Spotify PULSE

Personalized User-Learned Social Experience

Team 18

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Sprint Overview:

In this first sprint, we hope to create fundamental features such as creating the login, account, and dashboard pages. Our base framework consists of ReactJS, Python, and MySQL. We plan to implement basic operations, such as account creation, changing settings, and linking Spotify access token to PULSE. With this API access, we plan to create the frameworks of the statistics and games page by pulling data from Spotify. User data will be pulled from the API and stored in the database for statistics and the game will pull song data to operate. By the end of this sprint, we plan to have created an application that supports the basic functionality.

Scrum Master: Rheaa Sharma

Meeting Plan:
- Mondays 6:00 PM
- Wednesday 8:30 PM with Project Coordinator

Risks and Challenges:

One of the largest hurdles we would have to face is learning web development since most of us have never developed a website before. It will be tough getting started with the system and learning the new frameworks/language. However, after that initial learning curve, the rest of the sprint should go smoothly. We have specifically chosen user stories that will put us in a position to build the skills we'll need going forward while still setting up our code framework for success.

The other challenge we have is estimating how much time we will take to complete the user stories. Especially since this is the first time we have done user story time estimation and web development. Additionally, estimation will be difficult since we are learning as well as implementing the knowledge learned at the same time.

To overcome these challenges we will have a ReactJS workshop by one of our teammates who has worked with ReactJS in the past. Apart from that we aim to meet regularly to solve more complex issues together, start working early on the tasks within the sprint, and document the code well.

Current Sprint Details:

User Story #1c:

As a user, I would like to be able to register for a PULSE account using Spotify.

#	Description	Time	Owner
1	Create basic class structure with server-side functions and data storage	4h	Noah
2	Create user class and needed functions	3h	Noah
3	Create database to store data using Microsoft Azure and format user info schema	6h	Bodhi
4	Create component for side login and login button that allows for user to go to Spotify Login	3.5h	Rheaa
5	Create UI for welcome page	2h	Bodhi
6	Get access token from Spotify API	1.5h	Dane
7	Populate account fields	2h	Dane
8	Refresh access token when needed	1.5h	Dane

Acceptance Criteria:
- Given that a user is connected to the internet, when they attempt to access PULSE, they should be able to see the initial welcome page.
- Given that a user is connected to the internet, when the user goes to the welcome page, then a user will see a green background with music symbols over it which will be partially covered by the side login section.
- Given that a user wants to login, when they press the login with the Spotify button, they are taken to the official Spotify login.
- Given that a user has legitimate Spotify credentials, when they register on the login page, they are taken into PULSE.
- Given that the user has given their Spotify access token to PULSE, when they login, then the user can view their data from Spotify.

User Story #1d:

As a user, I would like to be able to login and manage my PULSE account.

#	Description	Time	Owner

CS 307   **Team 18**
Project Name: Spotify PULSE   **Project Coordinator**: Alisa Garcia
Team Members: Rheaa Sharma, Noah Stern, Dane Shaffer, Alex Polivka, Jason Zheng, Bodhi Scott

#	Description	Time	Owner
1	Create UI for profile page which includes a setting subsection	4h	Alex
2	Connect UI to database to update usernames and icons automatically.	2h	Dane
3	Store user info & settings in database	0.5h	Bodhi
4	Dynamically compress icons to target size for display	2h	Bodhi
5	Create icon database schema and store icons	1h	Bodhi
6	Create UI for user icon and username on login	2h	Alex

Acceptance Criteria:
- Given that a user has legitimate Spotify credentials, when they initially login to their Spotify account, they are taken into PULSE.
- Given that the user is logged in, when the user wants to view the profile page, then a UI for the profile page with a settings section should be displayed.
- Given that a user did not set an icon on first login, when they want to have one, then they can upload a photo and the change is immediate.
- Given that the database is correctly updating user information, when they want to change it, then they can upload a new photo to replace it and the photo immediately updates.
- Given that the user is uploading an icon for any reason, when they are prompted, then they can choose a PNG or JPEG from their computer to upload.
- Given that the user is logged out, when the user logs in, then their username and icon should be the same as when they logged out.
- Given that the user has not logged in to PULSE before, when they login on the Spotify page, they are prompted to edit their username and icon.
- Given that the user has edited their username and icon for the first time, when they exit the prompt, their username and icon are created immediately and visible on the homepage.

