Team 8 Sprint 2 Planning Document: Kadence

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Sprint Overview:

In this second sprint, we plan to allow users to connect their Huawei devices and implement functionality to gather real-time heart rate data from them. We will also be constructing the core playlist generation algorithm for our app, as well as fleshing it out for the interval and mood modes (with the local artist and fitness modes to come in Sprint 3). Additionally, we will be implementing a search feature to allow users to find other users and view their profiles, taking into account visibility preferences. Finally, we plan to redesign some of the UI components in order to make our app look more polished and professional.

Scrum Master: *Avery Schaefer*

Meeting Schedule: *MWF 3:00-4:00pm*

Risks and Challenges:

This second sprint is where the “meat” of the project resides, as we will be fleshing out the core playlist generation algorithm for several modes. This will require us to be very familiar both with the structure of our app, to reduce unnecessary calls from the frontend to the backend, and the various music platform APIs needed to add songs to the listener’s play queues. Additionally, we will be adding in support for the fitness watches, requiring us to learn another API that is crucial to the success of our project. The documentation for the API we will be using is less than intuitive, so that will require some study on our end.

Another challenge will be the introduction of yet another third-party API (Huawei) into the application and ensuring that the app’s performance still holds up with the amount of API calls and function calls soon to be increasing. The motivation to make the generation algorithms as efficient as possible will be heightened, and we will need to be clever in order to lay down a great foundation for all things playlist related that is fast, easy to expand and thorough.

User Story #1: KAD-18, 20, 21, 22, 23, 68, D3

As a user, I would like to link, update, and delete my fitness watch in the app.

#	Description	Estimated Time	Owner
1	Use bluetooth to identify nearby devices.	4 Hours	Raymond
2	Use the Huawei API to connect to and retrieve data from the device.	6 Hours	Avery
3	Create a default function that will select the preferred device if two are detected.	2 Hours	Avery
4	Design relevant UI components to connect a new device registering	5 Hours	Nathan
5	Design relevant UI components with proper formatting to display the current connected devices	5 Hours	Nathan
6	Create functionality to allow users to update and delete devices	3 Hours	Nathan
7	Create API endpoint that queries the connected device to get a real-time snapshot of the user's heart rate data	8 Hours	Avery
7	Test device connection and functionality	3 Hours	Raymond
Total User Story Time		36 Hours	

Acceptance Criteria

- ☐ Given that the device discovery is set up correctly, when I search for nearby devices, the device I am trying to connect should pop up if it is in range.
- ☐ Given that the Huawei API is integrated correctly, when a user connects a device, information about that device should be sent to the backend and associated with that user.
- ☐ Given that the default device functionality is set up correctly, when a user connects two devices, the app will only retrieve fitness data from the default device that the user selects.
- ☐ Given that the update and deletion fields are set up correctly, when a user updates or removes a device, those changes will be reflected in both the backend and the frontend.
- ☐ Given that the app is able to pair a watch correctly, it should be able to query the watch for real-time heart rate data.

User Story #2: KAD-42

As a user, I would like to select from different playlist generation modes

#	Description	Estimated Time	Owner
1	Create home page	9 Hours	Nathan
2	Create place to select playlist mode	3 Hours	Nathan
3	Create button to begin playlist generation	1 Hours	Nathan
4	Create viewport for users to see generated playlist	6 Hours	Raymond
5	Using the music platform databases, take the preferences the user provided and store artist and song information to used for playlist generation (favorites and to blacklist)	6 Hours	Jack
6	Save all songs generated by the playlist algorithm into a list that the user can choose to then save as a permanent playlist to their music platform profile of choice	8 Hours	Jack
7	Write API routes and unit tests for users to save playlist to their connected music platform	4 Hours	Jack
Total User Story Time		37 Hours	

Acceptance Criteria

- ☐ Given that the homepage has been created, when a user navigates to the homepage they will be greeted with a fully functional homepage.
- ☐ Given that the homepage has been created, it will have a UI that is consistent with the other pages.
- ☐ Given that the homepage has been created, a user can generate a playlist that corresponds to the mode that they selected.
- ☐ Given that the homepage has been created, when a user generates a playlist, they will be able to see the songs that have been generated.
- ☐ Given that the preference connection is successfully completed, when a user goes to generate a playlist, the Kadence database should pull the artist and song information the user gives as a “seed” for generation.

