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# Product Backlog - SpotiBot

CS408 Software Testing - Spring 2018

https://github.com/pujamittal/cs408

## PROBLEM STATEMENT

Although Spotify gives users some options for automatically generated playlists, users do not have enough control over their preferences for the generated playlists. Our solution is to give users the options to create more customizable automatically generated playlists.

## BACKGROUND INFO

In the past several years Spotify has become the most popular web and app music distributor in the world. It allows users to find all genres of music and podcasts, curate their own playlists, create “song radios”, and follow other users and view their music tastes as a form of social media. While they continue to expand the services they offer through their application, there exists use cases that their main competitor, Pandora, attempts to fit the niche for.  Pandora specializes in generating “radio stations” based upon either single artists, genres, or songs as seeds and offers very little control over the radio after that beyond simple like or dislike criteria.

SpotiBot looks to help Spotify bridge the gap between them and Pandora in an approachable manner for everyday users. Utilizing the developer api-endpoints we will create a messenger bot in which users can seed with multiple artists, songs, playlists, genres, or moods and be given back a permanent playlists they can save to their own spotify profiles for further editing and ownership.

## ENVIRONMENT

The server will be done in javascript and node.js with emphasis on the webhook functionality. We will use the Facebook Messenger node package to handle all of the messenger requests and the Spotify API endpoints to deal with all user informations and song management. It will be deployed on an AWS EC2 for remote access and SSL confirmations. The actual playlist compilation and recommendation will be done in javascript as well or offloaded to a python script as needed for machine learning. Finally we will have a MongoDB backend to short term cache the playlists and keep user statistics for development purposes.

## FUNCTIONAL REQUIREMENTS

| # | Functional Requirements | Hours | Status |
|---|---|---|---|
| 1 | As a user, I want to be able to sign into my Facebook Messenger account | 5 | Sprint 1 |
| 2 | As a user, I want to be able to sign into my Spotify account, given that I have a Messenger account or Facebook account | 5 | Sprint 1 |
| 3 | As a user, I want to be able to tell the bot how many songs I want in the generated playlist | 5 | Sprint 2 |
| 4 | As a user, I want to be able to input a number of months and get a playlist of my top tracks from that time period | 25 | Sprint 1 |
| 5 | As a user, I want to be able to input one or more genres into the chat after prompted and get a playlist based on those genres | 25 | Sprint 2 |

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|---|---|---|---|
| 6 | As a user, I want to be able to input one or more moods into the chat after prompted and get a playlist based on those moods | 25 | Sprint 2 |
| 7 | As a user, I want to be able to input one or more songs into the chat after prompted and get a playlist based on those songs | 25 | Sprint 2 |
| 8 | As a user, I want to be able to input one or more of my playlists into the chat after prompted and get a playlist based on those playlists | 25 | Sprint 2 |
| 9 | As a user, I want to be able to input one or more artists into the chat after prompted and get a playlist based on those artists | 25 | Sprint 2 |
| 10 | As a user, I want to be able to view what is the most common genre that I listen to. | 15 | Sprint 1 |
| 11 | As a user, I want to be able to view the most common key of the music I listen to. | 15 | Sprint 1 |
| 12 | As a user, I want to be able to see the happiest songs that I listen to. | 15 | Sprint 1 |
| 13 | As a user, I want to be able to see the saddest songs that I listen to. | 15 | Sprint 1 |
| 14 | As a user I want to be able to view the slowest songs that I listen to. | 15 | Sprint 1 |
| 15 | As a user, I want to be able to view the fastest songs that I listen to. | 15 | Sprint 1 |

## NON-FUNCTIONAL REQUIREMENTS

| # | Non-Functional Requirements |
|---|---|
| 1 | I want the conversation with spotibot to be seamless. |
| 2 | I want to access the bot on mobile and non-mobile devices. |
| 3 | I want to generate a description for each playlist created. |
| 4 | I want to save user metrics in a database. |
| 5 | I want SpotiBot to have graceful fallbacks on requests it does not understand. |
| 6 | I want to cache authentication tokens in the database. |