User Story #1f:
As a user, I would like the website to adapt to different devices/platforms.

#	Description	Time	Owner
1	Get data about which platform the user is using	3h	Alex

2	Configure UI to match the platform	2h	Bodhi

Acceptance Criteria:
- Given that the user's browser gives information about the device, when the user accesses the website, then the UI will fit its contents to be accessible.
- Given the user is using a landscape device, when the user accesses the website, then the UI will conveniently fit a landscape ratio.
- Given the user is using a portrait device, when the user accesses the website, then the UI will conveniently fit a portrait ratio.
- Given that the user's browser gives information about the device, when the user changes the window size, then the UI will rearrange its contents in the main window to be accessible.

User Story #1g:

As a user, I would like to access all other pages from a home page.

#	Description	Time	Owner
1	Create UI for top tab	2h	Rheaa
2	Create components for 4 sections	2h	Rheaa
3	Create component for the friends section	1h	Rheaa
4	Implement buttons to go to different pages	1h	Rheaa
5	Add icon and link the profile section	1h	Rheaa
6	Create buttons and link all the game pages	0.5h	Rheaa

Acceptance Criteria:
- Given the user has inputted correct credentials, when the user logs in, then they can see the homepage of the web app.
- Given the user is on the homepage, when they want to go to other tabs, then they can click a tab on the top bar and get directed to the other tab pages.
- Given the user is on the homepage, when they want to go to the games page, then the user can click a button and get directed to the games page.
- Given the user is on the homepage, when they want to go to the profile page, then the user can click a button and get directed to the profile page.
- Given the user is on the homepage, when they want to view their friends, then the user can click a button and view their friends page.

User Story #2a:

As a user, I would like to have dark/light mode.

#	Description	Time	Owner
1	Set up data colors for light and dark mode in a file	4h	Rheaa
2	Set up a component that wraps all the components in the view that the modes apply to	1h	Rheaa
3	Insert UI toggle between light/dark mode	0.5h	Rheaa

Acceptance Criteria:
- Given that an account has been created, when the user is logged in for the first time, then the webpage is automatically set to dark mode.
- Given the user is in dark mode, when they click the toggle to light mode button, then they can see the screen change to light mode.
- Given the user is in light mode, when they click the toggle to dark mode button, then they can see the screen change to dark mode.
- Given the user has selected dark/light mode, when they navigate to other pages, then they can see the page in the appropriate mode.
- Given the user has selected light/dark mode, when they log back in, then their preference will be stored and the chosen mode will be displayed.

User Story #2b:
As a user, I would like to be able to change text size

#	Description	Time	Owner
1	Create UI for changing text size	2h	Alex
2	Update text size in the database	0.25h	Alex
3	Modify frontend code to utilize text size from database	2h	Alex

Acceptance Criteria:
- Given the user is in the settings, when they want to change text size, then they will have options for text size.
- Given the user is logged in, when they change text size, their preference is remembered every time they log in.
- Given the user is logged in, when they change text size, then text size automatically updates on the page.
- Given that text size changed, when they navigate to a different page, then text size is retrieved from the database and text size updates.

User Story #2f:

As a user, I would like to edit my username

#	Description	Time	Owner
1	Add a button to edit the username	0.25h	Dane
2	Add a button to finalize changes	0.25h	Dane
3	Edit the username on the backend and database	0.25h	Dane

Acceptance Criteria:
- Given the user is in the settings, when they want to change username, then they will see a way to change username.
- Given the user is logged in, when they change username, their preference is remembered every time they log in.
- Given the user is logged in, when they change username, then text size automatically updates on the page.

User Story #2j:

As a user, I would like to modify my profile information such as gender, profile picture and location.

#	Description	Time	Owner
1	Modify profile UI to show gender and location	1h	Dane
2	Modify UI to allow editing of gender, profile picture and location	1h	Dane
3	Update database to store new data	0.25h	Dane

Acceptance Criteria:
- Given the user is in the settings, when they want to change gender, then they will see a way to change gender.
- Given the user is in the settings, when they want to change profile picture, then they will see a way to change profile picture.
- Given the user is in the settings, when they want to change location, then they will see a way to change location.

