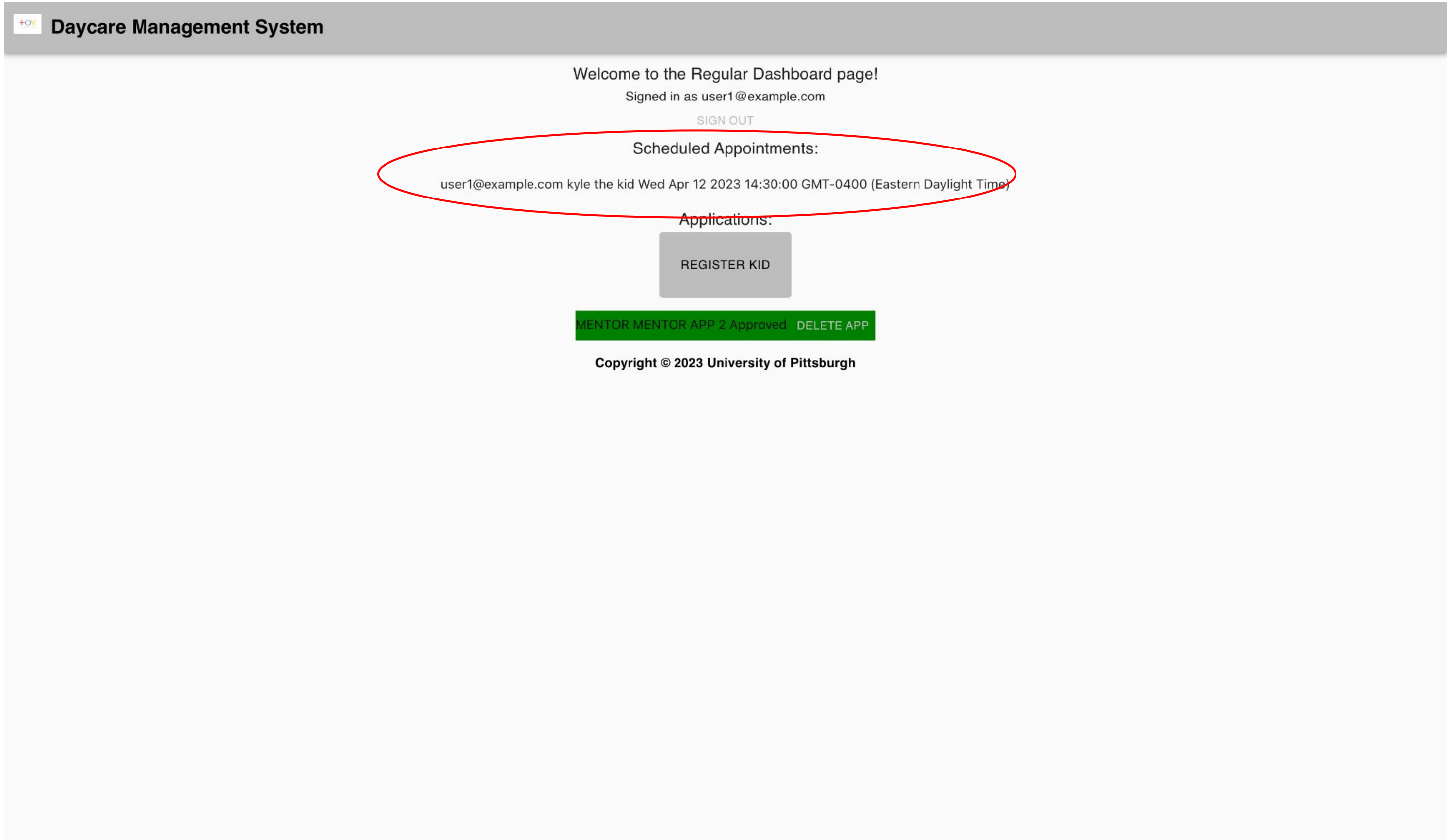
Prototype Detailed Scenarios

Scenario 7: Regular User As Mentor Accepts Unscheduled Appointment (Update Appointment Status To Scheduled)

- Once the “Accept” button has been clicked, the Unscheduled Appointment will be moved to the Scheduled Appointment(s) list and presented on the Regular User dashboard for all of the relevant Regular Users.



