

```

        every list [date,[times]] in empties
    empties:
        the date in empties is the same as the date of the c
        make sure that we only effect times on the day the e
    if k[0] == evDate:
        l = 1
        # iterate through the times of k and change
        while l < len(k):
            # FIRST if the event is the same as
            if (j.sTime == k[l][0] and j.eTime == k[l][1]):
                k.remove(k[l])
                # drop l down by one as
                l-=1
            # THEN if the event li
            elif (j.sTime > k[l][0] and j.eTime < k[l][1]):
                temp = k[l][0]
                k[l][0] = j.sTime
                k[l][1] = j.eTime
                k.append(temp)
            # THEN if
            elif (j.sTime < k[l][0] and j.eTime > k[l][1]):
                temp = k[l][1]
                k[l][1] = j.eTime
                k.append(temp)
            #

```



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ECEN 404 Final Presentation

Team 3: Smart Scheduler

Collin Bennett, Nicholas Garde
Sponsor: Narasimha Annapareddy

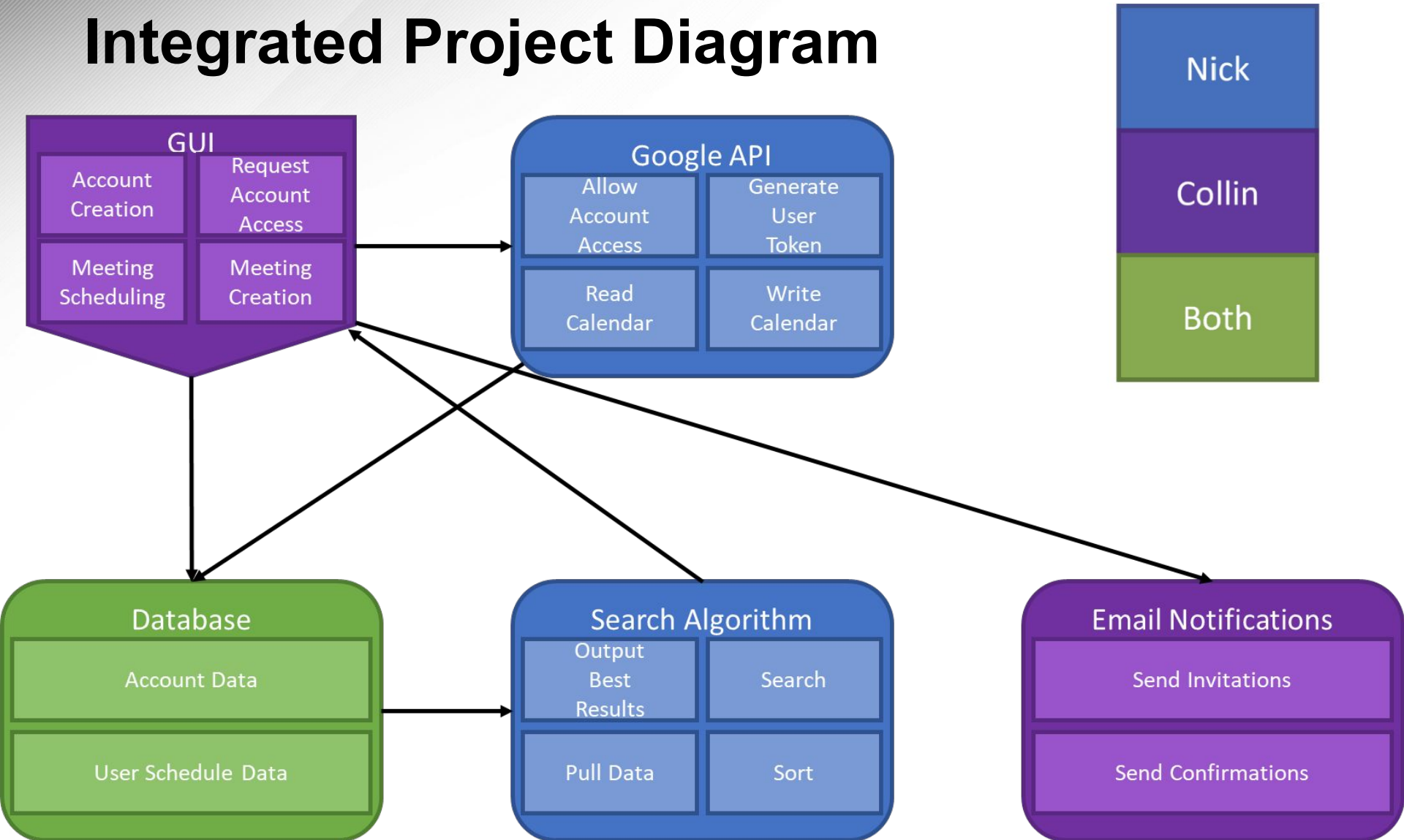
TA: Eric Robles

Problem Overview

Scheduling meetings can be very difficult, so we are simplifying the process.

[illegible]

Integrated Project Diagram





GUI Overview - Collin

- Register/Login to a new account
- Add contacts
- Create meetings
- Schedule meetings

Add meeting contacts

Search for a contact here. Search

Anya Forger	REQUIRED	OPTIONAL
Bill Watkins	REQUIRED	OPTIONAL
Collin - Personal	REQUIRED	OPTIONAL
Damian Desmond	REQUIRED	OPTIONAL

GUI Challenges & Validation

- Challenges
 - Hosting was difficult, initially used AWS, but switched to Heroku
- Validation

Specification	Requirements	Results
Page renders	Pages properly rendering with CSS	Pass
URL redirects	URL redirects do not result in errors	Pass
Ease of navigation	GUI is intuitive and easy to navigate	Pass