User Story #3a:

As a user, I would like for my top songs and artists for the last 4 weeks, 6 months and all time to be tracked.

#	Description	Time	Owner
1	Pull top songs and artists for the last 4 weeks, 6 months and all time from Spotify API	2h	Noah
2	Store data in the database	0.25h	Noah
3	Pull song and artist images from Spotify for display on custom component	1h	Bodhi
5	Create custom component to display top song/artist images on the statistics dump page	4h	Bodhi
6	Allow songs or artist songs to be played after being clicked on	1h	Dane

Acceptance Criteria:
- Given the user has given a Spotify access token to PULSE, when the user logs in, top songs and artists for the last 4 weeks should be pulled from Spotify and tracked on the statistics page.
- Given the user has given a Spotify access token to PULSE, when the user logs in, top songs and artists for the last 6 months should be pulled from Spotify and tracked on the statistics page.
- Given the user has given a Spotify access token to PULSE, when the user logs in, top songs and artists for all time should be pulled from Spotify and tracked on the statistics page.
- Given the user is on the statistics page, when the user loads the custom component, images of the top song/artist are pulled from Spotify and placed on the component.
- Given a user clicks on an artist or song and has their spotify open, the respective music will start playing.

User Story #3h:
As a user, I would like to track my follower numbers.

#	Description	Time	Owner
1	Pull followers from Spotify API	0.5h	Dane
2	Store data in the database	0.25h	Dane
3	Display data on statistics dump page	0.25h	Dane

| 4 | Store history in database | 1.5h | Dane |
| 5 | Allow history to be accessed and pulled by time | 0.5h | Dane |

Acceptance Criteria:
- Given the user has given a Spotify access token to PULSE, when the user logs in, follower data should be pulled from Spotify and tracked on the statistics page.
- Given the user has logged in for a new session, when the user looks at follower statistics, the user can view follower data pulled from previous sessions.
- Given the user has updated follower count on Spotify, when the user refreshes statistics, then the new data will update on PULSE.

User Story #3i:

As a user, I would like for my most recently listened to songs to be displayed.

#	Description	Time	Owner
1	Pull recently listened to songs from Spotify API	1h	Noah
2	Store data in the database	0.25h	Noah
3	Display data on statistics dump page	1h	Alex
4	Allow songs to be clicked on and play	0.25h	Alex

Acceptance Criteria:
- Given the user has given a Spotify access token to PULSE, when the user opens the statistics page, recently-listened songs are displayed on the web-page.
- Given the user has recently-listened to songs, when the user clicks a recent song's play button, their Spotify app will play the song.
- Given data has been inputted into the database, when the website requests data, recently-listened to songs should be viewable on PULSE.
- Given a user clicks on a song and has their Spotify open, the respective music will start playing.

User Story #3j:

As a user, I would like for my saved songs, saved albums, and followed artists to be displayed.

#	Description	Time	Owner
1	Pull liked songs, playlists and albums from Spotify	1h	Noah

2	Store data in the database	0.25h	Dane
3	Display data on statistics dump page	1.5h	Dane
4	Allow items to be clicked on and played	0.25h	Dane

Acceptance Criteria:
- Given the user has given a Spotify access token to PULSE, when the user logs in, saved songs, saved albums, and followed artists should be pulled from Spotify and tracked on the statistics page as well as displayed on the frontend.
- Given the user has saved songs or albums when the user clicks an item's play button, their Spotify app will play the item.
- Given the user has followed artists, when the user clicks on one it takes them to their Spotify artist page

User Story #3I:

As a user, I would like to be able to view statistics in multiple different graphs or charts

#	Description	Time	Owner
1	Create UI frame for statistics graph dump	3h	Jason
2	Create graph graphics (pie chart, line chart, etc.)	3h	Jason
3	Make graphs responsive & test to ensure responsiveness	2h	Jason
4	Create preset themes for graphs	4h	Jason
5	Generate UI to allow user to select graph type and data to display	3h	Jason

Acceptance Criteria:
- Given that the user is logged in, when the user navigates to the statistics page, then a statistics UI should be displayed.
- Given that the user has placed a graph on the statistics page, when the window changes size, the graph will still display in a readable manner.
- Given that the user is on the statistics page, when the user clicks add graph, then a menu should appear to the user to select graph type and data to display.
- Given that the graph menu appeared, when the user selects "graph", then the user can view multiple different types of graphs (pie chart, line graph, and bar chart).
- Given that the graph menu appeared, when the user selects "themes", then the user can view multiple different preset themes for the graph.