- ☐ Given that the save playlist button has been implemented correctly, when a user saves a playlist that playlist will appear on their connected music platform.

User Story #3: KAD-77

As a user, I would like to be able to interact with my music platform from within the Kadence app.

#	Description	Estimated Time	Owner
1	Design and create UI components for an in-app music player (including play, pause, and skip buttons).	4 Hours	Colston
2	Implement the play and pause buttons for the music platforms.	9 Hours	Colston
3	Implement the skip button for the music platforms.	9 Hours	Colston
Total User Story Time		22 Hours	

Acceptance Criteria

- ☐ Given that a user has successfully connected their music platform, when they go to begin playlist generation, a music player allowing them to play/pause and skip songs will be visible in the app.
- ☐ Given that the play/pause button is correctly implemented, when a user presses the play/pause button, music playback will start/stop.
- ☐ Given that the skip button is correctly implemented, when a user presses the skip button, music playback will skip the rest of the currently playing song and jump ahead to the next song in the queue.

User Story #4: KAD-75

As a user, I would like to start playlist generation for the “interval” mode.

#	Description	Estimated Time	Owner
1	Design UI elements required for user to start playlist generation	5 Hours	Raymond
2	Create API endpoint that uses the “long” and “short” times stored in a user’s preferences to control generation	10 Hours	Avery
3	Create an algorithm that uses user preferences to generate a requested number of songs to add to the queue	8 Hours	Jack
4	Use the backend API endpoint to add the songs returned by the algorithm to the user’s play queue	7 Hours	Avery
5	Write unit tests for “interval” generation	2 Hours	Jack
Total User Story Time		32 Hours	

Acceptance Criteria

- ☐ Given that the playlist generation is completely functional, when I generate a playlist in “interval” mode, I should be able to listen to the songs curated for me.
- ☐ Given that “interval” mode is properly generating songs with certain criteria, I should be able to tell a subjective difference between the high energy and low energy songs generated during different periods
- ☐ Given that the logic of “interval” mode is correct, I should be able to listen to songs of each category [approx.] for the times I specify in my settings.
- ☐ Given that the playlist generation is completely functional, I should be able to skip songs and the algorithm should not falter (i.e. I should still expect songs for the full period)
- ☐ Given that I skip a song that was generated, Kadence should provide an option to not automatically save that song to the playlist when my generation session ends and instead allow me to manually choose whether it should be saved.

User Story #5: KAD-38

As a user, I would like to start playlist generation for the “mood” mode.

#	Description	Estimated Time	Owner
1	Design UI elements required for user to start playlist generation	5 Hours	Nathan
2	Create API endpoint that uses the user’s selected mood as a seed to generate songs	7 Hours	Avery
3	Create an algorithm that uses user preferences to generate a requested number of songs to add to the queue	5 Hours	Jack
4	Use the backend API endpoint to add all songs returned by the algorithm to the user’s play queue	5 Hours	Jack
5	Write unit tests for “mood” generation	2 Hours	Jack
Total User Story Time		24 Hours	

Acceptance Criteria

- ☐ Given that the playlist generation is completely functional, when I generate a playlist in “mood” mode, I should be able to listen to the songs curated for me.
- ☐ Given that the playlist generation is completely functional, I should be able to skip songs and the algorithm should not falter (i.e. I should still expect songs in the same mood).
- ☐ Given that “mood” mode is properly generating songs with certain criteria, I should (subjectively) be able to determine that the songs I’m listening to match the mood I inputted.
- ☐ Given that the logic of “mood” mode is correct, every playlist should be unique in the characteristics of the songs to match the input.

User Story #6: KAD-D6, 66

As a developer, I would like the app to have an intuitive and consistent user interface.