Page loading times	Pages can render in < 1 second	Pass



Database - Collin

- Reads user input from the GUI
- Writes data to the website
- Securely and anonymously stores user events and information

Site administration

AUTHENTICATION AND AUTHORIZATION

Groups [+ Add](#) [Change](#)

Users [+ Add](#) [Change](#)

SMART_SCHEDULER

Attendees [+ Add](#) [Change](#)

Conflicts [+ Add](#) [Change](#)

Contacts [+ Add](#) [Change](#)

Events [+ Add](#) [Change](#)

Meeting immediates [+ Add](#) [Change](#)

Meeting times [+ Add](#) [Change](#)

Meetings [+ Add](#) [Change](#)

Pending attendees [+ Add](#) [Change](#)

USERS

Profiles [+ Add](#) [Change](#)

Database Challenges & Validation

- Challenges:
 - Porting database from SQLite to a hosted Postgres solution took a significant amount of time
 - Bringing down server latency

Specification	Requirements	Results
User authentication	Database storing user account credentials	Pass
Reads	Proper data fetched	Pass
Writes	Proper data written	Pass
Edits	Proper data edited	Pass
Deletes	Proper data deleted	Pass
Latency	Data retrieval < 100ms	Pass



Email Notifications - Collin

- Send attendees meeting details
- Allow attendees to RSVP or decline
- Send attendees meeting creation confirmations



smartscheduleralerts@gmail.com

to me ▼

You have been invited to a meeting. Here are the details:

Meeting name: Demo Meeting

Description: Testing Functionality

Deadline: August 03, 2023

Duration: 3 hours and 30 minutes

Link/Location: Texas

To RSVP, click the following link:

localhost:8000/accept_meeting_google/57/46/accept

To decline, click the following link:

localhost:8000/decline_meeting/46/decline

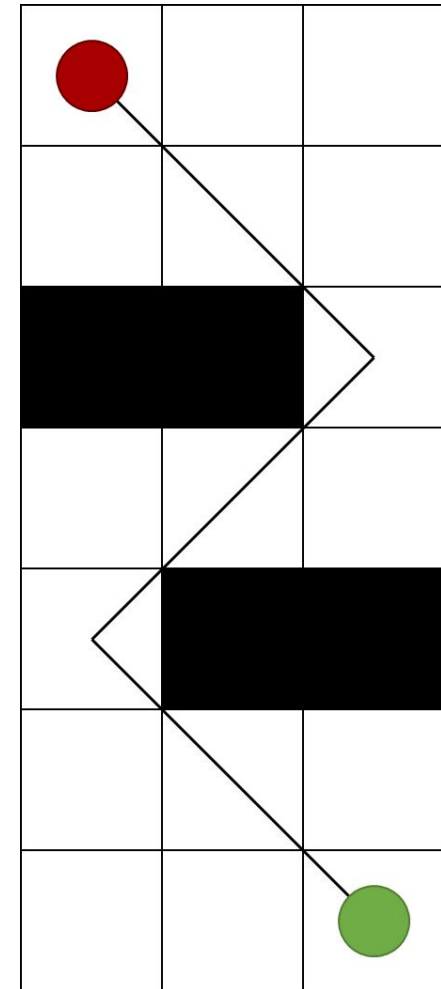
Email Challenges & Validation

- Challenges
 - Sendgrid email API was causing difficulties, so SMTP and Gmail are being used to send email instead.
- Validation

