

## **Team 8 Sprint 3 Planning Document: **Kadence****

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**Sprint Overview:**

This sprint centers around completing the final features of the product and implementing the final two playlist generation modes: “heart rate” and “local artist”. This will involve new generation logic and connection to the Fitbit API in order to gather real-time heart rate data which we can then manipulate and transform into songs specifically tailored to the user. This sprint, we also plan on implementing social features such as having friends and sending friend requests, as well as an activity log of how a user’s friends are interacting with the app. These social features will also allow more users to see the types of generation happening on Kadence and get a better sense of their friends’ music tastes. Lastly, we will tie up some loose ends from previous sprints in order to make the app run as smoothly as possible, become more user-friendly and finally allow access for those people with Apple Music.

**Scrum Master:** *Raymond Xie*

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

**Risks and Challenges:**

The most obvious challenge of this sprint is the time constraint of not being able to have any additional time to finish features if any roadblocks show themselves during the sprint due to the end of the semester looming. This means we have the additional challenge and responsibility of prompt time-management, meaning we need to discover any potential setbacks early in the sprint. Another challenge we are facing is a growing number of API calls and database queries affecting the performance of the app, and we will need to find some work-arounds / come up with a better design system in order to make sure the app is fast and functional. The last major non-functional challenge we face is miscommunication between the frontend and backend teams. This slowed down development in the last sprint and caused some chaos towards the end, so we are striving to make a more deliberate effort to be communicating effectively and familiarizing ourselves with the work done by both teams.

### User Story #1: KAD-D2, D4, D5

As a developer, I would like the app to be clean, well-documented, and secure.

#	Description	Estimated Time	Owner
1	Refactor and clean the database	3 hours	Avery
2	Replace Next.js error messages with more informative custom error messages	6 hours	Avery
3	Update README	3 hours	Avery
4	Update API Documentation to include new API calls	5 hours	Avery
5	Add hashing to passwords	2 hours	Colston
Total User Story Time		19 Hours	

### Acceptance Criteria

- ☐ Given the database has been refactored and cleaned, it should be in-line with current usage and cleaned of unused items
- ☐ Given that custom error messages are added, users should not be shown default Next.js errors, and instead given custom, more informative errors
- ☐ Given that documentation has been updated, the README and API documentation should reflect the current state of the app and all API endpoints that the backend exposes to the frontend.
- ☐ Given that password hashing is correctly implemented, passwords will never be sent or stored in plain-text format.

## User Story #2: KAD-74, KAD-55

As a user, I would like to start playlist generation for fitness mode.

#	Description	Estimated Time	Owner
1	Design UI elements required for user to start playlist generation	9 Hours	Raymond
2	Create backend API endpoint to get heart rate data from paired Fitbit	8 hours	Avery
3	Test backend API endpoint for gathering heart rate data	4 hours	Avery
4	Create function for playback loop	8 hours	Jack
5	Connect playback loop and heart rate gathering	3 hours	Jack
6	Connect frontend player and backend functions	4 hours	Jack
7	Test mode in totality	5 hours	Jack
Total User Story Time		41 Hours	

### Acceptance Criteria

- ☐ Given that the backend API call is functional, I should be able to ping my connected Fitbit device and get an accurate reading of my heart rate data.
- ☐ Given I have my profile set to private, my fitness device info should be not displayed to other users.
- ☐ Given that the API endpoint and playback loop are integrated, the heart rate data should influence the song generation in a meaningful way.
- ☐ Given that the playback loop is functional, I should be able to listen to the songs that are curated and generated for me.
- ☐ Given that the playback loop is functional, I should be able to skip a song and the playlist generation loop should not falter.
- ☐ Given that I skip a song or dislike a song that was generated, Kadence should automatically not save that song to the playlist when my generation session ends.

### User Story #3: KAD-76

As a user, I would like to begin playlist generation in “Local Artists” mode.

#	Description	Estimated Time	Owner
1	Design UI elements required for user to start playlist generation	10 Hours	Nathan
2	Create API endpoint that generates songs from less-popular artists in the user’s local area	7 hours	Jack
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	Test playlist generation and playback	3 hours	Jack
Total User Story Time		30 Hours	

### Acceptance Criteria

- ☐ Given that the playlist generation is completely functional, when I generate a playlist in “Local Artists” mode, I should be able to listen to the entirety of the playlist.
- ☐ Given that the playlist generation is completely functional, I should be able to skip songs and the playlist should not falter.
- ☐ Given that the playlist generation is completely functional, songs played should be by artists that are local to the location I specify.

#### User Story #4: KAD-47

As a user, I would like to blacklist songs during playback.