Daycare Management System

Welcome to the Regular Dashboard page!

Signed in as user1@example.com

Scheduled Appointments:

user1@example.com kyle the kid Wed Apr 12 2023 14:30:00 GMT-0400 (Eastern Daylight Time)

Applications:

MENTOR MENTOR APP 2 Approved

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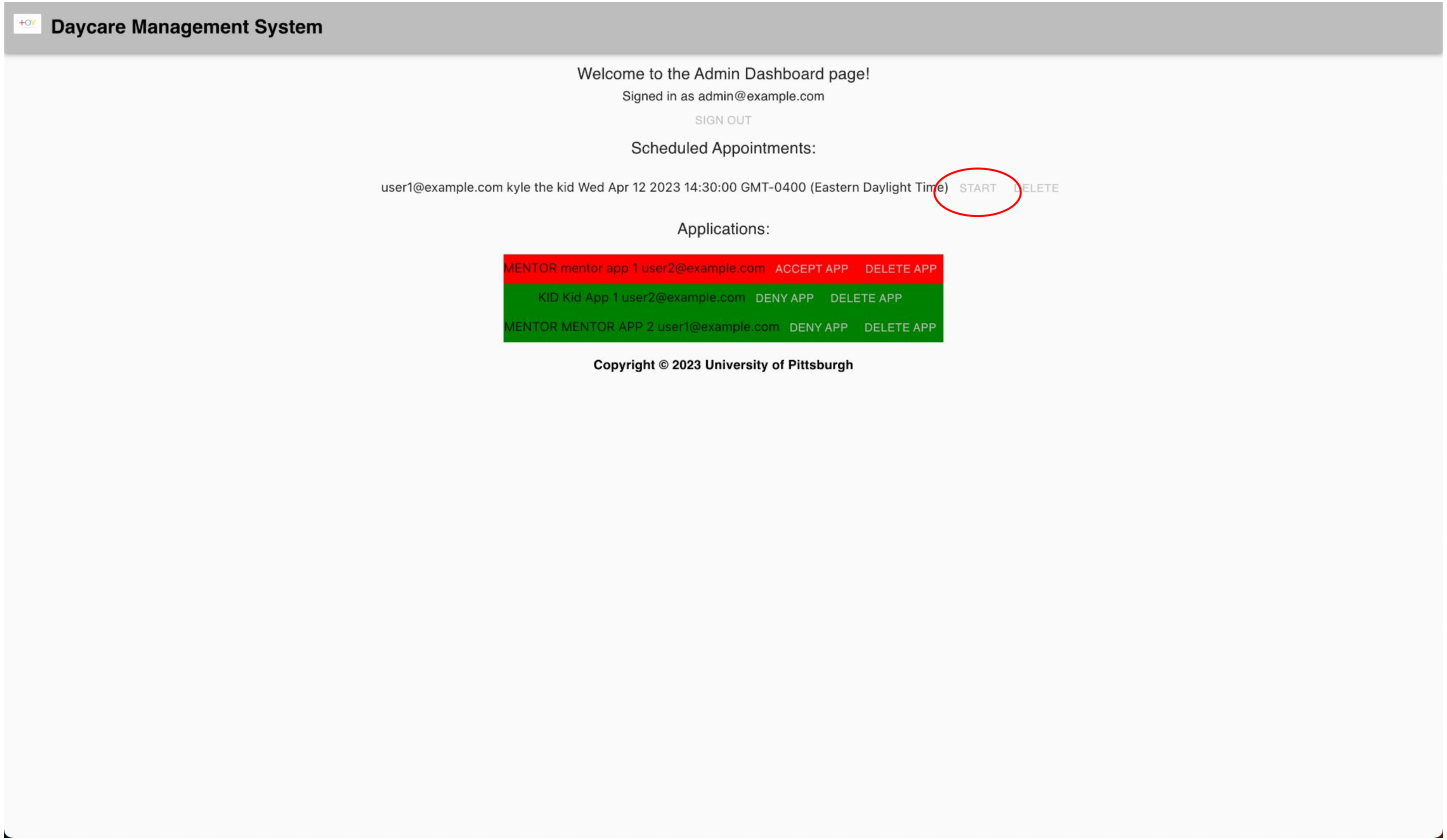
Prototype Detailed Scenarios

