Project Spec: TripPin

General description of the project

TripPin is a web application that will allow users to map out places they have been to, provide the ability to plan for their vacation ideas and itineraries, and give ratings and reviews to different places they have visited. This app could also serve as a memory lane for users to remember their trips in the past.

This app was inspired by a real-life experience I have. Many times, friends and family have asked me about the past vacations I had over the years, and I couldn't recall much of the trip as it was a long time ago. At that point, I will try to look through my smartphone's gallery to find some photos, but that will take some time to scroll through, and I would also forget the names of the places I have been to. This app would provide a good context for users who have similar issues or want an easy way to look back at the trips that they had. They can also recommend points of interest to their friends and families for future vacations and rate and review the locations for the public to see.

With TripPin, users can interact with a map and look at different pins of places they have been to on their previous trips, add pictures and reviews to the site, and review other people's itineraries and past trips. We would be using mapping data from Mapbox API (https://www.mapbox.com/). TripAdvisor API (https://www.tripadvisor.com/developers) will provide data for user-generated reviews and ratings for tourist attractions, restaurants, hotels, and other points of interest. This being a web application, the GUI of the application will be on a website; if there is time, we can implement a mobile-friendly version of the website. We will first start the basic functionality on a CLI to ensure the main features can run reliably. We could offer an API for other apps to integrate our application if there is still additional time.

Task Vignettes (User activity "flow")

1. **Login and sign up**
   Barry wants to sign up or log in to the TripPin platform. He navigates to the website and clicks on login/register with his email and password. He can interact with the platform once he logs in/creates a new account.
   - Could integrate Google Authentication for single sign-on
   - How to save and protect users' email and passwords? What database to use?
   - Have a tutorial to onboard users using the program after the sign-up phase?

2. **Searching for places/points of interest around the world**

   Elizabeth wants to search for a restaurant in New York City she visited two weeks ago on TripPin and consider adding it to her trip log. She types in the restaurant name, which auto-completes with some suggestions as she types in each letter. She chooses the restaurant from the list of tips, which brings up a window with the restaurant name and some information (operating hours, rating, reviews, address). She can 'pin' the place to her trip log or a future itinerary.

   - What if the restaurant is a branch? How to differentiate between different branches?
   - Can use Google Places Auto-complete for the suggestion function
   - Other search options besides name (address, area where the place is?)
   - Browse options of locations

3. **Saving places/points of interest into their trip log**

   Tyler wants to save the hotel he visited on his trip to Japan in his trip log. He first searches the hotel with the hotel's name in mind. If this was his first trip log on the platform, he could create a trip log and name it, for example, "Japan Trip 2024". He clicks 'pin' to save the hotel to his trip log.

   - Option to remove the entire trip log or specific places in the trip log
   - How to store trip logs and points of interest in the user's profile?

4. **Leaving a rating and/or review to the point of interest (hotel, restaurants, tourist spots, etc.)**

   Madison went to a shopping mall in New Zealand a few days ago. She had a great experience there and had some recommendations for the mall owners, so she left a rating and review on the platform in hopes that the people in charge could see her recommendations and take action. She goes to her New Zealand trip log and finds the mall that she added. She clicks on the mall and clicks on leave a rating/review. She gave the mall four stars out of 5 and left a review, praising the mall's cleanliness and accessibility while providing a recommendation to include more stalls.

   - How to integrate TripAdvisor, Yelp, or Google Maps to see ratings/reviews?
   - How many recommendations or ratings to show on one page?