- Given that the graph menu appeared, when the user selects "data", then the user can view multiple different data variables to insert into the graph.
- Given that the graph menu appeared, when the user selects the "Generate Graph" button, then a graph should be generated with the correct information from the database.

User Story #3m:

As a user, I would like to be able to create custom layouts for the statistics page

#	Description	Time	Owner
1	Implement grid layout to place elements on	4h	Jason
2	Allow elements to be dynamically added and removed	3h	Jason
3	Allow elements to be dynamically resized	2h	Jason
4	Allow graph elements to be moved around the page by the user	4h	Jason
5	Make grid responsive & test to ensure responsiveness	2h	Jason
6	Format and store grid layout, element and element size in database	2h	Rheaa
7	Implement ability to save to and load multiple different graph layouts	4h	Rheaa

Acceptance Criteria:
- Given that a graph is on the statistics page, when the user wants to move graphs around, then the graph can be moved around.
- Given that a graph is on the statistics page, when the user wants to add a graph, then the graph can be added.
- Given that a graph is on the statistics page, when the user wants to remove a graph, then the graph can be removed.
- Given that a graph is on the statistics page, when the user moves graphs around, then the graph will snap to the grid layout.
- Given that a user has placed graphs on the statistics page, when the user selects a loadout and presses "save", then graphs and graph layout should be saved.
- Given that a loadout has been saved in the database, when the user selects a loadout and presses "load", then graphs and graph layout should be loaded onto the page.

- Given that the user has set a layout as default, when the user goes back to the statistics page, then that default layout should be loaded onto the page.

User Story #3s:

As a user, I would like to be able to view my playlists on the website

#	Description	Time	Owner
1	Pull playlists from Spotify API	1h	Noah
2	Display images on custom component for statistics dump page	1h	Bodhi
3	Play playlists when clicked on	0.25h	Bodhi

Acceptance Criteria:
- Given the user has given a Spotify access token to PULSE, when the stats page is opened, then the user's playlists should be pulled from Spotify and displayed on the frontend.
- Given that the playlists have been displayed and the user has Spotify open, when the user can click on a playlist, the playlist will start playing.
- Given a user updates a playlist image, when the page is refreshed, the page will update the new image.

User Story #5a:

As a user, I would like to be able to find similar songs (based on Spotify API parameters such as loudness) to the current song

#	Description	Time	Owner
1	Develop UI for DJ Mixer page	4h	Alex
2	Develop UI for song recommender	2h	Alex
3	Get recommendation parameters from song	1h	Dane
4	Get recommended songs from Spotify API	1h	Dane
5	Display song titles and images	1h	Dane
6	Play recommendations in player when clicked	0.25h	Dane

Acceptance Criteria:
- Given the user is logged in to Spotify and PULSE, when they are on the homepage, they can navigate to the DJ mixer page

- Given the user is logged in, when they are on the DJ mixer page, they can navigate to the song recommendation page.
- Given the user is on the song recommendation page, they can search spotify for a song and select to receive recommendations for song
- Given the user is logged in, when the user has requested recommendations, a scroll box appears populated and displaying recommended songs.
- Given the user is logged and has the Spotify app open, when the user clicks on a recommended song, then the song will start playing

User Story #6a:
As a user, I would like to play the game "Guess the Song/Artist" as a quiz format and heads-up format

#	Description	Time	Owner
1	Create classes and/or data structures to store the players' scores and statistics for the game	3h	Noah
2	Create UI for title screen of game and settings	4h	Rheaa
3	Create & store settings options for game configuration	3h	Noah
4	Build skeleton of game backend	4h	Noah
5	Create UI for game states including the screens for each round and the final score page	4h	Rheaa
6	Randomly generate song from given category and other parameters in game settings and playback via Spotify music player	4h	Noah
7	Create prompt to display past scores	2h	Noah

Acceptance Criteria:
- Given the user has selected to play the game, when they haven't played the game before, then they are prompted to change the game setting with the game settings at default.
- Given that the user has played the game before, when the user is prompted to change game settings, then settings are set to the settings from the last game played.