Scenario 8: Admin User Starts Scheduled Appointment (Update Appointment Status To Active)

- Once there are any available Scheduled Appointments in the system, a list of all Scheduled Appointments is displayed to an Admin User. The Admin User may select the “Start” button for a specific Appointment to begin.



Daycare Management System

Welcome to the Admin Dashboard page!

Signed in as admin@example.com

SIGN OUT

Scheduled Appointments:

user1@example.com kyle the kid Wed Apr 12 2023 14:30:00 GMT-0400 (Eastern Daylight Time) START DELETE

Applications:

MENTOR mentor app 1 user2@example.com ACCEPT APP DELETE APP

KID Kid App 1 user2@example.com DENY APP DELETE APP

MENTOR MENTOR APP 2 user1@example.com DENY APP DELETE APP

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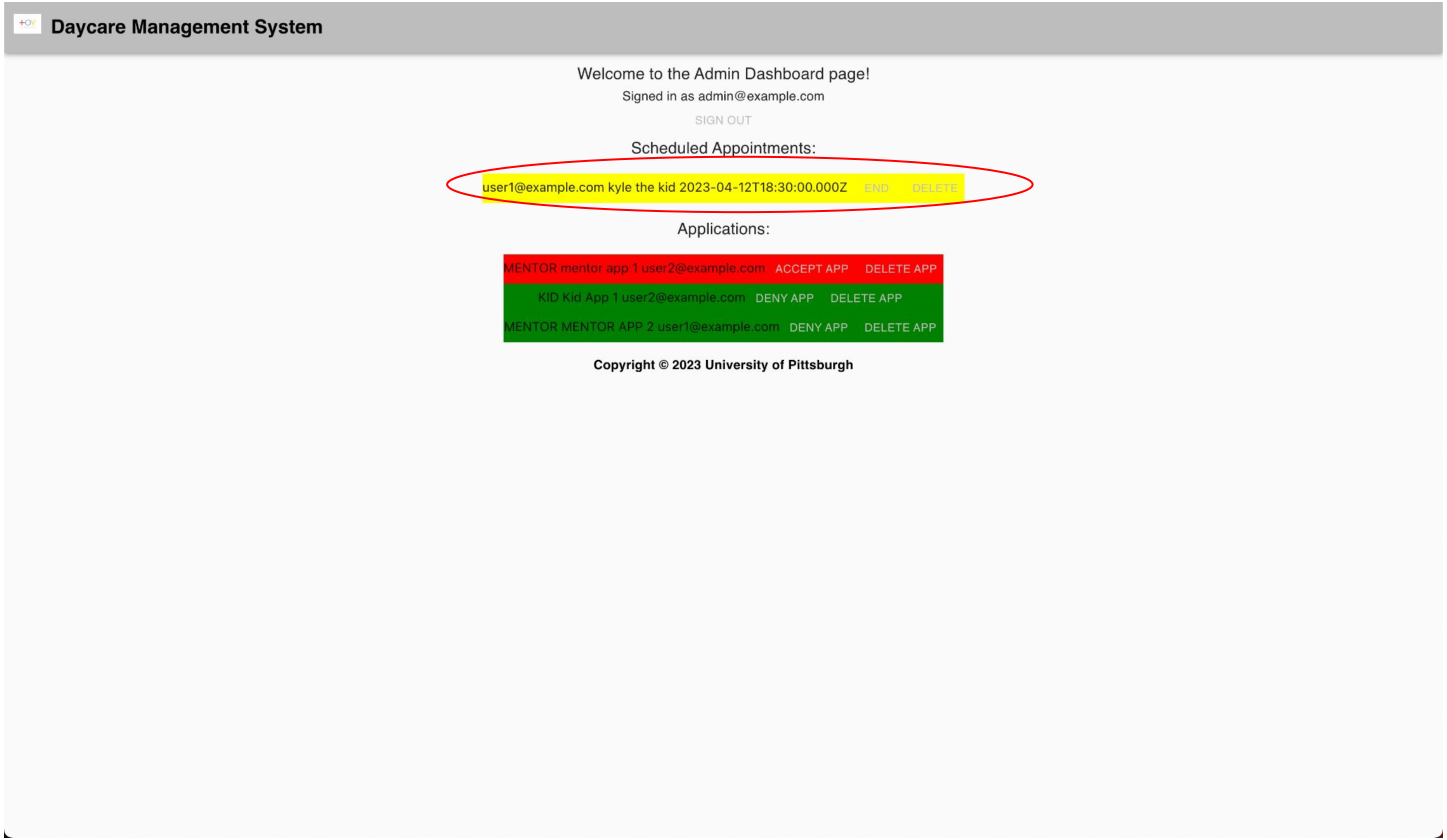
Prototype Detailed Scenarios