#	Description	Estimated Time	Owner
1	Redesign registerInfo page	6 Hours	Nathan
2	Add profile picture to account	8 Hours	Raymond
3	Make UI consistent across all pages	6 Hours	Nathan
4	Redesign settings page	4 Hours	Raymond
5	Write automated tests for frontend components	10 Hours	Raymond
Total User Story Time		34 Hours	

Acceptance Criteria

- ☐ Given that the profile picture is implemented correctly, when a user uploads a profile picture it will be visible on their profile page.
- ☐ Given that the profile picture is implemented correctly, a user will be able to upload a new profile picture and view it on their profile page.
- ☐ Given that the registerInfo page is redesigned, all elements will be aligned and look professional.
- ☐ Given that the settings page is redesigned, all elements will be aligned and look professional.
- ☐ Given that component designs are finalized, automated unit tests for front-end components can be run to ensure that they render properly.

User Story #7: KAD-53, 57

As a user, I would like to search for other users and view their profile pages.

#	Description	Estimated Time	Owner
1	Add an API endpoint to search for other users by their username.	4 Hours	Colston
2	Create UI components for the search page.	10 Hours	Colston
3	Display the searched user's profile information according to their profile visibility settings.	2 Hours	Colston
4	Write tests for the Search API endpoint	2 Hours	Colston
Total User Story Time		18 Hours	

Acceptance Criteria

- ☐ Given that the search API endpoint is functional, when I send a request with a given username to it, only users whose usernames match my query should be returned.
- ☐ Given that the search page is functional, when I type in a query, a list of users whose usernames match my query should be displayed, each of which acts as a link to their profile page.
- ☐ Given that profile visibility settings are properly taken into account, when I visit the page of a user who has set their profile to private, I should see an indicator that their profile is private and not have all of their relevant profile information available to me.
- ☐ Given that profile visibility settings are properly taken into account, when I visit the page of a user who has set their profile to public, I should be able to see all of their relevant profile information.

Total Time This Sprint: 200 Hours

Name	Estimated Time
Jackson	40
Avery	40
Nathan	40
Colston	40
Raymond	40

Remaining Product Backlog

Story ID	Story Name
Developer Stories	
KAD-D1	As a user, I would like the app to be cross platform (iOS and Android).
KAD-D2	As a developer, I would like user profile data to be safely and securely stored.
~~KAD-D3~~	~~As a developer, I would like user health / fitness data to be safely and securely stored.~~
KAD-D4	As a developer, I would like informative error messages to be shown both on the frontend of the app and in the developer console.
KAD-D5	As a developer, I would like the app to be properly documented with an informative README.
~~KAD-D6~~	~~As a developer, I would like the app to have an intuitive and consistent user interface.~~
~~KAD-D7~~	~~As a developer, I would like the repository to have a CI/CD pipeline.~~
~~KAD-D8~~	~~As a developer, I would like a Node/Express backend.~~
~~KAD-D9~~	~~As a developer, I would like a Next.js frontend.~~
~~KAD-D10~~	~~As a developer, I would like to integrate the frontend and backend.~~
~~KAD-D11~~	~~As a developer, I would like a MongoDB database connected to the backend.~~

Accounts and Profiles	
~~KAD-5~~	~~As a user, I would like to create an account.~~
~~KAD-6~~	~~As a user, I would like to login and logout of my account.~~
~~KAD-8~~	~~As a user, I would like to be able to delete my account.~~
~~KAD-9~~	~~As a user, I would like to be able to reset my password~~
~~KAD-10~~	~~As a user, I would like to view my profile.~~
~~KAD-11~~	~~As a user, I would like to update my profile.~~
~~KAD-65~~	~~As a user, I would like to have and edit a username.~~
~~KAD-66~~	~~As a user, I would like to have and display a profile picture.~~
~~KAD-67~~	~~As a user, I would like to display a short bio about myself and my music taste.~~
Device and Music Connections	
~~KAD-12~~	~~As a user, I would like to link a music platform.~~
~~KAD-13~~	~~As a user, I would like to be able to update my music platform.~~
~~KAD-14~~	~~As a user, I would like to be able to remove a music platform.~~
~~KAD-15~~	~~As a user, I would like to see what music platforms are currently linked.~~
~~KAD-17~~	~~As a user, I would like to be able to update my default music and device preferences.~~
~~KAD-18~~	~~As a user, I would like to connect to my fitness device.~~
~~KAD-68~~	~~As a user, I would like to be able to remove my connected device.~~
~~KAD-20~~	~~As a user, I would like to view my connected devices.~~
~~KAD-21~~	~~As a user, I would like to be able to choose a default device.~~
~~KAD-22~~	~~As a user, I would like to be able to allow / disallow the app to access my fitness data.~~
~~KAD-23~~	~~As a user, I would like to be able to rename a connected device.~~