- Given that the user has moved past the game settings screen, when they are playing the game, then they should move through the game states in a smooth and intuitive fashion.
- Given that the settings have been set, when the game is initializing, then a song is randomly chosen from the given category.
- Given that the game has been initialized, when the game is running, then the user can play back the song with a music player.
- Given that a user is playing the game, when they want to quit, then they can press the quit button to leave the game and go back to the game dashboard.
- Given the user has finished playing a game, when the game is exited, then the user's score should be stored.
- Given the user has played the game before, when the user chooses to view past scores, then the user's scores should be displayed.

User Story #6c:

As a user, I would like to play the game "Guess the Next Lyric" as a quiz format and heads-up format

#	Description	Time	Owner
1	Create classes and/or data structures to store the players' scores and statistics for the game	1h	Bodhi
2	Create UI for title screen of game and settings	2h	Alex
3	Create & store settings options for game configuration	2h	Bodhi
4	Build skeleton of game backend	2h	Bodhi
5	Create UI for game states including the screens for each round and the final score page	1.5h	Alex
6	Playback song sample	0.25h	Bodhi
7	Create prompt to display past scores	1h	Bodhi

Acceptance Criteria:
- Given the user has selected to play the game, when they haven't played the game before, then they are prompted to change the game setting with the game settings at default.

- Given that the user has played the game before, when the user is prompted to change game settings, then settings are set to the settings from the last game played.
- Given that the user has moved past the game settings screen, when they are playing the game, then they should move through the game states in a smooth and intuitive fashion.
- Given that the settings have been set, when the game is initializing, then a song is randomly chosen from the given category.
- Given that the game has been initialized, when the game is running, then the user can play back the song sample with a music player.
- Given that a user is playing the game, when they want to quit, then they can press the quit button to leave the game and go back to the game dashboard.
- Given the user has finished playing a game, when the game is exited, then the user's score should be stored.
- Given the user has played the game before, when the user chooses to view past scores, then the user's scores should be displayed.

User Story #7a:
As a user, I would like to be able to search for songs, albums, artists, playlists.

#	Description	Time	Owner
1	Add functionality for song search bar and query API with searched for song and artist	2h	Noah
2	Add component for dropdown menu and filter by song, album, artist, playlist	1h	Bodhi
3	Display images on custom component for searched song dropdown	2h	Bodhi

Acceptance Criteria:
- Given the user has a search criteria, when the user presses "search", then search results are shown.
- Given the user has a search criteria, when the user presses "search", then results have their associated icons shown.
- Given the user has a search criteria, when the user changes their search, the dropdown dynamically updates with the new search query

User Story #8b:
As a user, I would like to be able to control Spotify playback on the PULSE website

#	Description	Time	Owner
1	Get access to the user's song player	2h	Dane
2	Create detailed song player UI	4h	Alex
3	Place a compact song player on all pages	2h	Alex
4	Add functionality to pause/play songs	1h	Dane
5	Add functionality to skip to next/previous songs	1h	Dane
6	Add functionality to set repeat mode and playback shuffle	1h	Dane
7	Add functionality to adjust volume and skip to specific part of a track	2h	Dane
8	Add functionality to view and add items to queue	2h	Dane
9	Add functionalities to compact player	1.25h	Dane

Acceptance Criteria:
- Given that the user is on the playback page, and has given PULSE access to their Spotify account, then a music player should be displayed to allow playback to be controlled from PULSE.
- Given that the music player is displayed, when playback status changes, then the player updates automatically.
- Given that the music player is displayed, when the user selects "pause" or "play", then their Spotify playback responds accordingly.
- Given that the music player is displayed, when the user selects "skip next/previous", then their Spotify playback responds accordingly.
- Given that the music player is displayed, when the user selects "shuffle", then their Spotify playback responds accordingly.
- Given that the music player is displayed, when the user selects "repeat", then their Spotify playback responds accordingly.
- Given that the music player is displayed, when the user changes their volume, then their Spotify playback responds accordingly.