Scenario 8: Admin User Starts Scheduled Appointment (Update Appointment Status To Active)

- Once the “Start” button has been clicked, the Scheduled Appointment state will be updated and color changed (to yellow), which will be present for all of the relevant Users.



Daycare Management System

Welcome to the Admin Dashboard page!

Signed in as admin@example.com

SIGN OUT

Scheduled Appointments:

user1@example.com kyle the kid 2023-04-12T18:30:00.000Z END DELETE

Applications:

MENTOR mentor app 1 user2@example.com ACCEPT APP DELETE APP

KID Kid App 1 user2@example.com DENY APP DELETE APP

MENTOR MENTOR APP 2 user1@example.com DENY APP DELETE APP

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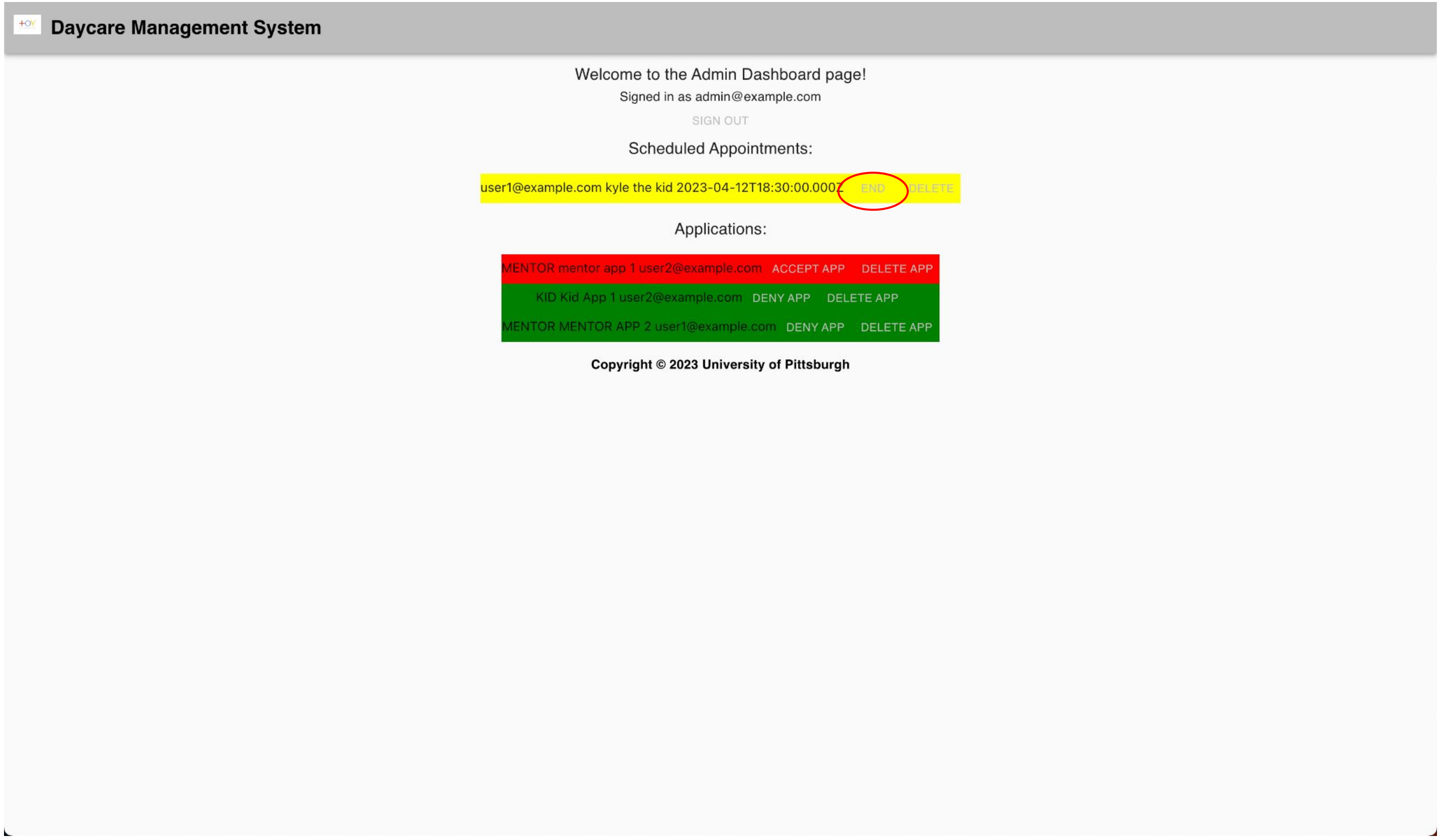
Prototype Detailed Scenarios

Scenario 9: Admin User Concludes Scheduled Appointment (Update Appointment Status To Inactive)

- Once there are any available Scheduled Appointments that are also active in the system, an Admin User will be able to view them in the list of Scheduled Appointments. The Admin User may select the “End” button for a specific Appointment to conclude.



Welcome to the Admin Dashboard page!

Signed in as admin@example.com

Scheduled Appointments:

user1@example.com kyle the kid 2023-04-12T18:30:00.000Z

Applications:

