Chpter # 3

Log in button:

### Example Table for Login Button Requirements

| **ID** | **Requirement Type** | **Description** | **Priority** | **Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| FR-01 | Functional | The login button must trigger the authentication process. | High | Clicking the login button submits the user credentials to the server for validation. |
| FR-02 | Functional | The login button should ensure that input fields are not empty before submission. | High | If fields are empty, an error message is displayed, and login is not processed. |
|  |  |  |  |  |
| FR-03 | Functional | Upon successful login, the user should be redirected to the dashboard page. | Medium | After successful authentication, the user is taken to the dashboard page. |
| FR-04 | Functional | The login button should display an error message when incorrect credentials are entered. | High | If invalid credentials are used, an appropriate error message should appear. |
| NFR-01 | Non-Functional | The login process should complete within 2 seconds. | High | System must respond and log in the user within 2 seconds. |
| NFR-02 | Non-Functional | The login button should work in all major browsers (Chrome, Firefox, Safari). | Medium | Testing ensures cross-browser compatibility. |
| NFR-03 | Non-Functional | The login button should be accessible via keyboard navigation. | Medium | Users can navigate to the button using only the keyboard. |
| NFR-04 | Non-Functional | The login process should be encrypted (HTTPS). | High | All communication during login must be over a secure channel using HTTPS. |
| FR-05 | Functional | Allow users to reset passwords via a "Forgot Password" link. | Medium | Clicking the "Forgot Password" link directs users to a password reset page. |

### Functional and Non-Functional Requirements for IQ Puzzle Game (Connect the Color Dots)

**Test your iq**

| **ID** | **Requirement Type** | **Description** | **Priority** | **Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| FR-01 | Functional | The game should allow the player to connect two dots of the same color. | High | Players can successfully draw lines between dots of the same color. |
| FR-02 | Functional | The player should not be able to connect dots of different colors. | High | If the player attempts to connect different-colored dots, the action is blocked. |
| FR-03 | Functional | The game should have multiple difficulty levels (easy, medium, hard). | Medium | Difficulty levels are selectable, and each level adjusts puzzle complexity. |
| FR-04 | Functional | A timer should be present to track how long the player takes to solve a puzzle. | Medium | A visible timer counts up or down during the game. |
| FR-05 | Functional | The game should provide visual feedback (e.g., a highlighted line) when two dots are successfully connected. | High | Successfully connecting dots shows a visible line between them. |
| FR-06 | Functional | If the player completes the puzzle, a completion message or score should be displayed. | High | Upon successful completion, the player receives a congratulatory message and score. |
| FR-07 | Functional | The game should provide an option to restart the current puzzle. | Low | A restart button is available, allowing the player to reset the puzzle at any time. |
| NFR-01 | Non-Functional | The game should respond within 0.5 seconds after a player attempts to connect two dots. | High | All player actions receive feedback within 0.5 seconds of being performed. |
| NFR-02 | Non-Functional | The game should support play on both desktop and mobile platforms. | High | The game works consistently across mobile devices and desktops. |
| NFR-03 | Non-Functional | The game must be visually appealing and use intuitive controls. | Medium | Players report a user-friendly interface and good visual design during usability tests. |
| NFR-04 | Non-Functional | The game should be accessible to users with disabilities, including colorblind players (e.g., through shapes or textures). | Medium | Colorblind users can play the game by relying on shapes, textures, or other visual cues. |
| NFR-05 | Non-Functional | The game should perform consistently without lag, even with high difficulty levels and complex puzzles. | High | Game performance is smooth, with no lag reported, even at the highest difficulty levels. |
| NFR-06 | Non-Functional | The game should save the player’s progress automatically if they exit mid-game. | Medium | Progress is automatically saved, and players can resume from where they left off. |
| NFR-07 | Non-Functional | The game should support localization for different languages. | Low | The game supports multiple languages based on the user's preferences. |
| NFR-08 | Non-Functional | The game should be secure, preventing unauthorized access or modification of player data. | High | Player data is protected, and no unauthorized access is allowed during tests. |

Here’s an example of a table that includes both **functional** and **non-functional** requirements for the **Practice Play** use case in your IQ puzzle game. This use case involves a player practicing the game without time constraints or scoring pressure.

