System and Unit Test Report

Product: Rootify
Team: Rootify
Date: 12/1/2017

System Test scenarios:

Sprint 1:

(**User story 1 & 2** do not apply here)

User story 3: "As a developer, I want to create a Spotify login so that users can login to their Spotify accounts to access the visualization."

1. Navigate to the Rootify site.
2. Click "Login with Spotify".
3. Follow instructions (i.e. enter Spotify credentials, click login, then click the 'OKAY' button to allow Rootify to access account information).
4. The user should have to wait less than 5 seconds and then should see a page with a tree and other layout features of the page.

User story 4: "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."

1. Navigate to Rootify site and login with Spotify credentials.
2. The user should see a sidebar on the right-hand side of the loaded page.

User story 5: "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."

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds see the Spotify account's top 5 short-term tracks and artists have loaded.
3. Click the "LONG-TERM" button at the top. The user should see the tree display the account's long-term tracks and artists (based on Spotify listening history)
4. The user should have to wait less than 5 seconds to see the account's top 5 long-term tracks and artists have loaded.
5. Click the "SHORT-TERM" button at the top.
6. Repeat the above process (starting at step 2) when desired.

User story 6: “As a Spotify user, I want to find related artists based on who I listen to so that I can discover new artists.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Click on a downward arrow to an artist (represented by a circle, on the right of the tree).
4. The user should have to wait less than 5 seconds and then see that up to a **maximum of 3** artists have been added below the selected artist (in the form of circles) and are connected to the artist whose arrow was clicked.

<u>Sprint 2</u>:

(**User story 1** does not apply here)

User story 2: “As a Spotify user, I want to see related tracks based on what I listen so that I can discover new tracks.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Click on a downward arrow to a track (represented by a square, on the right of the tree).
4. The user should have to wait less than 5 seconds and then should see up to a **maximum of 3** tracks have been added below the selected artist (in the form of squares) and are connected to the track whose arrow was clicked.

User story 3: “As a Spotify user, I want the ability to select an artist and preview their top songs or preview a single track.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and should see that the account’s top 5 short-term tracks and artists have loaded.
3. Click on any artist (represented by circles on the right-hand side of the tree)
4. The user should have to wait less than 5 seconds and then should see that the artist’s image art appears with a **maximum of 3** of the artist’s top tracks underneath the image in the ‘Details’ tab.
5. Click the play button for any of the preview of the top tracks. If the user has Spotify open, the track should start to play. If Spotify is not open, then

either (1) Spotify should open and play the selected track or (2) play a preview of that track.

6. Click on any track (represented by rectangles on the left-hand side of the tree).
7. The user should have to wait less than 5 seconds and then should see that the track's album art and a Spotify player for that track shows up in the 'Details' tab.
8. Click the play button for that selected track. If the user has Spotify open, the track should start to play. If Spotify is not open, then either (1) Spotify should open and play the selected track or (2) play a preview of that track.

Sprint 3:

User story 1: "As a Spotify user, I want to be able to view artist details (associated genres and popularity) or track details (danceability, energy, popularity, valence, key, and major/minor) so I can learn more about my taste in music and specific artists and tracks."

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account's top 5 short-term tracks and artists have loaded.
3. Click on any artist (represented by circles in the right side of the tree)
4. The user should have to wait less than 5 seconds and then should see that the artist's name and image art appears. Also, the user should see a **maximum of 3** of the artist's top tracks, their popularity, and their associated genres.
5. Click on any track (represented by rectangles on the left-hand side of the tree).
6. The user should have to wait less than 5 seconds and then should see that track's album art with a Spotify player for that track. They should also see bars that measure the track's danceability, energy, popularity, happiness, and tonic key underneath the track player.

User story 2: "As a Spotify user, I want to be able to see and 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."

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account's top 5 short-term tracks and artists have loaded.
3. Check the popularity box and the user should see the size of artist and track nodes in the tree change based off of popularity.