5. **Planning itinerary and sharing/recommending it to other users**

   Paul wants to plan for his trip to Sao Paolo in three months on the platform. He clicks on 'New Itinerary' and browses for top points of interest others recommend visiting when in Sao Paolo. He adds some restaurants and tourist sites he would love to visit during his trip. He clicks on 'share itinerary' and inputs his wife's email address. The plans are shared with his wife now; they can review and discuss them.
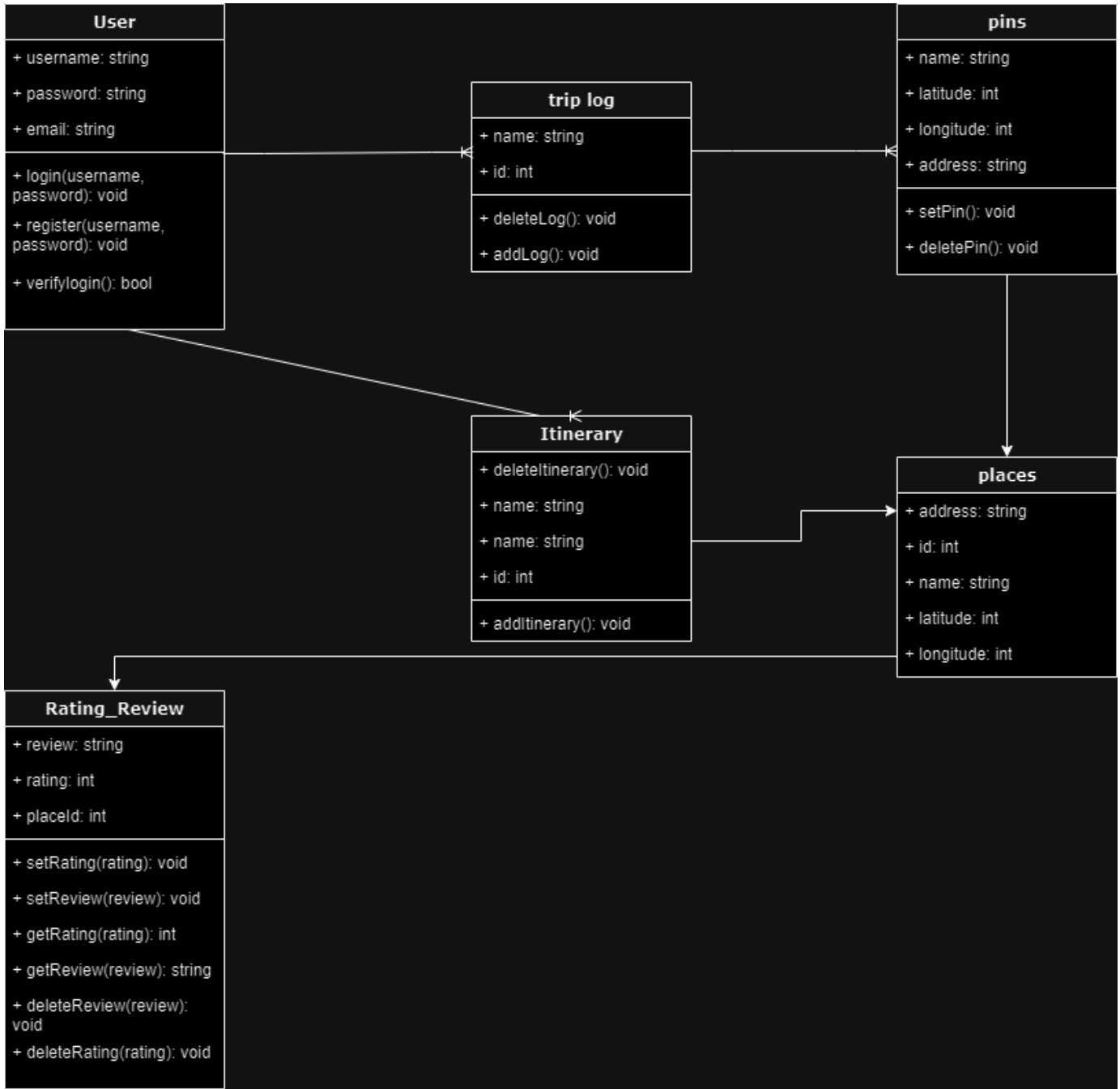
   - Have a way for friends/families to get onboarded to the platform when they get shared a link to the itinerary from someone.
   - Display top sites visited by people from TripAdvisor

6. **Interacting with a map with all their pins (points of interest)**

   Steve wants to explore the world map and see the pins of his past trip logs. He clicks on the map, and it shows all his pins and his friends' and families' pins (those who share their trip logs with Steve). From the map, he could also see the top points of interest around the world that many people recommend visiting.

   - The map should be user-friendly and allow users to navigate quickly, similar to how you can spin a physical globe
   - Top results can be updated weekly or monthly, just so that other points of interest have a chance to be noticed by users

Technical "flow"

User

+ username: string

+ password: string

+ email: string

+ login(username, password): void

+ register(username, password): void

+ verifylogin(): bool

---

trip log

+ name: string

+ id: int

+ deleteLog(): void

+ addLog(): void

---

pins

+ name: string

+ latitude: int

+ longitude: int

+ address: string

+ setPin(): void

+ deletePin(): void

Itinerary

+ deleteItinerary(): void

+ name: string

+ name: string

+ id: int

+ addItinerary(): void

---

places

+ address: string

+ id: int

+ name: string

+ latitude: int

+ longitude: int

Rating_Review

+ review: string

+ rating: int

+ placeId: int

+ setRating(rating): void

+ setReview(review): void

+ getRating(rating): int

+ getReview(review): string

+ deleteReview(review): void

+ deleteRating(rating): void

Final (self) assessment

After working through the spec, I believe that the biggest change I have to make from my sketch is figuring out the different pieces (classes) my project needs to work. I am not confident that I can implement everything in the spec. Still, I will develop the most basic features first and then move to do the cool stuff, like having an interactive map or integration with Tripadvisor API for the ratings and reviews. The biggest potential problem I would need to solve is storing the data and figuring out the best API to get location data of different points of interest. The least familiar part I will have is using APIs in Python and making a database. I have done some web development, so I know how to use APIs with Node.js and used PostgreSQL for my database, but I have not investigated APIs and databases in Python.