Specification	Requirements	Results
Email Structure	Formatting and structure correct	Pass
Email Data Passed	Correct data sent in each email with proper links	Pass
Sending Times	Emails send and receive in < 10 seconds	Pass

Search Algorithm

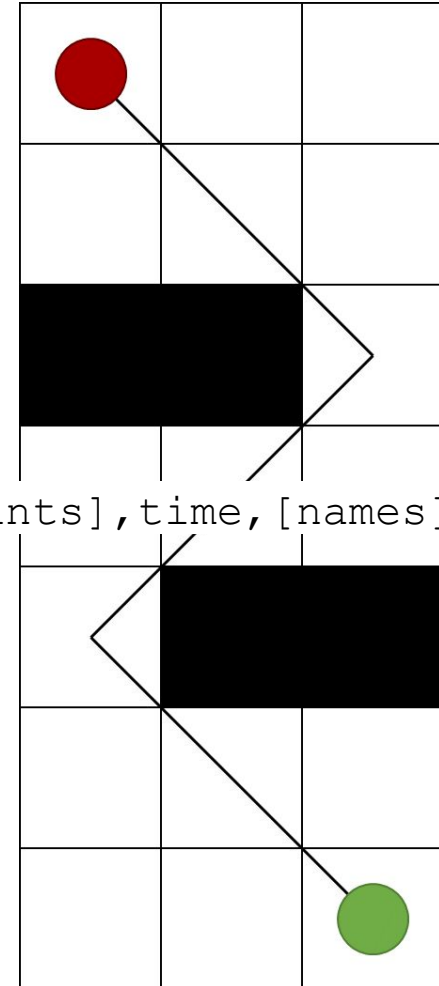
- Sorting
 - Calendar Data Structure
 - Time Zones
- Searching
 - $O(n)$ Time
- Scoring
 - Number of Conflicts
 - Number of Attendees
 - Priority



Search Algorithm

- Inputs
 - Database Query
- Outputs
 - Best Array

```
[[date,[scoreNumConflicts, scoreNumParticipants],time,[names]]]
```



Search Algorithm Challenges & Validation

- Challenges
 - Database Adjustments
 - Time Zone Integration

- Validation

Specification	Requirements	Results
Database Calls	Receives data from the database	Pass
Time Zones	Performs Time Zone conversions in 24h format	Pass
Scoring	Correct scores on conflicts, attendees, and priority	Pass
Results	Sends out expected array of best times	Pass

Google API

- Communication with Google Servers
- URL Generation
 - OAuth
- Token Generation
 - Fetch Token with Code



Google Calendar for Developers



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Google API

- Whitelisting

 Sign in with Google

Choose an account

to continue to

django-smart-scheduler.herokuapp.com



Nicholas Garde

ngarde2882@gmail.com



Nicholas Garde

ngarde2882@tamu.edu



Use another account

Google API Challenges & Validation

- Challenges
 - Web Hosted Changes
 - Additional Data Calls

- Validation

Specification	Requirements	Results
Sends User to OAuth	User is sent to authentication page	Pass
Receives Code	URL returns with code from google	Pass
Fetches Token	Uses code to generate a user token	Pass
Pulls User Data	Connects to user's account, places events on database	Pass



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Integrated System Results

- Total run-through of system operation



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Register/Login

Register

First name

Patrick

Last Name

Bateman

Username

americanpsycho

Email

pbateman@pierceandpierce.com

Password

Confirm Password

SIGN UP

Already Have An Account? Sign In

Log In

Username

collinbennett

Password

LOGIN

Need an Account? Sign Up Now



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Contact Creation

Create a Contact

Contact name

Paul Allen

Contact email address

paulallen@pierceandpierce.com

CREATE CONTACT



Meeting Creation

Current meeting contacts

Collin - Personal has been added

Bill Watkins has been added

Loid Forger has been added

RETURN TO CONTACTS PAGE

Meeting Details

Meeting name

Dinner at Dorsia

Meeting description (Optional)