## USE CASES

Case 1: As a user, I want to be able to sign into my Facebook Messenger account

| Action | System Response |
|---|---|
| 1. Go to facebook.com or messenger.com and click login | 2. Loads the login page |
| 3. Input login information | 4. If correct, takes user to Facebook or Messenger homepage |
| 5. In the Messenger platform, search for “SpotiBot” | 7. Open a new conversation with SpotiBot |
| 6. Click on “SpotiBot” | 8. Prompt user to login to their Spotify account |

Case 2: As a user, I want to be able to sign into my Spotify account, given that I have a Messenger account or Facebook account

| Action | System Response |
|---|---|

| | |
|---|---|
| 2. Click on “Login to Spotify” | 1. Prompt user in the Messenger platform to login to their Spotify |
| 4. Input Spotify login credentials to authorize SpotiBot | 3. Redirect user to Spotify login page to authorize SpotiBot |
| | 5. Redirect user back to SpotiBot |

Case 3: As a user, I want to be able to tell the bot how many songs I want in the playlist.

| **Action** | **System Response** |
|---|---|
| 2. The user responds with a number greater than 0. | 1. Ask user how many songs they want to include in their playlist. |
| | 3. SpotiBot accordingly sets the playlist size to the user response. |

Case 4: As a user, I want to be able to input a number of months and get a playlist of my top tracks from that time period

| **Action** | **System Response** |
|---|---|
| 2. The user responds “yes” or “nah” | 1. SpotiBot asks the user if they would like a playlist of their most listened to songs. |
| 4. User responds with a number between 1-100 (“y’) | 3. SpotiBot asks the user how many songs |
| 6. User responds with a number between 1-6 (‘x”) | 5. SpotiBot asks the user how many months they want to include of their listening history |
| | 8. SpotiBot accordingly fetches the listening history for the past “x” months and generates a playlist of their top “y” most listened to tracks |

Case 5: As a user, I want to be able to input one or more genres into the chat after prompted and get a playlist based on those genres.

| **Action** | **System Response** |
|---|---|

| | |
|---|---|
| 2. The user responds with a list of 1+ genres or “nah” | 1. Ask user if they would like to input any genres to factor into their playlist generation |
| | 3. SpotiBot accordingly queries the Top [*genre_name*] playlist for songs and adds some to the new playlist |

Case 6: As a user, I want to be able to input one or more moods into the chat after prompted and get a playlist based on those moods.

| **Action** | **System Response** |
|---|---|
| 2. The user responds with a list of 1+ moods or “nah” | 1. Ask user if they would like to input any moods to factor into their playlist generation |
| | 3. SpotiBot accordingly queries the [*mood_name*] category and adds some songs to the new playlist |

Case 7: As a user, I want to be able to input one or more songs into the chat after prompted and get a playlist based on those songs.

| **Action** | **System Response** |
|---|---|
| 2. The user responds with a list of 1+ songs or “nah” | 1. Ask user if they would like to input any songs to factor into their playlist generation |
| | 3. SpotiBot accordingly queries the song(s), finds recommended songs based on those songs, and adds those songs to the new playlist |

Case 8: As a user, I want to be able to input one or more of my playlists into the chat after prompted and get a playlist based on those playlists.

| **Action** | **System Response** |
|---|---|
| 2. The user responds with a list of 1+ | 1. Ask user if they would like to input any |

| | |
|---|---|
| playlists or “nah” | playlist(s) to factor into their playlist generation |
| | 3. SpotiBot accordingly queries the playlist(s) and uses the “Recommended Songs Based on the Songs in this Playlist” to find songs for the new playlist and adds them |

Case 9: As a user, I want to be able to input one or more artists into the chat after prompted and get a playlist based on those artists.