4. Check the danceability, energy, and happiness boxes individually and the user should see the tracks and artists in the tree resize according to their attribute in each category.
5. Check any combination of the popularity, danceability, energy, and happiness boxes and the user should that the tracks and artists resize according to the checked attributes.
6. Adjust the popularity, danceability, energy, and happiness filter sliders and the user should see that the tracks and artists in the tree grayed out if their attributes for at least one of the categories did not fall in the range as specified by the sliders.

User story 3: “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) I can visualize so that I can narrow down specific artists and tracks based on criteria and learn more about my taste in music.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. The user should see a green button with an upward arrow inside at the bottom of the visualization page.
4. Click on the button and the user should see the bottom bar pop up.
5. The user should see 4 checkboxes for popularity, danceability, happiness, and energy on the left-hand side of the bottom bar. The user should see 4 sliders for the same attributes on the right-hand side of the bottom bar.

User story 4: “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.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Click on the ‘Generate’ tab in the sidebar on the right-hand side.
4. Select up to a **combination of up to a maximum of 5** tracks, artists, and genres. The user should see the selected nodes in the tree with either an orange or green outline.
5. The user should be able to see rows for each of their selected tracks and artists under the ‘Selected’ section. Each row should have an ‘x’ on the right-hand side.
6. (Optional) Search for a track (or multiple tracks) to add to the ‘Selected’ list. The user should see the selected track added to the list (unless a maximum of limited 5 has already been reached). If the track is in the tree, the user should see it become outlined in green.

7. (Optional) Search for artist (or multiple artists) to add to the ‘Selected’ list. The user should see the selected artist added to the ‘Selected’ list (unless the maximum limit of 5 has been already reached). If the artist in in the tree, the user should see it become outlined in green.
8. (Optional) Click the ‘x’ for a track, artist, or genre and the corresponding row or object the user should it removed from their current selection.
9. (Optional) Adjust filter options as desired.
10. Click on the ‘GENERATE PLAYLIST’ button at the bottom of the ‘Generate’ tab.
11. The user should see a dialog box appear if the ‘Selected’ list has at least one selection.
12. (Optional) Enter a playlist name
13. (Optional) Adjust the maximum number of similar/recommended tracks to make up this playlist.
14. Click ‘GENERATE PLAYLIST’ in the dialog box.
15. The user should see the button text change to ‘CREATING PLAYLIST…’ and then wait no more than 5 seconds.
16. The button text should change indicating if the playlist was created or not.
17. The user should see the dialog box close.
18. The user should see the ‘Generate’ tab display the tracks from the newly generated recommended playlist.
19. The user should be able to believe that the generated recommended tracks for the new playlist fit their selection and filtering criteria.
20. The user should be able to see the new playlist (with the specified name and maximum number of tracks) in their Spotify account immediately.

Sprint 4:

User story 1: “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”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. The user should see white text under the track nodes that correspond to the track name. The user should see green text under the white track name text for the artist name.
4. The user should see green text under the artist nodes that correspond to the artist name.

User story 2: “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.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account's top 5 short-term tracks and artists have loaded.
3. Click on the 'Generate' tab in the sidebar on the right-hand side.
4. Select up to a combination of up to a maximum of 5 tracks, artists, and genres. The user should see the selected nodes in the tree with either an orange or green outline.
5. The user should be able to see rows for each of their selected tracks and artists under the 'Selected' section. Each row should have an 'x' on the right-hand side.
6. (Optional) Search for a track (or multiple tracks) to add to the 'Selected' list. The user should see the selected track added to the list (unless a maximum of limited 5 has already been reached). If the track is in the tree, the user should see it become outlined in green.
7. (Optional) Search for artist (or multiple artists) to add to the 'Selected' list. The user should see the selected artist added to the 'Selected' list (unless the maximum limit of 5 has been already reached). If the artist in in the tree, the user should see it become outlined in green.
8. (Optional) Click the 'x' for a track, artist, or genre and the corresponding row or object the user should it removed from their current selection.
9. (Optional) Adjust filter options as desired.
10. Click on the 'GENERATE PLAYLIST' button at the bottom of the 'Generate' tab.
11. The user should see a dialog box appear if the 'Selected' list has at least one selection.
12. **Enter a playlist name**
13. (Optional) Adjust the maximum number of similar/recommended tracks to make up this playlist.
14. Click 'GENERATE PLAYLIST' in the dialog box.
15. The user should see the button text change to 'CREATING PLAYLIST…' and then wait no more than 5 seconds.
16. The button text should change indicating if the playlist was created or not.
17. The user should see the dialog box close.
18. The user should see the 'Generate' tab display the tracks from the newly generated recommended playlist.
19. The user should be able to believe that the generated recommended tracks for the new playlist fit their selection and filtering criteria.
20. The user should be able to see the new playlist (with the specified name and maximum number of tracks) in their Spotify account immediately.