### Functional and Non-Functional Requirements for Practice Play in IQ Puzzle Game

| **ID** | **Requirement Type** | **Description** | **Priority** | **Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| FR-01 | Functional | The player should be able to choose the **Practice Play** mode from the main menu. | High | A visible option for Practice Play exists in the main menu and is selectable. |
| FR-02 | Functional | The player should be able to select a difficulty level (easy, medium, hard) in Practice Play. | Medium | Player can successfully choose different difficulty levels for Practice Play. |
| FR-03 | Functional | There should be **no time limit** in Practice Play mode. | High | The game does not show a timer or restrict time in this mode. |
| FR-04 | Functional | There should be **no scoring system** in Practice Play mode. | High | The game does not display a score in Practice Play mode. |
| FR-05 | Functional | The game should allow the player to reset the puzzle and try again without limits. | Medium | Players can reset the current puzzle without restriction and start over. |
| FR-06 | Functional | The player should be able to exit Practice Play mode and return to the main menu at any time. | Medium | A visible "Exit" or "Main Menu" button allows players to return to the main menu anytime. |
| FR-07 | Functional | Practice Play mode should allow the player to pause and resume the game. | Low | A "Pause" and "Resume" feature is available in Practice Play mode. |
| FR-08 | Functional | Practice Play mode should provide hints if the player is stuck. | Low | A "Hint" button is available in Practice Play mode to assist the player. |
| NFR-01 | Non-Functional | The game should load the Practice Play mode within 2 seconds. | High | Practice Play mode loads within 2 seconds of selection. |
| NFR-02 | Non-Functional | The game should ensure that the **Practice Play** mode is visually distinct (e.g., no timer, no score) from regular play modes. | Medium | Players can easily recognize they are in Practice Play mode through the absence of timer and score. |
| NFR-03 | Non-Functional | The game should function smoothly without lag in Practice Play mode, even with complex puzzles. | High | No lag or delays reported during gameplay in Practice Play mode. |
| NFR-04 | Non-Functional | The Practice Play mode should be accessible on both desktop and mobile devices. | High | Practice Play mode works equally well on desktop and mobile platforms. |
| NFR-05 | Non-Functional | The game should allow practice sessions to be **saved** and resumed later. | Medium | Players can save their progress in Practice Play and resume later. |
| NFR-06 | Non-Functional | The game should maintain its performance across all difficulty levels in Practice Play mode. | Medium | Game performance remains consistent at all difficulty levels. |
| NFR-07 | Non-Functional | The game should provide visual or audio feedback in Practice Play mode for completed actions (e.g., when two dots are successfully connected). | Low | Players receive immediate feedback (visual or sound) when completing a move in Practice Play mode. |
| NFR-08 | Non-Functional | The Practice Play mode should be available in multiple languages if the game supports localization. | Low | Players can use Practice Play mode in their preferred language based on localization settings. |

### Functional and Non-Functional Requirements for Play Mode in IQ Puzzle Game

| **ID** | **Requirement Type** | **Description** | **Priority** | **Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| FR-01 | Functional | The player should be able to select **Play Mode** from the main menu. | High | A visible option for Play Mode exists in the main menu and is selectable. |
| FR-02 | Functional | The player should be able to select a puzzle based on different difficulty levels (easy, medium, hard). | High | Players can successfully choose different puzzles based on difficulty. |
| FR-03 | Functional | A **timer** should start when the puzzle begins, and it should stop when the puzzle is completed. | High | A timer starts and stops at appropriate times, tracking the player's time. |
| FR-04 | Functional | The game should display the **player’s score** based on the performance (time taken, accuracy). | High | After completing the puzzle, a score is calculated and displayed based on time and accuracy. |
| FR-05 | Functional | The player should be able to see visual feedback (e.g., lines or colors) when dots are connected correctly. | Medium | Correctly connected dots display a line between them as visual feedback. |
| FR-06 | Functional | The game should prevent players from connecting dots of different colors. | High | Attempts to connect dots of different colors are blocked, and no line is drawn. |
| FR-07 | Functional | The game should provide the option to **pause** and **resume** during gameplay. | Medium | Players can pause the game and later resume without losing progress. |
| FR-08 | Functional | The game should display a **completion message** or screen once the player successfully finishes the puzzle. | High | After solving the puzzle, a completion screen with the player's score appears. |
| FR-09 | Functional | The player should have the option to **restart** the current puzzle at any time. | Low | A restart button is available to reset the puzzle and start over. |
| FR-10 | Functional | If the player fails or cannot complete the puzzle in time, a **failure message** should be displayed. | Low | If the player doesn't complete the puzzle within the time limit, a failure screen appears. |
| NFR-01 | Non-Functional | The game should load the selected puzzle within 2 seconds of choosing a level. | High | The puzzle is loaded within 2 seconds after selection. |
| NFR-02 | Non-Functional | The game should run smoothly without lag, even for high-difficulty puzzles with complex designs. | High | No noticeable lag or performance drops during gameplay, regardless of puzzle complexity. |
| NFR-03 | Non-Functional | The game should be compatible with both desktop and mobile platforms. | High | Play Mode functions smoothly on desktop, tablet, and mobile platforms. |
| NFR-04 | Non-Functional | The game should use minimal battery power on mobile devices. | Medium | Game performance is optimized for low battery consumption during Play Mode on mobile devices. |
| NFR-05 | Non-Functional | The game should provide smooth and responsive user interaction for connecting dots. | Medium | User interactions (e.g., dragging lines between dots) feel immediate and responsive. |
| NFR-06 | Non-Functional | The game should provide visual and/or auditory feedback when a player makes an incorrect move (e.g., connecting wrong dots). | Low | The game gives an error sound or visual feedback when a wrong move is made. |
| NFR-07 | Non-Functional | The game should support localization and allow players to play in different languages. | Low | Players can choose their preferred language, and Play Mode is fully translated. |
| NFR-08 | Non-Functional | The game should be accessible to players with disabilities (e.g., colorblind modes, screen reader compatibility). | Medium | Play Mode provides accessibility features, such as colorblind mode or screen reader support. |
| NFR-09 | Non-Functional | The game should provide quick recovery in case of an unexpected crash or failure during Play Mode. | Medium | Game progress is auto-saved periodically so players can resume after a crash. |
| NFR-10 | Non-Functional | The game should maintain high frame rates (at least 30 FPS) during gameplay for smooth visuals. | High | Game consistently runs at 30 FPS or higher during gameplay. |

