

## Working Prototype

Product: Rootify

Team: Rootify

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### Known/possible problems:

- Node.js application may not start on an older version of node.js (latest version is v9.2.0)
- Primarily designed for the latest versions of Google Chrome and Firefox (may work on other browsers or older versions of Chrome or Firefox).
- The visualization will not load if Spotify servers (e.g. Spotify Web API servers) are down
- Using the minimum value for “Max tracks” in the dialog menu doesn’t create a playlist
  - Solution: Go to generate playlist code and correct the ReferenceError.
- The ‘Popularity’ filter option for the ‘Generate’ tab does not work.
  - Solution: Remove the option: market “US” when retrieving potential tracks.
    - Grab 50 tracks, go through each one and check if track is in U.S.
      - If so, add it to the generated playlist.
      - Break out of the loop once max. tracks is reached or if this is the first pass, then grab another 50 tracks and repeat above.
- Clicking ‘RESET TREE’ after expanding a track or an artist may not remove any pending nodes (tracks or artists) to be added to the tree. If the client is quick to press this button before the nodes enter into view, then the nodes won’t be removed during the tree reset.
- Switching modes after expanding a track or an artist but before the new nodes (tracks and artists) appear in the tree will likely will produce an error/strange behavior.
  - Solution: Prevent nodes from entering the tree (the update() function being called) when switching modes.
- Once the logged in Spotify user’s access token expires, Rootify will attempt to retrieve a new one. In testing, it has worked each time but this doesn’t mean that it couldn’t fail. If it’s unable to fetch a new access token, nothing will occur and the user will not be able to branch out the tree further, search for tracks and artists, generate a recommended playlist, etc.
  - Failure could happen as a result of the hosted website not being up or available.
    - Solution: Use a better web host.
  - Failure could occur as part of a fault.
    - Solution: Relook at and verify code (and make corrections if necessary).
- Clicking “LOGOUT” will cause another tab with Rootify open not be able to generate a refresh token (when or if that time comes).
  - Solution: Avoid clearing refresh token cookie, or even using a token for the refresh token and use a variable instead.
- Interleaving logging into Rootify will result in unexpected behaviors. Must be done serially to conform to expectations.

- Opening another browser tab of Rootify and logging in serially will cause undesired issues when a new access token is retrieved because, as of right now, the refresh token is being accessed as a web cookie.
  - Solution: Move refresh token to a variable.
- Going to <http://localhost:8888/home> after logging in (say, on another browser tab) will cause the last Spotify user's access and refresh tokens to be used.
  - Solution: Remove cookies all together and favor variables. However, this will prevent the user from being able to refresh the page to reload the tree.
- Safari causes some of the track album art or artist images to display white (missing?).
  - Solution: Research problem online and apply known solution(s).
- Firefox makes the track album art images and artist images look crispy.
  - Solution: Research problem online. Apply each one until fixed or realization that it can't be solved. Possible CSS or DOM attribute fix.
- The tab colors (for the sidebar) don't work properly in Firefox.
  - Research problem and apply correcting HTML/CSS.
- Clicking on the 'GENERATE PLAYLIST' button more than once in the dialog box for generating a playlist will cause more than one playlist to be created.
  - Solution: Add a variable to prevent creating a playlist when one is being created.
- Spamming the "SHORT-TERM," "LONG-TERM," and "RESET TREE" buttons at the top *may* cause the tree to glitch out and break (it won't show any of your top tracks and artists)
  - Solution: Adding more prevention constructs in the code to stop the tree from switching modes or resetting when a transition is in progress.
- The width of the bar graph box in 'Details' sometimes doesn't fully update properly
  - Solution: Locate the code which manages the width of the bar graph container and ensure that this method is being called when nodes are clicked.
- Making the width and height of the webpage small enough will cause text in certain places of the webpage to collide with other HTML/DOM elements.
- The position and/or text of the "Generate Playlist" button in the 'Generate' tab *may* not be perfect (i.e. could be positioned incorrectly and/or the text may not be fully centered).
  - Solution: Research similar problems and try to apply known CSS patterns to prevent this.
- If the client has a slow Internet connection...
  - Fetching and displaying their Spotify top tracks and artists (in the form of nodes in the tree) may be delayed.
    - Album art or artist images may not load properly
  - A track's Spotify widget player may take a while to load in the 'Details' tab
  - An artist's top tracks may take a while to load.
  - Generating a recommended playlist may take a while to create.
  - Searching for a track may take a while to load results.
  - Searching for an artist may take a while to load results.
  - Solution: Ensure a decent Internet connection is established when using Rootify.
- Album art or artist images may not load (in testing, this has only happened once)