Note: These are the same steps as user story 4 from the previous sprint. The only change is emphasis on step 12.

User story 3: "As a user, I want a help and about page so I have a better understanding how to use the program if I am confused."

1. Navigate to the Rootify site (the user should see it load).
    a. Click the ‘About’ button on the top right of the page.
        i. The user should be redirected to a project about page on a separate browser tab.
    b. Click the ‘Help’ button on the top right of the page.
        i. The user should be redirected to a project help/guide page on a separate browser tab.

User story 4: “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.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Click on the ‘Generate’ tab in the sidebar on the right-hand side.
4. The user should see the tab load.
5. Under the section ‘Search Tracks,’ click on the white box.
6. Enter any track name.
7. The user should see results load every second as they type.
8. Click on a desired track.
9. The user should see the track added to the ‘Selected’ list **unless** a maximum combination of 5 tracks, artists, and genres have already been selected.
10. If the track is present in the tree, the user should be able to see the node is now outlined in green.
11. The user should not be able to see tracks in the results window if they are already in the ‘Selected’ tree.

User story 5: “As a Spotify user, I want to be able to search for an artist and add it to my selected artists so that I can improve my recommended playlist.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Click on the ‘Generate’ tab in the sidebar on the right-hand side.
4. The user should see the tab load.
5. Under the section ‘Search Artists,’ click on the white box.
6. Enter any artist name.
7. The user should see results load every second as they type.
8. Click on a desired artist.
9. The user should see the artist added to the ‘Selected’ list unless a maximum combination of 5 tracks, artists, and genres have already been selected.
10. If the artist is present in the tree, the user should be able to see the node is now outlined in green.
11. The user should not be able to see artists in the results window if they are already in the ‘Selected’ tree.

User story 6: “As a Spotify user, I want to be able to reset the tree so that I can rediscover related tracks and artists.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Click on the downward triangle for a couple of tracks and artists.
4. The user should have to wait less than 5 seconds for related tracks and artists to appear in the tree (per clicked triangle).
5. Click on the ‘RESET TREE’ button at the top of the page.
6. The user should see the tracks and artist nodes minimize and disappear to the root node (representing the Spotify user account).
7. Click on a track or artist whose down triangle was clicked earlier.
8. The user should see new related tracks or artists (i.e. the root’s children’s children was cleared). There is a chance that they may be the same (this is more true for artists), but in practice, they will most likely be different.

User story 7: “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.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Click on the downward triangle for a couple of tracks and artists.
4. The user should have to wait less than 5 seconds for related tracks and artists to appear in the tree (per clicked triangle).
5. Click on the upward triangle located under a track or artist.
6. The user should see the related tracks or artist nodes minimize to the track or artist whose triangle was clicked.
7. Click on the downward triangle for that same track or artist.
8. The user should see the minimized track(s) or artist(s) reappear unchanged.

User story 8: “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.”

1. Navigate to the Rootify site and login.
2. The user should have to wait less than 5 seconds and then should see that the Spotify account’s top 5 short-term tracks and artists have loaded.
3. Zoom in (with mouse scroll wheel) over the tree on the page.
4. The user should see the tree get bigger.
5. Zoom out (with mouse scroll wheel) over the tree.
6. The user should see the tree get smaller.

7. Hold left mouse click over the tree (and possibly over a node) and move the mouse either up, down, left, or right.
8. The user should see the tree move relative to the mouse.

Unit Testing:

Please see the master branch of our GitHub repository for our unit testing documents. They are located in the main directory in a folder called '**Testing**'.