| **Action** | **System Response** |
|---|---|
| 2. The user responds with a list of 1+ artists followed by the song count, or “nah” | 1. Ask user if they would like to input any specific artists, as well as the amount of an artist’s songs to factor into their playlist generation. |
| | 3. SpotiBot accordingly queries the artist(s) and songs, finds recommended songs based on those artist(s), and adds those songs to the new playlist |

Case 11: As a user, I want to be able to view what is the most common genre that I listen to.

| **Action** | **System Response** |
|---|---|
| 2. The user responds “yes” or “nah” | 1. SpotiBot asks the user if they would like to view their listening statistics. |
| | 3. SpotiBot returns a list of all the user’s statistics, including their most listened to genre. |

Case 12: As a user, I want to be able to view the most common key of the music I listen to.

| **Action** | **System Response** |
|---|---|

| | |
|---|---|
| 2. The user responds “yes” or “nah” | 1. SpotiBot asks the user if they would like to view their listening statistics. |
| | 3. If the user responds no SpotiBot does nothing. Otherwise, SpotiBot returns a list of all the user’s statistics, including their most common song key. |

Case 13: As a user, I want to be able to see the happiest songs that I listen to.

| **Action** | **System Response** |
|---|---|
| 2. The user responds “yes” or “nah” | 1. SpotiBot asks the user if they would like to view their listening statistics. |
| | 3. If the user responds no SpotiBot does nothing. Otherwise, SpotiBot returns a list of all the user’s statistics, including the happiest songs they’ve listened to. |

Case 14: As a user, I want to be able to see the saddest songs that I listen to.

| **Action** | **System Response** |
|---|---|
| 2. The user responds “yes” or “nah” | 1. SpotiBot asks the user if they would like to view their listening statistics. |
| | 3. If the user responds no SpotiBot does nothing. Otherwise, SpotiBot returns a list of all the user’s statistics, including the saddest songs they’ve listened to. |

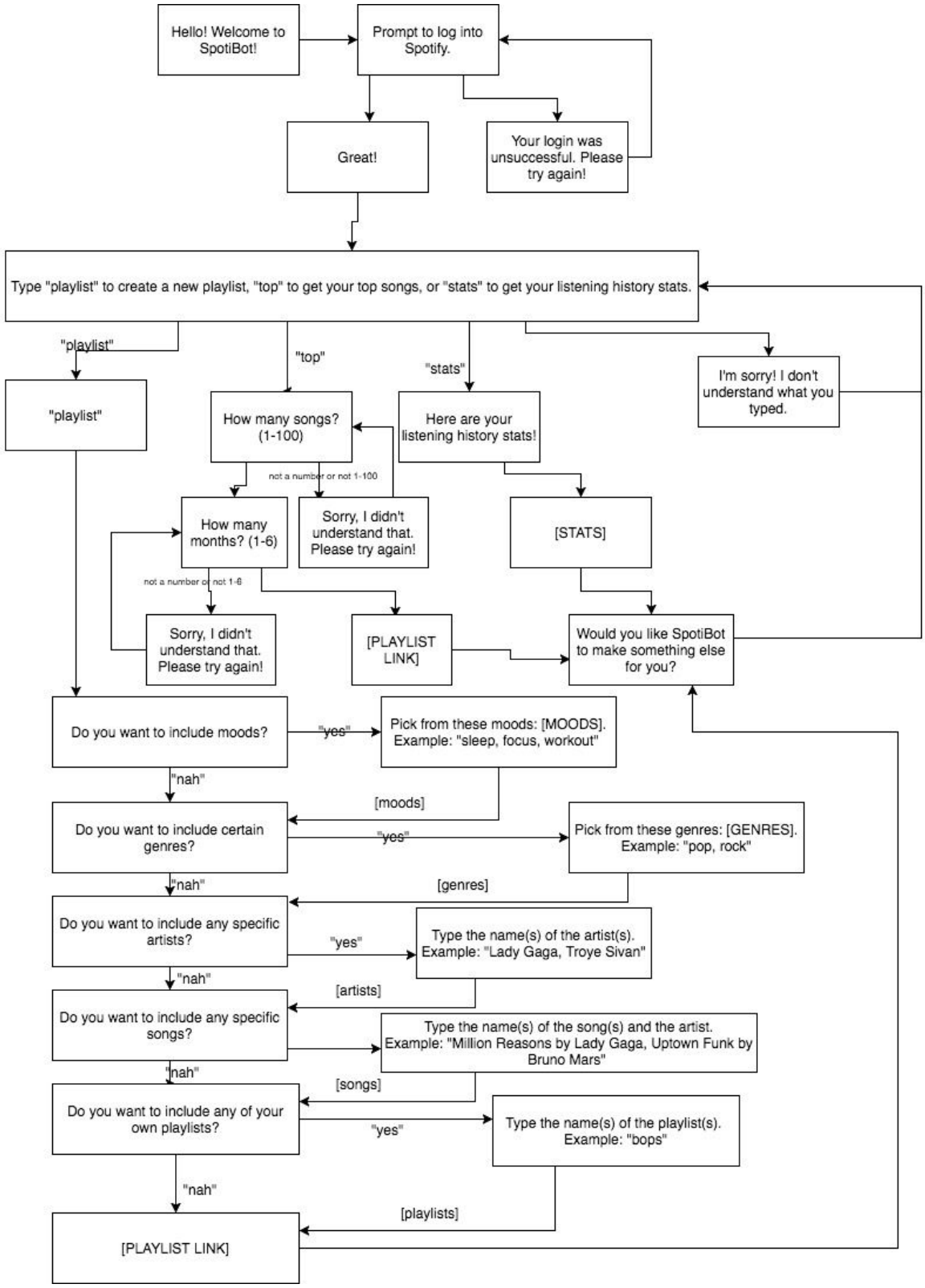
Case 15: As a user I want to be able to view the slowest songs that I listen to.