Song Selection / Playlist Preferences	
KAD-24	As a user, I would like to select the genre of the playlist.
KAD-16	As a user, I would like to create default preferences on genres, artists, etc. that affect playlist generation.
~~KAD-25~~	~~As a user, I would like to blacklist songs and artists from my playlists.~~
~~KAD-26~~	~~As a user, I would like to be able to create a preference between lyrical and instrumental songs.~~
~~KAD-27~~	~~As a user, I would like to choose whether explicit songs are added to the playlist or not.~~
~~KAD-28~~	~~As a user, I would like to set a lyric language preference.~~
~~KAD-29~~	~~As a user, I would like to set a minimum and maximum song length.~~
~~KAD-52~~	~~As a user, I would like to set minimum and maximum time limits on the playlist being generated.~~
Playlist / Mode Functionality	
~~KAD-38~~	~~As a user, I would like to be able to start playlist generation for "mood" mode.~~
KAD-74	As a user, I would like to be able to start playlist generation for the "heart rate" mode.
~~KAD-75~~	~~As a user, I would like to be able to start playlist generation for the "interval" mode.~~
KAD-76	As a user, I would like to be able to start playlist generation for the "local artist" mode.
~~KAD-77~~	~~As a user, I would like to be able to interact with my music platform from within the Kadence app.~~
~~KAD-39~~	~~As a user, I would like to specify whether or not I want to save the playlist right away or allow Kadence to build a queue of songs to listen to first.~~
~~KAD-40~~	~~As a user, I would like to be able to provide feedback about the generated playlist.~~
~~KAD-41~~	~~As a user, I would like to delete a playlist after initial generation and automatically regenerate / reshuffle.~~

~~KAD-42~~	~~As a user, I would like to be able to select different playlist creation modes.~~
~~KAD-43~~	~~As a user, I would like to set / edit the short and long interval times in interval mode.~~
~~KAD-44~~	~~As a user, I would like to select ramp up or ramp down settings in the fitness mode.~~
~~KAD-45~~	~~As a user, I would like to change my default location to explore different local music scenes.~~
~~KAD-46~~	~~As a user, I would like to skip a song in a generated playlist / queue if I do not enjoy it.~~
KAD-47	As a user, I would like to blacklist additional songs if I strongly dislike them during playback.
KAD-48	As a user, I would like to save a playlist generated to either Spotify or Apple Music profiles after listening to it.
KAD-49	As a user, I would like to customize the name of the playlist before I save it.
KAD-51	As a user, I would like to have the ability to alter the playlist (remove songs) after it has been generated (if time permits).
Social	
~~KAD-53~~	~~As a user, I would like to view other people's profile pages.~~
~~KAD-54~~	~~As a user, I would like to hide my own profile page from other users by declaring my profile private.~~
KAD-55	As a user, I would like to ensure that all of my sensitive fitness information remains private from all users, including friends.
~~KAD-56~~	~~As a user, I would like other people to find and view my profile by declaring my profile public.~~
~~KAD-57~~	~~As a user, I would like to search for other users.~~
KAD-58	As a user, I would like to send friend requests to view private profiles.
KAD-59	As a user, I would like to view and listen to playlists that public users or friends generate.
KAD-61	As a user, I would like to view what song that a public user or friend is listening to in real-time (if time permits).

Activity Log (if time permits)	
KAD-62	As a user, I would like to see an activity log of all of my own actions.
KAD-63	As a user, I would like to see an activity log of new playlists my friends are generating and saving to their profiles.
KAD-64	As a user, I would like to see statistics regarding my listening history in each mode and about my playlists.