Total Hours per Person:

Developer	Hours
Rheaa Sharma	30.5
Noah Stern	30.5
Dane Shaffer	30
Alex Polivka	30
Jason Zheng	30
Bodhi Scott	30
Total	**181**

CS 307   **Team 18**
Project Name: Spotify PULSE   **Project Coordinator**: Alisa Garcia
Team Members: Rheaa Sharma, Noah Stern, Dane Shaffer, Alex Polivka, Jason Zheng, Bodhi Scott

Remaining Backlog:

Functional Requirements:

1. Basic Infrastructure
   a. As a user, I would like to be able to register for a PULSE account using my email (if time allows)
   b. As a user, I would like to be able to register for a PULSE account using OAuth such as Google (if time allows)
   c. ~~As a user, I would like to be able to register for a PULSE account using Spotify~~
   d. ~~As a user, I would like to be able to login and manage my PULSE account~~
   e. As a user, I would like to be able to reset my password if I forget it
   f. ~~As a user, I would like to sync my account across devices/platforms~~
   g. ~~As a user, I would like to access all other pages from a home page~~
2. Settings
   a. ~~As a user, I would like to have dark/light mode~~
   b. ~~As a user, I would like to be able to change text size~~
   c. As a user, I would like to have custom backgrounds
   d. As a user, I would like to have preset themes to change up the interface's look
   e. As a user, I would like to be able to view my Spotify friends
   f. As a user, I would like to edit my username
   g. As a user, I would like to modify my profile information such as gender, profile picture and location.
3. Statistics Dump
   a. ~~As a user, I would like for my top songs and artists for the last 4 weeks, 6 months and all time to be tracked~~
   b. As a user, I would like to be able to export Spotify data and import it into PULSE to get the following statistics
   c. As a user, I would like for number of minutes listened to be tracked in my listening activity
   d. As a user, I would like for percentage of total music listened to be tracked in my listening activity
   e. As a user, I would like for times when music was listened to (morning, afternoon, night, etc.) in my listening activity
   f. As a user, I would like for times when songs were listened to fully or skipped or repeated in my listening activity

     g. As a user, I would like to to see songs, artists, playlists, genres and favorite era of music sorted by the metrics above

     h. ~~As a user, I would like to track my follower numbers~~

     i. ~~As a user, I would like for my most recently listened to songs to be displayed~~

     j. ~~As a user, I would like for my songs, playlists, and albums that I've liked recently to be displayed~~

     k. As a user, I would like to be able to specify what time period I want my stats to be from.

     l. ~~As a user, I would like to be able to view statistics in multiple different graphs or charts~~

     m. ~~As a user, I would like to be able to create custom layouts for the statistics page~~

     n. As a user, I would like to be able to download my and my friend's statistics in a CSV and text file

     o. As a user, I would like to be able to download my and my friend's statistics in a pdf file

     p. As a user, I would like to be able to create custom graphs with specified data and formats

     q. As a user, I would like to be able to view my friends' statistics as per previously mentioned user tracked statistics

     r. As a user, I would like to import my friends stats from a csv/txt file to compare

     s. ~~As a user, I would like to be able to view my playlists on the website~~

4. Playlist Page

     a. As a user, I would like for recommendations for songs to add on the playlist based on Genre

     b. As a user, I would like for recommendations for songs to add on the playlist based on Artist

     c. As a user, I would like for recommendations for songs to add on the playlist based on Song Writer

     d. As a user, I would like for recommendations for songs to add on the playlist based on Location

     e. As a user, I would like for recommendations for songs to add on the playlist based on Album

     f. As a user, I would like for recommendations for songs to add on the playlist based on User emotion (informed by Spotify API)

