Section 1: Requirements

FR1: The system shall display a background image on the landing page
      FR1.1: The system play a soundtrack as background music
FR2: The system shall allow users to create accounts to unlock unique features
      FR2.1: The system shall allow users to authenticate via email and password
      FR2.2: The system shall allow users to continue as guest without authentication
FR3: The system shall include a mascot with a unique theme to engage users
      FR3.1: The system shall provide interactive feedback based on user behaviour
      FR3.2: The system shall unlock new accessories for the mascot based on the amount of experience the user/guest has acquired.
FR4: The system shall allow users to sync their study sessions to their phone via QR code or link
      FR4.1: The system shall restrict phone usage during active study session
      FR4.2: The system shall allow anyone or any device to scan the QR code or link
FR5: The system shall include a punishment mechanism for users who get distracted
      FR5.1: The system shall track distractions and apply penalty
      FR5.2: The system shall allow users to take special timeouts for essential tasks
FR6: The system shall allow users to customize their experience
      FR6.1: The system shall allow users to customize background themes and music
      FR6.2: The system shall provide personalized statistics

NFR1: The system shall be easy to use and intuitive
      NFR1.1: The system shall allow users to start a session from landing page within 3 clicks
      NFR1.2: The system shall provide clear and concise instruction for all the features
NFR2: The system shall ensure fast and responsive performance
      NFR2.1: The system shall load all features within 2 seconds
      NFR2.2: The system shall display real-time updates on user-activity
NFR3: The system shall ensure secure handling of user data
      NFR3.1: The system shall hide sensitive information such as passwords and personal details.
NFR4: The system shall be visually appealing and engaging
      NFR4.1: The system shall use minimalist and clean design elements

FR (Functional Requirement): Defines what the system should do, specifying the features and behaviors it must provide to meet user needs. (Testable)
NFR (Non-Functional Requirement): Defines how the system should perform, focusing on quality attributes like usability, performance, security, and scalability. (Subjective)

Section 2: Use Cases

Use Case 1:
Name: Sync session to phone
Description: User syncs their current session to their phone via QR code or link to restrict phone usage during the session
Objective: Ensure user stays focused by limiting distractions from their phone
Actors: User, Guest
Pre-conditions:
1. The user/guest must have an active session on the web app
2. The user/guest must have a smartphone to scan QR code or link

Post-conditions:
1. The session is successfully synced to user's phone
2. Phone usage is restricted during the session

Main scenario:
1. The user/guest clicks "Sync to Phone" button on the web app
2. The system generates a QR code and link for the session
3. The user/guest scans the QR code or clicks the link on their phone
4. The user/guest confirms the sync on their phone
5. The system displays a confirmation message on the web app

Alternative scenarios:

3a: User/guest fails to scan QR code or access link

- 3a: The system displays a warning message and prompts the user to try again

4a: User/guest tries to use their phone during the session

- 4a.1: The system blocks access to distracting apps and displays a "guilt" message

Use Case 2:
Name: Customize session settings
Description: User customizes their session by selecting a background theme, music, and avatar
Objective: Allow users to personalize their experience for better focus and engagement
Actors: User, Guest
Pre-conditions:
1. The user must have an active session
2. The user must be logged in

Post-conditions:
1. The session settings are updated with the user's preferences
2. The user's progress is tracked with the new settings

Main scenario:
1. The user navigates to the "Settings" page
2. The system displays options for background theme, music, and avatar

3. The user select their preferred options
4. The user saves their setting
5. The system applies the changes and confirms the update

Alternative scenarios:

3a: User does not select any customization options

- 3a.1: The system applies the default settings

Use Case 3

Name: Create and Authenticate User Account
Description: The system allows users to create an account or authenticate via email and password to unlock unique features.
Objective: Enable users to access personalized features and track their progress.
Actors: User, Guest
Pre-conditions:
- The user/guest is on the landing page.
- The user/guest has a valid email address and password (for authentication).

Post-conditions:
- The user account is created or authenticated.
- The user gains access to personalized features.

Main Scenario:
1. The user/guest clicks the "Sign Up" or "Log In" button on the landing page.
2. The system displays a form for email and password input.
3. The user/guest enters their email and password.
4. The system validates the input.
5. The system creates a new account or authenticates the user.
6. The system redirects the user to their personalized dashboard.

Alternative Scenarios:
- **4a**: The email is already registered.
  - 4a.1: The system displays an error message: "Email already in use. Please log in or use a different email."
- **4b**: The password is invalid (e.g., too short).
  - 4b.1: The system displays an error message: "Password must be at least 8 characters long."
- **4c**: The user selects "Continue as Guest."
  - 4c.1: The system allows access to basic features without authentication.

Use Case 4

Name: Customize Avatar with Accessories
Description: The system allows users to customize their avatar by adding or changing accessories, which are unlocked based on the user's experience points.
Objective: Provide a personalized and engaging experience by allowing users to customize their avatar.
Actors: User (Authenticated)
Pre-conditions:

- The user/guest is logged in or continuing as a guest.
- The avatar customization feature is enabled.

Post-conditions:
- The avatar's appearance is updated with the selected accessories.
- The user's experience points are deducted (if required) for unlocking accessories.

Main Scenario:
1. The user/guest navigates to the "Customize Avatar" page.
2. The system displays the current avatar and available accessories.
3. The user/guest selects an accessory (e.g., hat, glasses, outfit).
4. The system checks if the accessory is unlocked or requires experience points.
5. If the accessory is unlocked, the system applies it to the avatar.
6. If the accessory requires experience points, the system deducts the points and applies the accessory.
7. The system updates the avatar's appearance and confirms the customization.

Alternative Scenarios:
- **4a**: The user/guest does not have enough experience points to unlock the accessory.
  - 4a.1: The system displays a message: "You need 50 more experience points to unlock this accessory. Keep studying!"
- **4b**: The user/guest tries to remove an accessory.
  - 4b.1: The system removes the accessory and reverts to the default appearance for that category.
- **4c**: The user/guest is a guest and tries to access premium accessories.
  - 4c.1: The system displays a message: "This feature is available for registered users only. Sign up to unlock premium accessories!"

Use Case 5

Name: Apply Punishment Mechanism for Distractions
Description: The system tracks user distractions and applies penalties, while allowing special timeouts for essential tasks.
Objective: Encourage users to stay focused during study sessions.
Actors: User, Guest
Pre-conditions:
- The user/guest has an active study session.
- The distraction tracking feature is enabled.

Post-conditions:
- The system logs distractions and applies penalties.
- The user/guest is allowed to take essential timeouts.

Main Scenario:
1. The user/guest starts a study session.
2. The system monitors the session for distractions (e.g., leaving the app, using restricted apps on their phone).
3. If a distraction is detected, the system applies a penalty (e.g., reduces study streak or adds extra time to the session).
4. The system notifies the user/guest of the penalty.
5. The user/guest can request a special timeout for essential tasks (e.g., answering an urgent call).
6. The system pauses the session and allows the timeout without penalties.

Alternative Scenarios:
- **3a**: The user/guest disputes the distraction (e.g., accidental app switch).
  - 3a.1: The system provides an option to review and reverse the penalty.
- **5a**: The user/guest exceeds the allowed timeout duration.
  - 5a.1: The system resumes the session and applies penalties for the additional time.

Section 3: Use Case Diagram