**Technical Functionality Test Report**

Regarding the FIFA 21 Project

Created by: Sergy Marinho Maia

**1. Test Cases**

Below are the test cases developed to verify the compliance of the platform's functional requirements.

* **CT01 - List all players (with pagination)**
  + **Scenario:** Verify if the list of players is displayed correctly, with functional pagination.
  + **Actions:** Access the player listing page. Navigate between pages.
  + **Obtained Result:** The list displays the correct number of players per page (4 players) and the navigation works without errors, with a total of 18,944 players saved in the database.
* **CT02 - List players by name**
  + **Scenario:** Verify the functionality of searching for players by name.
  + **Actions:** In the search field, type the full name of a player and search. Type a partial name and search. Type a nonexistent name and search.
  + **Obtained Result:** The search returns only the players that match the typed name. The partial name search works. The search for a nonexistent name returns no results.
* **CT03 - List players by team**
  + **Scenario:** Verify the functionality of searching for players by team.
  + **Actions:** Select a team from the filter list or type the team's name in the search field and search.
  + **Obtained Result:** The search returns only the players who belong to the selected team, as expected.
* **CT04 - List players by league**
  + **Scenario:** Verify the functionality of searching for players by league.
  + **Actions:** Select a league from the filter list and search.
  + **Obtained Result:** The search returns only the players who belong to the selected league. The league information should be visible to the user on the frontend.
* **CT05 - List players by nationality**
  + **Scenario:** Verify the functionality of searching for players by nationality.
  + **Actions:** Select a nationality from the filter list and search.
  + **Obtained Result:** The search returns only the players with the selected nationality. The nationality information should be visible to the user on the frontend.
* **CT06 - List players by position**
  + **Scenario:** Verify the functionality of searching for players by position.
  + **Actions:** Select a position from the filter list and search.
  + **Obtained Result:** The search returns only the players who play in the selected position. The list is incomplete, with missing positions that exist in the database from the frontend list (e.g., RW, ST, CF). The list should be complete and correspond to the available position options.
* **CT07 - List player details by ID**
  + **Scenario:** Verify the functionality of displaying a player's details, including their image, from an ID.
  + **Actions:** Click on a player from the list to view their details.
  + **Obtained Result:** A pop-up with all the relevant player details is displayed. However, the image is not functional. The system should include a search tab for ID, which currently does not exist.
* **CT08 - List top-K players (general)**
  + **Scenario:** Verify the functionality of listing the top-K players according to their overall rating.
  + **Actions:** Enter a value for K (e.g., 10, 20) and perform the search.
  + **Obtained Result:** The system displays the top-K players, correctly ordered by their overall rating. However, all filters must be cleared for the search to work correctly.
* **CT09 - List top-K players by position**
  + **Scenario:** Verify the functionality of listing the top players by position.
  + **Actions:** Enter a value for K and select a position (e.g., "ST") and search.
  + **Obtained Result:** The system displays the top-K players for the selected position, correctly ordered. The same issue from TC06 exists, where the list is incomplete (e.g., RW, ST, CF), with positions that exist in the database missing from the frontend list.
* **CT10 - List top-K players by nationality**
  + **Scenario:** Verify the functionality of listing the top players by nationality.
  + **Actions:** Enter a value for K and select a nationality and search.
  + **Obtained Result:** The system displays the top-K players for the selected nationality. The player's nationality information should be visible to the user in the pop-up.
* **CT11 - List top-K players by league**
  + **Scenario:** Verify the functionality of listing the top players by league.
  + **Actions:** Enter a value for K and select a league and search.
  + **Obtained Result:** The system displays the top-K players for the selected league correctly. The league information should be visible to the user in the pop-up.
* **CT12 - List the best team (general)**
  + **Scenario:** Verify the functionality of listing the "best team" without using filters.
  + **Actions:** Execute the search for the best team.
  + **Obtained Result:** The system displays an optimized player lineup, without any filter being used.
* **CT13 - List the best team by league**
  + **Scenario:** Verify the functionality of listing the "best team" for a specific league.
  + **Actions:** Select a league and search for the best team.
  + **Obtained Result:** The system displays an optimized player lineup based only on the players from the selected league.
* **CT14 - List the best team by nationality**
  + **Scenario:** Verify the functionality of listing the "best team" for a specific nationality.
  + **Actions:** Select a nationality and search for the best team.
  + **Obtained Result:** The system displays an optimized player lineup based only on the players from the selected nationality.

**2. Technical Assessment Report**

**Technical Statement:** The application **does not successfully meet** the entirety of the functional requirements. While the backend logic appears to be implemented for several search and listing functionalities, the user experience (UX) and the frontend interface have significant flaws that prevent a complete validation of the requirements, making access to critical information impossible or unintuitive for the user.

Detailed analysis follows:

* **Positive Points:** The functionalities for general listing, searching by player name and team, and the logic for ranking (top-K) and team building (best team) work correctly at the backend level.
* **Failure Points:**
  + The lack of visibility for information such as **nationality and league** in the player details pop-up on the frontend for searches and rankings is a critical usability flaw.
  + The list of player positions is incomplete, which limits the functionality of searching by position.
  + The absence of a search field for a player's ID makes direct access to player details unfeasible, violating a requirement.
  + The failure to load player images is a serious bug that directly affects the presentation of player details.

In summary, the backend shows potential, but the frontend requires urgent fixes and usability improvements for the application to be considered functional and complete.

**3. List of Found Bugs and Severity Analysis**

Here are the identified bugs, with an analysis of their severity. Severity considers the impact on the application's main functionality.

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| --- | --- | --- | --- |
| **Bug ID** | **Bug Description** | **Severity** | **Severity Analysis** |
| **BUG-001** | Player image does not load. The image link is incorrect, resulting in a broken image icon. | **Critical** | Directly affects a main requirement (List player details) and degrades the visual experience and usability. The user cannot see the player's image. |
| **BUG-002** | Player ID search field is missing. There is no way to search directly by ID, making the functionality inaccessible to the user. | **High** | Prevents the user from performing one of the main required actions. Searching by ID is an explicit requirement and is not implemented in the frontend. |
| **BUG-003** | League information is not visible to the user (Player details). | **Medium** | The functionality works on the backend, but the user has no visual feedback. This limits usability and understanding of the result. It is an interface design flaw. |
| **BUG-004** | Nationality information is not visible to the user (Player details). | **Medium** | The same problem as BUG-003, but for nationality. The user cannot visually validate the filter results. |
| **BUG-005** | The list of player positions is incomplete. The filter options on the frontend do not include all existing positions (e.g., RW, ST, CF). | **High** | Affects the ability to search by position, as the user cannot filter by all available options. The scope of the functionality is limited. |

**4. Relevant Artifacts and Recommendations**

* **Recommendations for Improvement:**
  + **Backend:** Correct the image links in the database or in the code that consumes the API so that the URLs are valid and the images load.
  + **Frontend:**
    - Add text fields or dropdowns to display information such as **League** and **Nationality** in search results and player details.
    - Include a search field for **ID** in the interface.
    - Complete the list of **positions** in the search filters to cover all player positions.