### Functional and Non-Functional Requirements for Back Module (Level Selection & Mode Switching)

| **ID** | **Requirement Type** | **Description** | **Priority** | **Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| FR-01 | Functional | The back button should allow the player to navigate between difficulty levels (**Easy**, **Intermediate**, **Hard**) without losing progress. | High | Players can navigate to different difficulty levels from the back button without resetting current progress. |
| FR-02 | Functional | The player should be able to switch from **Practice Mode** to **Test IQ Mode** using the back button. | High | Players can switch between Practice and Test IQ modes using the back button from any screen. |
| FR-03 | Functional | The back button should take the player to the previous menu or screen without crashing or freezing. | High | Upon clicking the back button, the player is correctly returned to the previous screen without delay or error. |
| FR-04 | Functional | The back button should retain the player's progress when switching between modes (Practice to Test IQ and vice versa). | Medium | Player progress is saved when switching between modes using the back button, and the game can be resumed without loss. |
| FR-05 | Functional | The back button should provide confirmation before navigating away if the player is in the middle of a puzzle. | Low | A confirmation prompt appears when attempting to use the back button while in the middle of a puzzle. |
| FR-06 | Functional | The player should be able to switch difficulty levels (Easy, Intermediate, Hard) via the back button without restarting the puzzle. | High | Players can switch between difficulty levels while in Practice or Test IQ mode without puzzle restart. |
| FR-07 | Functional | The back button should be available and visible at all times during navigation in Practice and Test IQ modes. | Medium | The back button is always visible and functional on screens within Practice and Test IQ modes. |
| FR-08 | Functional | The back button should take the player to the main menu when no puzzle or mode is active. | Low | If no mode is active, pressing the back button returns the player to the main menu. |
| NFR-01 | Non-Functional | The back button should respond within **1 second** of being pressed. | High | Players experience a response within 1 second of pressing the back button. |
| NFR-02 | Non-Functional | The back button should be **consistent** across all levels and modes, using the same design and placement. | Medium | The back button looks and behaves consistently across all screens, levels, and modes. |
| NFR-03 | Non-Functional | The transition between levels or modes when using the back button should be **smooth** without screen flickering or lag. | High | Players experience smooth transitions with no flickering or lag when navigating back between levels and modes. |
| NFR-04 | Non-Functional | The back button should maintain the same **functionality and performance** on both desktop and mobile platforms. | High | The back button works identically on both desktop and mobile platforms with no performance issues. |
| NFR-05 | Non-Functional | The back button’s functionality should be **accessible**, allowing players with disabilities (e.g., keyboard navigation) to use it easily. | Medium | Players can navigate the game using keyboard shortcuts or screen readers to access the back button functionality. |
| NFR-06 | Non-Functional | The back button should preserve player data and game state when switching between Practice and Test IQ modes. | Medium | No data loss occurs, and game states are preserved when navigating back and forth between modes. |
| NFR-07 | Non-Functional | The back button should perform **reliably** without causing any crashes or freezing, even after repeated use. | High | No crashes or freezing reported after multiple uses of the back button during navigation. |
| NFR-08 | Non-Functional | The back button should support localization for different languages based on the game’s language settings. | Low | The back button is labeled according to the selected language preference of the player. |
| NFR-09 | Non-Functional | The back button should be easily visible and designed with **high contrast** to be clearly identifiable by players with visual impairments. | Medium | The back button uses high contrast and a clear design to ensure easy visibility and usability for visually impaired players. |