Pulled a few strings and got a reservation

Meeting start

11/14/2022

Meeting deadline

11/21/2022

Duration - Hours

2

Duration - Minutes

00

Meeting link/location (Optional)

Dorsia, New York


CREATE MEETING



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Google API Authentication - Meeting Creator


 Sign in with Google

Choose an account

to continue to

django-smart-scheduler.herokuapp.com

 Collin Bennett
collinbennett@tamu.edu

 Use another account

English (United States) ▼

[Help](#)

[Privacy](#)

[Terms](#)



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Attendee RSVP

Dinner at Dorsia Invitation  Inbox x



smartscheduleralerts@gmail.com

to me ▼

You have been invited to a meeting. Here are the details:

Meeting name: Dinner at Dorsia

Description: Pulled a few strings and got a reservation.

Deadline: November 21, 2022

Duration: 2 hours and 0minutes

Link/Location: Dorsia, New York

To RSVP, click the following link:

https://django-smart-scheduler.herokuapp.com/accept_meeting_google/288/111/accept

To decline, click the following link:

https://django-smart-scheduler.herokuapp.com/decline_meeting/111/decline

You have successfully RSVP'd!



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Schedule Meeting

Dinner at Dorsia

Monday, November 14, 2022 4:00 pm

[FINALIZE MEETING](#)

Tuesday, November 15, 2022 10:00 am

[FINALIZE MEETING](#)

Tuesday, November 15, 2022 10:15 am

[FINALIZE MEETING](#)

Tuesday, November 15, 2022 10:30 am

[FINALIZE MEETING](#)

Tuesday, November 15, 2022 10:45 am

[FINALIZE MEETING](#)

[RETURN TO SCHEDULING](#)



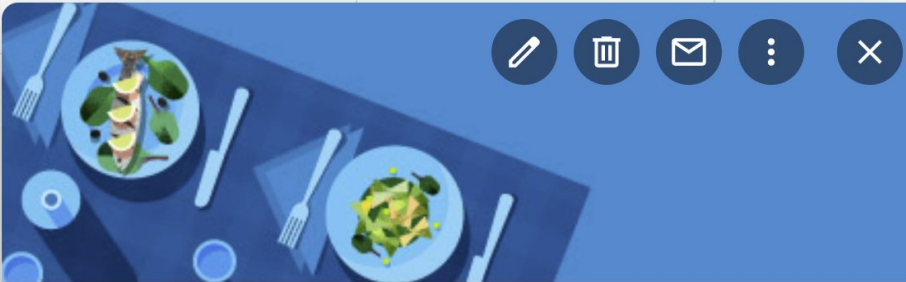
Created Event

7

14

4pm Dinner at Dorsia

21



Dinner at Dorsia

Monday, November 14 · 4:00 – 6:00pm

Take meeting notes

Start a new document to capture notes

Dorsia, New York

Pulled a few strings and got a reservation.

10 minutes before

Collin Bennett



Common Use Scenarios

Use-Scenario	GUI Validation	API Validation	Search Algorithm Validation	Database Validation	Email Validation
One Host, One Attendee, Empty Calendars	Pages and information rendered without error	Data sent and received	Generating correct/expected results	Proper writes and deletes	Correct information and working links sent
One Host, Eight Attendees, Empty Calendars	Pages and information rendered without error	Data sent and received	Generating correct/expected results	Proper writes and deletes	Correct information and working links sent
One Host, One Attendee, Full Calendars	Pages and information rendered without error	Data sent and received	Generating correct/expected results	Proper writes and deletes	Correct information and working links sent
One Host, Eight Attendees, Full Calendars	Pages and information rendered without error	Data sent and received	Generating correct/expected results	Proper writes and deletes	Correct information and working links sent



Conclusions - Issues

- Web Hosted API issues
 - More connections between GUI and API
- Framework Changes
 - Associated Database Changes
- Added scoring conditions
 - More API calls to find additional data

Conclusions - Current Status

- Web Hosted and Online
- Deletes User Tokens Unless Granted Permission
- Requires Whitelisted Emails
- Integration/Test/Validation Complete





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Questions?