#	Description	Estimated Time	Owner
1	Implement skipping functionality for the music player's dislike button	2 Hour	Nathan
2	Add disliked song to users blacklisted songs list	1 Hour	Nathan
3	Update the database with the new blacklisted songs	1 Hour	Nathan
4	Remove the song from the cache during interval and fitness mode	4 Hours	Nathan
Total User Story Time		8 Hours	

#### Acceptance Criteria

- ☐ Given the dislike button is implemented correctly, when a user clicks the dislike button the track they are currently listening to will skip to the next one.
- ☐ Given the dislike button is implemented correctly, when a user clicks the dislike button the track they are currently listening to will be added to their blacklisted songs.
- ☐ Given the dislike button is implemented correctly, when a user generates any new playlists, the song that they disliked will not appear in those playlists.
- ☐ Given the dislike button is implemented correctly, when a user hits the dislike button, the backend will be correctly updated.
- ☐ Given that the dislike button is implemented correctly, when a user dislikes a song in fitness or interval mode, those songs will not be included when the playlist is saved.

### User Story #5: KAD-48, 49

As a user, I would like to name and save the playlists I generate.

#	Description	Estimated Time	Owner
1	Create UI components to save playlists based on the user's waitToSave value for mood mode.	5 Hours	Nathan
2	Create UI components to save playlists based on the user's waitToSave value for local artist mode.	5 Hours	Nathan
3	Create UI components to prompt the user to save their generated playlist after the interval or fitness mode session is ended.	4 Hours	Colston
Total User Story Time		14 Hours	

### Acceptance Criteria

- ☐ Given that playlist saving has been correctly implemented, a user with waitToSave set to false will be able to choose a name for their playlist before generating in mood mode or local artist mode.
- ☐ Given that playlist saving has been correctly implemented, a user with waitToSave set to true will be able to choose a name for their playlist after generating in mood mode or local artist mode.
- ☐ Given that playlist saving has been correctly implemented, a user will be prompted to save the songs generated for them by interval mode or fitness mode after pressing the button to end the session.
- ☐ Given that playlist saving has been correctly implemented, when a user saves a playlist, they will see that playlist appear on their music platform with the name the user specified while saving it.

### User Story #6: KAD-62, 63

As a user, I would like to send, receive, cancel, accept, deny, and view friend requests.

#	Description	Estimated Time	Owner
1	Add UI components to send or cancel pending friend requests on other users' profile pages and to remove existing friends.	2 hours	Colston
2	Add UI components to view incoming friend requests as well as accept or deny them to the social page.	3 hours	Colston
3	Add and document new API endpoints to handle all friend request functionality.	4 hours	Colston
4	Integrate the frontend components with the backend APIs to complete friend request functionality.	4 hours	Colston
5	Modify profile pages so that private users are visible to friends.	4 hours	Colston
6	Manually test friend and visibility functionality.	3 hours	Colston
Total User Story Time		20 Hours	

### Acceptance Criteria

- ☐ Given that user A is not friends with user B, when user A navigates to user B's profile, a button should be visible that allows user A to send a friend request to user B or cancel an ongoing friend request to user B.
- ☐ Given that user A is friends with user B, when user A navigates to user B's profile, a button should be visible that allows user A to unfriend user B.
- ☐ Given that user A has sent a friend request to user B, this friend request should be visible on user B's social page where user B will have the option to accept or deny the request.
- ☐ Given that friends and profile visibility are correctly implemented and that user B is private, user A should only be able to see user B's private profile information if users A and B are friends.



### User Story #7: KAD-64

As a user, I would like to view an activity log of myself or my friends.

#	Description	Estimated Time	Owner
1	Create a function that adds any mode usage event (e.g., playlist generation) to the activity log and updates statistics for the given mode.	7 hours	Avery
2	Update database items for users to include an array of activity list events	4 hours	Avery
3	Add UI components on profile page to display a user's activity list	7 hours	Nathan
4	Ensure that only users whose profiles are marked as "public" can have their activity list seen by everyone (not just friends)	5 hours	Nathan
5	Test activity log	3 hours	Raymond
Total User Story Time		26 Hours	

### Acceptance Criteria

- ☐ Given the activity logging function is fully functional, the app should build an activity log for each individual user that updates whenever a new mode usage event happens.
- ☐ Given that the UI components and logging functions are fully completed, the app should show the user's activity log on their profile page.
- ☐ Given the privacy setting is fully implemented, only users whose profile is set to "public" should have their activity log visible to everyone, whereas private profiles should have their activity log visible only to that user's friends.

### User Story #8: KAD-78

As a user, I would like to use Kadence with Apple Music.

#	Description	Estimated Time	Owner
1	Develop a method to generate songs according to Spotify's statistics, and then send those songs to the frontend to be queued with Apple Music.	8 hours	Colston
2	Refactor interval mode to queue songs and save to playlists according to the user's specified music platform.	3 hours	Colston
3	Refactor mood mode to queue songs and save to playlists according to the user's specified music platform.	3 hours	Colston
Total User Story Time		14 Hours	

### Acceptance Criteria

- ☐ Given that the Spotify-to-Apple-Music conversion algorithm is completed and functional, even when a user is actively using Apple Music, the songs that are generated for that user will be based on Spotify's statistics.
- ☐ Given that interval mode works for both Spotify and Apple Music, when I use interval mode, songs should be queued and playlists should be saved using my current music platform selection.
- ☐ Given that mood mode works for both Spotify and Apple Music, when I use mood mode, songs should be queued and playlists should be saved using my current music platform selection.

