**Unit Test Cases for Search and Listening tool pages**

**Search Page:**

1. **Search Functionality:**

* Description: User can search for hashtags, brands, or events related to Twitter.
* Test Cases:
  + User enters a hashtag, brand or event in the search input field and presses the enter key.
  + User enters a hashtag, brand or event in the search input field and clicks the search icon.
  + User navigates to the Listening Tool page after initiating the search.

2. **Filtering by Region and Country:**

* Description: User can filter search results by region and country.
* Test Cases:
  + User clicks on the filter icon to access filter options.
  + User selects a specific region (e.g., Africa, Asia, Australia, Europe, North America, South America) from the dropdown menu.
  + User selects specific countries within the chosen region.
  + User uses the search bar within the filter options to search for a specific region or country.

3. **Saved Searches:**

* Description: User's saved searches are displayed on the Search page.
* Test Cases:
  + User's 3 saved searches are correctly displayed on the Search page.
  + User clicks the "View All" button to view all saved searches.

4. **Trending Hashtags:**

* Description: List of trending hashtags in the last 24 hours is displayed.
* Test Cases:
  + Verify that correct trending hashtags are displayed on the Search page.

5. **Navigation:**

* Description: User can navigate to other pages using the navigation buttons in the navbar.
* Test Cases:
  + User clicks on the "Listening Analysis" button and verifies navigation.
  + User clicks on the "Results" button and verifies navigation.

6. **Notifications:**

* Description: User can view notifications by clicking on the notification icon.
* Test Cases:
  + User clicks on the notification icon and verifies that notifications are displayed.

7. **Logout:**

* Description: User can logout from the application by clicking on the logout icon.
* Test Cases:
  + User clicks on the logout icon and verifies that they are logged out and redirected to the login page.

**Listening Tool Page:**

1. **Display Tweets:**

* Description: Tweets containing the searched hashtag are fetched from the Twitter API and displayed.
* Test Cases:
  + Tweets are fetched and displayed correctly when the user searches for a hashtag.
  + Verify that the correct number of tweets are displayed.

2. **Filters:**

* Description: User can apply various filters to refine the displayed tweets metrics.
* Test Cases:
  + User selects positive sentiment filter.
  + User selects negative sentiment filter.
  + User selects neutral sentiment filter.
  + User selects Urdu language filter.
  + User selects English language filter.
  + User selects age filter (e.g., 18-24, 25-34, 35-44, 45-54, 55-64, 65+).
  + User selects male gender filter.
  + User selects female gender filter.
  + User selects mobile device filter.
  + User selects desktop device filter.
  + User selects tablet device filter.
  + User selects custom date range filter.
  + User selects predefined date range filter (e.g., 1 day, 7 days, 1 month).
  + User clicks on the “Clear Filters” button and verifies that all filters are reset to their default state.

3. **Display Summary Metrics:**

* Description: Summary metrics such as combined total results, total engagement, sentiment breakdown, and reach are displayed.
* Test Cases:
  + Verify that combined total results are accurately displayed.
  + Verify that total engagement is accurately displayed.
  + Verify that sentiment breakdown (positive, negative) is accurately displayed.
  + Verify that reach metric is accurately displayed.

4. **Display Graphs:**

* Description: Graphs provide visual representation of data.
* Test Cases:
  + Verify that results over time graph is displayed and accurate.
  + Verify that net sentiment over time graph is displayed and accurate.

5. **Display Cloud Models:**

* Description: Word cloud and emoji cloud models provide visual representation of popular words and emojis in tweets.
* Test Cases:

1. Verify World Cloud Model:
   1. Select the "Bio" option for the word cloud model.
   2. Verify that the word cloud is displayed.
   3. Check that the words in the cloud accurately represent popular terms found in tweet bios.
   4. Ensure that the size of each word corresponds to its frequency in the tweets.
2. Verify Emoji Cloud Model:
   1. Select the "Emojis" option for the emoji cloud model.
   2. Verify that the emoji cloud is displayed.
   3. Check that the emojis in the cloud accurately represent popular emojis used in tweets.
   4. Ensure that the size of each emoji corresponds to its frequency in the tweets.

6. **Comparison:**

* Description: User can compare two keywords.
* Test Cases:
  + User enters two keywords for comparison.
  + Verify that total results for both keywords are accurately displayed.
  + Verify that engagement and reach graphs accurately compare the two keywords.
  + Verify that results over time graph accurately compares the two keywords.
  + Verify that net sentiment over time graph accurately compares the two keywords.

7. **Graph Point Navigation:**

* Description: Users can interact with graphs by clicking on specific data points. Clicking on a point navigates the user to the results page, where only the results corresponding to that data point are displayed.
* Test Cases:
  + Identify a data point of interest on the graph.
  + Click on the selected data point.
  + Verify that the user is redirected to the results page.
  + Ensure that only the results corresponding to the selected data point are displayed on the results page.

8. **Saved Searches:**

* Description: Users can view and manage their saved searches.
* Test Cases:

1. Save Search: Verify that users can save their searches successfully.
   1. Click on the "Save Search" button.
   2. Enter a search query in the input field.
   3. Click on the "Save" button.
   4. Ensure that the search is saved successfully.
   5. Verify that the modal closes after saving the search.
2. My Searches: Verify that users can access and manage their saved searches.
   1. Click on the "My Searches" button.
   2. Verify that a modal window appears displaying the list of saved searches.
   3. Check that each saved search is listed accurately.
   4. Verify that users can edit a saved search by clicking on the "Rename" icon.
   5. Verify that users can delete a saved search by clicking on the "Delete" icon.
   6. Ensure that the modal closes after managing saved searches.

9. **Reload Button:**

* Description: Verify that the reload button refreshes the current page.
* Test Cases:
  + Click on the reload button.
  + Ensure that the page reloads or refreshes.
  + Verify that any unsaved changes or user input is retained after reloading.

10. **Navigation:**

* Description: User can navigate to other pages using the navigation buttons in the navbar.
* Test Cases:
  + User clicks on the "Home" button and verifies navigation.
  + User clicks on the "Results" button and verifies navigation.

11. **Notifications:**

* Description: User can view notifications by clicking on the notification icon.
* Test Cases:
  + User clicks on the notification icon and verifies that notifications are displayed.

12. **Logout:**

* Description: User can logout from the application by clicking on the logout icon.
* Test Cases:
  + User clicks on the logout icon and verifies that they are logged out and redirected to the login page.