- For the results in searching for tracks and artists, track album art and artist images are not vertically centered.
  - Solution: Research solutions to vertically centering and apply the relevant HTML/CSS code.
- The Spotify widget player is known to be buggy and imperfect (i.e. it may not show immediately, playing tracks may be slow or not occur). It works relatively well but sometimes it doesn't work as expected. It's highly recommended to have Spotify installed and opened on the working machine before clicking the play button on a Spotify player.
  - Solution: Wait for Spotify to improve the player or make our own.
- If the user has an ad blocker installed on their browser, there will be errors displayed in console. Rootify's functionality *may* be affected by this.
  - Solution: Disable ad blocker when using Rootify to hide these error messages in console.
- When the visualization page is loaded, there are (at least in Chrome) several warning messages in regards to fonts.
  - Solution: Take a closer look at warning messages, then research and correct them.
- May not work for browser beyond the latest versions of Google Chrome and Firefox.
  - Solution: Add support for other browsers (both new and older versions)
- May not work on mobile browsers.
  - Solution: Specifically develop the application for mobile browsers
- If the Spotify Web API servers are down, functionalities involving logging into Rootify and querying the Spotify database (through the Spotify Web API) will not work.
- The tree will not appear on Safari version 9.0.1. Possibly Safari 10 does not work either.
  - However, it does work on the recent updated Safari, which is currently version +11
- On Safari: The Hamburger Menu is incorrectly displayed when you do minimize the width of the window.

### **Acceptance Test: Suggested User Stories**

- “As a developer, I want to create a Spotify login so that users can login to their Spotify accounts to access the visualization.” (3)
- “As a Spotify User, I want a sidebar so I can access track filtering options and track/artist details so that I can be able to create a recommended playlist and view information.” (3)
- “As a Spotify user, I want the ability to switch between long-term and short-term top 5 tracks and artists so I can easily see and discover new music based on my listening history.” (3)
- “As a Spotify user, I want to find related artists based on who I listen to so that I can discover new artists.” (3)
- “As a Spotify user, I want to see related tracks based on what I listen to so that I can discover new tracks.” (2)
- “As a Spotify user, I want the ability to select an artist and preview their top songs or preview a single track.” (3)
- “As a Spotify user, I want to be able to view artist details (associated genres and popularity) and track details (happiness, energy, tempo, key (tonic), major or minor, etc) so I can learn more about my taste in music and specific artists and tracks.” (8)
- “As a Spotify user, I want to be able to visualize certain features of my top long-term and short-term artists and tracks alongside related artists and recommended tracks so that I can see how each artist and track compares to each other in order to gain better insight into my taste in music.” (8)
- “As a Spotify user, I want to have a bar near the bottom to control which audio features of my top tracks and artists (and related tracks and artists) so that I can narrow down specific artists and tracks based on criteria and learn about my taste in music.” (5)
- “As a Spotify user, I want the ability to create a recommended playlist based on my selected artists, tracks, and/or genres and filtering options so that I can explore and discover new music.” (8)
- “As a Spotify user, I want the ability to name the new recommended playlist based on my selected artists, tracks, and/or genres and filtering options so I distinguish my name playlist from my other playlists.” (3)

- “As a Spotify user, I want to be able to see a node’s track name and artist if it’s a track and a node’s artist name if the node represents an artist so that I can easily distinguish between nodes with the same album art or have similar images.” (3)
- “As a Spotify user, I want a help and about page so I have a better understanding how to use the program if I am confused.” (2)
- “As a Spotify user, I want to be able to search for a track and add it to my selected tracks so that I can improve my recommended playlist.” (3)
- “As a Spotify user, I want to be able to search for an artist and add it to my selected tracks so that I can improve my recommended playlist.” (3)
- “As a Spotify user, I want to be able to reset the tree so that I can rediscover related tracks and artists.” (1)
- “As a Spotify user, I want to be able to minimize a node’s children so that I can make the tree cleaner and easier to understand and read.” (2)
- “As a Spotify user, I want to be able to zoom in and out of the tree and click and drag so that I can have control over the tree.” (2)