| **Action** | **System Response** |
|---|---|
| 2. The user responds “yes” or “nah” | 1. SpotiBot asks the user if they would like to view their listening statistics. |
| | 3. If the user responds no SpotiBot does nothing. Otherwise, SpotiBot returns a list of all the user’s statistics, including the slowest songs they’ve listened to. |

Case 16: As a user, I want to be able to view the fastest songs that I listen to.

| **Action** | **System Response** |
|---|---|
| 2. The user responds “yes” or “nah” | 1. SpotiBot asks the user if they would like to view their listening statistics. |
| | 3. If the user responds no SpotiBot does nothing. Otherwise, SpotiBot returns a list of all the user’s statistics, including the fastest songs they’ve listened to. |

## Workflow


Hello! Welcome to SpotiBot!
Prompt to log into Spotify.
Great!
Your login was unsuccessful. Please try again!
Type "playlist" to create a new playlist, "top" to get your top songs, or "stats" to get your listening history stats.
"playlist"
"top"
"stats"
I'm sorry! I don't understand what you typed.
"playlist"
How many songs? (1-100)
Here are your listening history stats!
not a number or not 1-100
How many months? (1-6)
Sorry, I didn't understand that. Please try again!
[STATS]
not a number or not 1-6
Sorry, I didn't understand that. Please try again!
[PLAYLIST LINK]
Would you like SpotiBot to make something else for you?
Do you want to include moods?
"yes"
Pick from these moods: [MOODS]. Example: "sleep, focus, workout"
"nah"
[moods]
Do you want to include certain genres?
"yes"
Pick from these genres: [GENRES]. Example: "pop, rock"
"nah"
[genres]
Do you want to include any specific artists?
"yes"
Type the name(s) of the artist(s). Example: "Lady Gaga, Troye Sivan"
"nah"
[artists]
Do you want to include any specific songs?
Type the name(s) of the song(s) and the artist. Example: "Million Reasons by Lady Gaga, Uptown Funk by Bruno Mars"
"nah"
[songs]
Do you want to include any of your own playlists?
"yes"
Type the name(s) of the playlist(s). Example: "bops"
"nah"
[playlists]
[PLAYLIST LINK]