MENTOR mentor app 1 user2@example.com

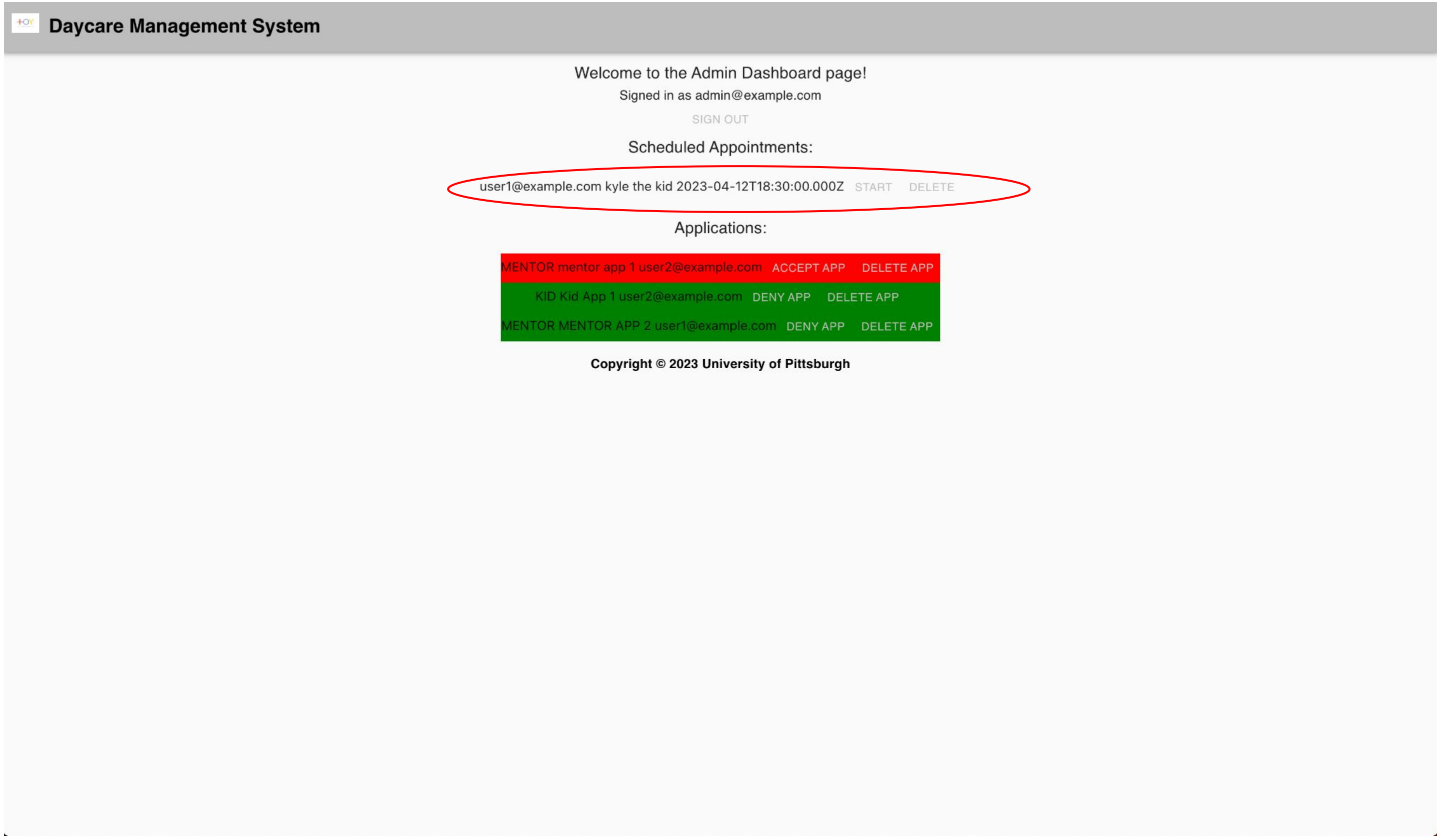
KID Kid App 1 user2@example.com

MENTOR MENTOR APP 2 user1@example.com

Prototype Detailed Scenarios

Scenario 9: Admin User Concludes Scheduled Appointment (Update Appointment Status To Inactive)

- Once the “End” button has been clicked, the Scheduled Appointment state will be updated and color changed (to transparent), which will be present for all of the relevant Users.



Daycare Management System

Welcome to the Admin Dashboard page!

Signed in as admin@example.com

SIGN OUT

Scheduled Appointments:

user1@example.com kyle the kid 2023-04-12T18:30:00.000Z START DELETE

Applications:

MENTOR mentor app 1 user2@example.com ACCEPT APP DELETE APP

KID Kid App 1 user2@example.com DENY APP DELETE APP

MENTOR MENTOR APP 2 user1@example.com DENY APP DELETE APP

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