### User Story #9

As a user, I would like to use all Kadence features on mobile devices with the same level of functionality.

#	Description	Estimated Time	Owner
1	Configure Kadence's web domain to use https	5 hours	Raymond
2	Implement workaround to make authentication work on mobile apps	10 hours	Raymond
3	Fix any mobile user experience issues, such as the bottom nav conflicting with the native nav bar	5 hours	Raymond
4	Manually test all app functionality on mobile to ensure it works as expected	3 hours	Raymond
5	Create an .apk of Kadence and host it on the website	5 hours	Raymond
Total User Story Time		28 Hours	

### Acceptance Criteria

- ☐ Given that the user is registered and on the home page of Kadence, they will be able to download and install an .apk of Kadence to their Android phone for use.
- ☐ Given that next-auth and Capacitor are integrated, a user should be able to successfully authenticate to Spotify from the mobile app version of Kadence.
- ☐ Given that next-auth and Capacitor are integrated, a user should be able to successfully authenticate to Fitbit from the mobile app version of Kadence.

### Total Time This Sprint: 200 Hours

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

### Remaining Product Backlog

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

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	<del>As a user, I would like to be able to allow / disallow the app to access my fitness data.</del>
KAD-23	<del>As a user, I would like to be able to rename a connected device.</del>
Song Selection / Playlist Preferences	
KAD-24	<del>As a user, I would like to select the genre of the playlist.</del>
KAD-16	<del>As a user, I would like to create default preferences on genres, artists, etc. that affect playlist generation.</del>
KAD-25	<del>As a user, I would like to blacklist songs and artists from my playlists.</del>
KAD-26	<del>As a user, I would like to be able to create a preference between lyrical and instrumental songs.</del>
KAD-27	<del>As a user, I would like to choose whether explicit songs are added to the playlist or not.</del>
KAD-28	<del>As a user, I would like to set a lyric language preference.</del>
KAD-29	<del>As a user, I would like to set a minimum and maximum song length.</del>
KAD-52	<del>As a user, I would like to set minimum and maximum time limits on the playlist being generated.</del>
Playlist / Mode Functionality	
KAD-38	<del>As a user, I would like to be able to start playlist generation for “mood” mode.</del>
KAD-74	<del>As a user, I would like to be able to start playlist generation for the “heart rate” mode.</del>
KAD-75	<del>As a user, I would like to be able to start playlist generation for the “interval” mode.</del>
KAD-76	<del>As a user, I would like to be able to start playlist generation for the “local artist” mode.</del>
KAD-77	<del>As a user, I would like to be able to interact with my music platform from within the Kadence app.</del>
KAD-39	<del>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.</del>

KAD-40	<del>As a user, I would like to be able to provide feedback about the generated playlist.</del>
KAD-41	<del>As a user, I would like to delete a playlist after initial generation and automatically regenerate / reshuffle.</del>
KAD-42	<del>As a user, I would like to be able to select different playlist creation modes.</del>
KAD-43	<del>As a user, I would like to set / edit the short and long interval times in interval mode.</del>
KAD-44	<del>As a user, I would like to select ramp up or ramp down settings in the fitness mode.</del>
KAD-45	<del>As a user, I would like to change my default location to explore different local music scenes.</del>
KAD-46	<del>As a user, I would like to skip a song in a generated playlist / queue if I do not enjoy it.</del>
KAD-47	<del>As a user, I would like to blacklist additional songs if I strongly dislike them during playback.</del>
KAD-48	<del>As a user, I would like to save a playlist generated to either Spotify or Apple Music profiles after listening to it.</del>
KAD-49	<del>As a user, I would like to customize the name of the playlist before I save it.</del>
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).
KAD-78	<del>As a user, I would like to use Kadence with Apple Music.</del>
Social	
KAD-53	<del>As a user, I would like to view other people's profile pages.</del>
KAD-54	<del>As a user, I would like to hide my own profile page from other users by declaring my profile private.</del>
KAD-55	<del>As a user, I would like to ensure that all of my sensitive fitness information remains private from all users, including friends.</del>
KAD-56	<del>As a user, I would like other people to find and view my profile by declaring my profile public.</del>
KAD-57	<del>As a user, I would like to search for other users.</del>

KAD-58	<del>As a user, I would like to send friend requests to view private profiles.</del>
KAD-59	<del>As a user, I would like to view and listen to playlists that public users or friends generate.</del>
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	<del>As a user, I would like to see an activity log of all of my own actions.</del>
KAD-63	<del>As a user, I would like to see an activity log of new playlists my friends are generating and saving to their profiles.</del>
KAD-64	<del>As a user, I would like to see statistics regarding my listening history in each mode and about my playlists.</del>