EE/CprE/SE 492
Iowa State AI Schedule Companion
Weekly Report #2
Friday, September 6 – Thursday, September 19, 2024

Group number: ssdec24-08
Client: Koby Fowler
Faculty Advisor: Abraham Aldaco
Team Members:

Koby Fowler - Overall Application Leader
Chandrashekar Tirunagiri - Frontend Design Leader
Raghuram Guddati - Backend Design Leader
Jacob Paustian - Artificial Intelligence Research Leader
Christian Deam - Meeting Manager
Anna Huggins - Team Manager/Communicator

Weekly Summary

On September 16th, our team met again to discuss what each member should do. As well we (more formally) split up into groups (frontend, backend, AI) to work on those specific components. Now, we move forward to complete our individual tasks to complete our united goal.

Past Week Accomplishments

Koby Fowler

- Worked on integrating Google Maps API to get building locations and distances automatically
- Established contact with Iowa State's web development team
- Created a ticket with the solution center to obtain Workday API access for the team
- Noted that the team will be the first engineering team to integrate Workday into an application, which may lead to longer implementation time

Chandrashekar Tirunagiri

- Raghu and I have successfully integrated the front end with the backend of our AI Scheduling project. The login and sign-up features are working flawlessly. Initially, we stored the uploaded degree audit as a string in the database, thinking it would be sufficient. However, after our team discussion, we decided to parse the degree audit and store it in tables for a more structured format, making it easier for the AI to process and understand.

Raghuram Guddati

- The login and sign-up features have been created successfully by Chan and me, guaranteeing safe user authentication and easy account setup. In addition, we've created a connection between the Next.js-developed frontend and the pgAdmin-built backend to facilitate data transfer between the two layers. The data management process is now streamlined since we can now extract pertinent data from PDF files and deposit it straight into my bespoke database tables in a byte 64 format.
- We are currently working on the project's next phase, which involves translating these PDFs' Base64-encoded data into legible, human-readable English.

Jacob Paustian

- Experimented with On-the-fly updates to the AI's data source. It is important that we can upload custom info to the AI service it is running. This would be used for users uploading their own documents. This is not presently working, but I think it can be soon.
- Experimented with the capabilities of pdf-input for the AI. Ultimately I no longer like this as a strategy going forward because of the inconsistency of extracting data from the pdf. More clustered and visually designed PDFs are very difficult to read correctly.
  - Because of this, I have been talking with Chan and Raghu, who work front and backend, respectively. Raghu, in particular, I have been talking about better uploading this data to the AI from our backend. We do not have a good solution yet, so we may need to have a fallback plan where the frontend has an entire

setup process. However, this would not be ideal given how nice it would be as a user just to be able to upload your degree audit.
- In addition, I have been experimenting with the new version of GPT that I paid for myself. Despite this upgraded tier 1 version being leaps and bounds better for my service thus far, I still have issues with context windows. Thus, I will look into ways to reduce any AI instance's necessary context window.

Christian Deam

- Was part of the team meeting to get an idea of how our app was faring thus far
- Met with Anna to discuss frontend business and what to specifically do first
- Began creation of the user info page (shows information about the user, like the user profile in Workday)

Anna Huggins

- Attended the team meeting to get a full update on the state of our application and our team's upcoming objectives
  - Generally, we are still working to connect more between the frontend and backend with our AI, but we do at least have one database set up to work with logins
- Met with Christian to discuss frontend design changes and individual efforts
- Began research into making pages vertical with the ability to scroll to more informational components

Individual Contribution Tracker

Name	Individual Contributions	Hours this Week	Cumulative Hours this Semester (492)	Total Cumulative Hours (491/492)
Raghuram Guddati	- Successfully got the login database connected with the frontend	10.0	14	60.0
Christian Deam	- Frontend meeting with Anna - Began creation of user info page	2.0	2	26.0
Jake Paustian	- Talked with Chan and Raghu about completing a roundtrip between our services - More research into PDF input	3.5	8.5	46
Anna Huggins	- Frontend meeting with Christian - Began research into creating vertical page layouts (for the homepage)	2.0	4.0	44.5
Chandrashekar Tirunagiri	- Front & back end integration	10.0	13.0	60.0
Koby Fowler	- Contacted ISU's web development team - Attempted to obtain access to Workday API	8.0	13.0	68.0

Pending Issues
N/A.

Summary of Weekly Meeting(s)
Team Meeting - September 16th, 2024

- Call to Order
  - A team meeting to review: current project status, upcoming meetings, and update project objectives.
- Roll Call
  - Present
    - Chandrashekar Tirunagiri
    - Raghuram Guddati
    - Jacob Paustian
    - Anna Huggins
    - Christian Deam
  - Absent
    - Koby Fowler
- Outcomes
  - Project Status Discussion
    - Sign-up/Login is working - backend is connected to frontend
    - Frontend - web pages have minor background updates
    - Backend - can take uploaded PDFs
  - Project Direction
    - Primary goals:
      - Frontend
        - Update background/page navigation
      - Backend
        - Connect AI to frontend/backend
        - PDF data parsing
      - Scale back on additional features and focus efforts on primary application functionality
        - i.e.) AI to generate schedules, users can store schedule information, upload class information, etc.
  - Upcoming Meetings
    - Faculty Advisor: TBD
    - Secondary Advisor: TBD
    - Professor Shannon: 3121a SIC - Friday, September 20th @11:30am
    - Front-end: MS Teams - Thursday, September 19th @11am

Frontend Design Meeting - September 19th, 2024

- Call to Order
  - Frontend meeting to identify individual objectives and overall design plan.
- Roll Call
  - Present
    - Anna Huggins
    - Christian Deam
  - Absent
    - N/A.
- Outcomes
  - Christian's Assignments
    - Create the User Info page
    - Add a general template for information pieces
  - Anna's Assignments
    - Correct the typo in the header menu of the home page (AI Schduler)
    - Research scroll ability for homepage; want to have more of a vertical layout
  - General:
    - Use Iowa State colors from: https://www.brandmarketing.iastate.edu/brand-elements/color-palette/

Plans for the Upcoming Week

Koby Fowler

- Continue working on Google Maps API integration for building locations and distances
- Follow up on the Workday API access request with the solution center
- Coordinate with team members to integrate the location data into the AI companion's decision-making process
- Research potential challenges and solutions for being the first engineering team to integrate Workday into an application

Chandrashekar Tirunagiri

- Will be researching on .xlsx library, which will parse the PDF to Excel and can get the data and store it in the tables.
- Will also be working on ingesting and better methods to do that.

Raghuram Guddati

- Will work with the .xlsx library to get meaningful words and classes from a PDF file.
- Will update and modify tables in PgAdmin to better store tables and their relationships.

Jacob Paustian

- In this next two-week sprint, Raghu, Chan, and I are going to attempt to complete a roundtrip from frontend to backend, backend to frontend, frontend to AI, and then finally AI to frontend.

Christian Deam

- Create the User Info page

Anna Huggins

- Continue research on web page verticality and scrolling in NextJS
- Update/move around the current "flip cards" on our home page
- Correct the typo in the homepage navigation bar