     g. As a user, I would an AI to DJ for me based on BPM matching

h. As a user, I would like a playlist activity monitor that displays the amount of times the playlist was played in an user-friendly manner on the playlist page
   i. As a user, I would like to choose two playlists and have a new playlist made from the Spotify-recommended songs of both playlists
   j. As a user, I would like to choose two playlists and have a new playlist to merge them and have them flow into each other based on BPM
5. Song Page
   a. ~~As a user, I would like to be able to find similar songs (based on Spotify API parameters such as loudness) to the current song~~
   b. As a user, I would like to be able to find similar songs by specifying Spotify API target parameters such as loudness to a chosen song.
   c. As a user, I would like to be able to view lyrics to songs
   d. As a user, I would like for songs to be automatically captioned based on lyrics (If time allows)
   e. As a user, I would like for songs to be automatically removed from playlists after a certain threshold of skips set by the user
   f. As a user, I would like for the song to have music videos automatically linked if available on Youtube or other such platforms
   g. As a user, I would like for a song activity monitor that displays the amount of times the song was played in an user-friendly manner on the song page
6. Game Page
   a. ~~As a user, I would like to play the game "Guess the Song/Artist" as a quiz format and heads-up format~~
   b. As a user, I would like to play games such as Guess who listens to this song as a quiz format and heads-up format
   c. ~~As a user, I would like to play the game "Guess the Next Lyric" as a quiz format and heads-up format~~

7. Search (if time allows)
   a. ~~As a user, I would like to be able to search for songs, albums, artists, playlists.~~
   b. As a user, I would like to be able to filter my search with keywords such as year, genre, new songs and popularity.
8. Song Player (if time allows)
   a. As a user, I would like to be able to listen to samples of songs when they are recommended to me
   b. ~~As a user, I would like to be able to control Spotify playback through a music player on PULSE~~

    c. As a user, I would like to start Spotify playback through a Spotify device on PULSE after searching for a playlist or song

    d. As a user, I would like to manage the Spotify queue by searching a song and adding or removing it

9. Music Uploader (if time allows)

    a. As a user, I would like to be able to upload local files and add them to new/existing playlists

    b. As a user, I would like to be able to auto-fill metadata for these local files

10. TicketMaster API (if time allows)

    a. As a user, I would like to be able to view music show recommendations when viewing relevant songs/artists/albums

11. PULSE Chat Bot (if time allows)

    a. As a user, I would like to interact with a PULSE chatbot through a textbox

    b. As a user, I would like to be able to get song recommendations per Genre, Artist, Song Writer, Location. Album and User emotion through PULSE chatbot

    c. As a user, I would like to be able to automatically generate playlists per Genre, Artist, Song Writer, Location. Album and User emotion through PULSE chatbot

    d. As a user, I would like to be able to get song information by inputting a short phrase from the song into PULSE chatbot

    e. As a user, I would like to get help with finding/doing a certain action on the website by asking PULSE chatbot

    f. As a user, I would like to be able to give feedback to developers about requested features, bugs or general messages through PULSE chatbot

CS 307   **Team 18**
Project Name: Spotify PULSE   **Project Coordinator**: Alisa Garcia
Team Members: Rheaa Sharma, Noah Stern, Dane Shaffer, Alex Polivka, Jason Zheng, Bodhi Scott

Non-Functional Requirements:

I. Quality of Life
- A. As a user, I would like the website to be responsive with reasonable speed and at all times
  1. Reasonable speed: < 400ms for typical navigation inputs
  2. Be able to reasonably handle double-inputs

II. Accessibility
- A. As a user, I would like the website to be usable in multiple formats
  1. Support for landscape and portrait mode
  2. Support for desktop and mobile browser
  3. Support for scaled-up/down windows

III. Maintainability
- A. As a developer, I would like to be able to easily maintain features
- B. As a developer, I would like to be able to easily add new features

IV. Security
- A. Personal information and passwords will be encrypted when transferred using an 18-bit encryption
- B. Encrypt using a more-secure Caesar cipher (if time allows)
- C. User information from Spotify should be stored in a secure manner to protect against common exploits such as cross-site-scripting, buffer overflow, and SQL injection using industry standard practices such as Microsoft's own SQL Server documentation on common security practices. This includes practices like input sanitization, privilege controls, and encryption

V. Architecture and Performance
- A. As a developer, I want to run the frontend using ReactJS and the backend using Python
- B. As a developer, I want to use SQL for storing data
- C. As a developer, I want to connect the frontend and backend using Django