**Login Page Design Document**

**Overview**

The Login Page is the primary authentication entry point for the Airiam RAG Service, allowing existing users to access their accounts securely. This page provides a simple and intuitive interface for entering credentials, with support for various authentication methods to accommodate different security requirements and user preferences.

This document outlines the functionality, design elements, and implementation details for the Login Page. It provides developers with a clear understanding of components, interactions, and expected user experience. Each UI element is described with its purpose, behavior, and technical implementation details.

The Login Page is designed to balance security and usability, providing a frictionless authentication experience while maintaining appropriate security measures. The page may also serve as a gateway to account recovery and registration flows for new users.

**Page Components and Functionality**

**1. Page Layout**

**Container**

* **Centered Card**: White card with shadow on light gray/blue background
* **Responsive Behavior**:
  + Full width on mobile with appropriate padding
  + Max width (e.g., md breakpoint) on larger screens
  + Centered vertically and horizontally on the page

**Branding**

* **Logo**: Airiam logo at the top of the card
* **Title**: "Sign in to your account" heading
* **Subtitle** (optional): Brief welcome message

**2. Login Form**

**Email/Username Field**

* **Label**: "Email Address"
* **Type**: Email input (or text if username is supported)
* **Icon**: Envelope icon (or user icon for username)
* **Validation**: Required, email format (if email)
* **Error State**: Red outline and error message if invalid
* **Autofocus**: Should receive focus when page loads

**Password Field**

* **Label**: "Password"
* **Type**: Password input with show/hide toggle
* **Icon**: Lock icon
* **Validation**: Required
* **Error State**: Red outline and error message if invalid
* **Auto-complete**: Support browser password managers

**Remember Me Option**

* **Type**: Checkbox
* **Label**: "Remember me"
* **Default**: Unchecked
* **Function**: When checked, extends session duration

**Forgot Password Link**

* **Text**: "Forgot your password?"
* **Position**: Right-aligned near password field
* **Action**: Navigate to password reset flow

**3. Action Buttons**

**Login Button**

* **Label**: "Sign in"
* **Style**: Primary button, full width
* **States**:
  + Normal: Primary color
  + Hover: Slightly darker shade
  + Loading: Spinner or loading indicator during authentication
  + Disabled: Grayed out when form is invalid

**Alternative Authentication Methods**

* **Divider**: "Or continue with" text with horizontal lines
* **Social Login Buttons**:
  + Options: Google, Microsoft, Apple, etc.
  + Style: Brand colors or outlined buttons with logos
  + Layout: Grid or stack depending on screen size

**Registration Link**

* **Text**: "Don't have an account? Sign up"
* **Position**: Below all login options
* **Action**: Navigate to registration page

**4. Error and Loading States**

**Authentication Errors**

* **Invalid Credentials Error**:
  + Red alert box at top of form
  + Clear message ("Incorrect email or password")
  + Shake animation on form for visual feedback
* **Account Lock Error**:
  + Warning about too many failed attempts
  + Information about when to try again
  + Link to account recovery
* **Other Authentication Errors**:
  + Network error message
  + Service unavailable message
  + Generic error with support information

**Loading State**

* **Login Button Loading**:
  + Replace text with spinner/loading animation
  + Disable form while processing
  + Prevent multiple submissions
* **Page Loading**:
  + Initial skeleton or shimmer effect
  + Smooth transition when fully loaded

**5. Multi-factor Authentication (if applicable)**

**MFA Challenge Screen**

* **Title**: "Verification Required"
* **Instructions**: Clear explanation of verification method
* **Input Field**: For verification code
* **Resend Option**: "Didn't receive code? Resend" with cooldown timer
* **Alternative Method Link**: "Use a different verification method"

**Testing Procedures**

**1. Page Layout Testing**

**Responsive Design Testing**

1. **Mobile View Test**:
   * Open page on mobile device or using responsive mode
   * Verify form displays properly with all elements accessible
   * Check input field sizing and touch targets
2. **Desktop View Test**:
   * Open page on desktop browser
   * Verify card is centered and properly sized
   * Verify all elements are properly aligned
3. **Branding Test**:
   * Verify logo is displayed correctly
   * Verify title and subtitle text are properly formatted

**2. Form Functionality Testing**

**Email/Username Field Testing**

1. **Empty Field Test**:
   * Leave field empty and submit
   * Verify required field error message
2. **Format Validation Test** (for email):
   * Enter invalid email format
   * Verify format validation error
   * Enter valid format and verify validation passes
3. **Autofocus Test**:
   * Load the page
   * Verify email/username field automatically receives focus

**Password Field Testing**

1. **Empty Field Test**:
   * Leave field empty and submit
   * Verify required field error message
2. **Show/Hide Toggle Test**:
   * Enter password
   * Click toggle and verify password visibility changes
   * Click again and verify it returns to masked state
3. **Password Manager Test**:
   * Verify browser suggests saved passwords
   * Test saving new password after successful login

**Remember Me Testing**

1. **Checkbox Function Test**:
   * Login with checkbox unchecked
   * Close browser and reopen
   * Verify user needs to log in again
2. **Extended Session Test**:
   * Login with checkbox checked
   * Close browser and reopen
   * Verify session is preserved (user still logged in)

**Forgot Password Testing**

1. **Link Navigation Test**:
   * Click "Forgot your password?" link
   * Verify navigation to password reset page

**3. Action Button Testing**

**Login Button Testing**

1. **Form Validation Test**:
   * Submit with empty fields
   * Verify appropriate validation
   * Fill fields and verify button becomes active
2. **Loading State Test**:
   * Enter valid credentials and submit
   * Verify button shows loading state during authentication
   * Verify form is disabled during authentication
3. **Success Flow Test**:
   * Enter valid credentials and submit
   * Verify successful authentication
   * Verify redirect to appropriate page after login

**Social Login Testing (if implemented)**

1. **Authentication Flow Test**:
   * Click each social login button
   * Verify OAuth popup/redirect occurs
   * Complete OAuth flow and verify successful login
2. **Error Handling Test**:
   * Cancel OAuth flow
   * Verify appropriate error handling
   * Verify return to login page

**Registration Link Testing**

1. **Navigation Test**:
   * Click "Sign up" link
   * Verify navigation to registration page

**4. Error State Testing**

**Authentication Error Testing**

1. **Invalid Credentials Test**:
   * Enter incorrect email/password
   * Verify error message appears
   * Verify password field is cleared
   * Verify email/username field retains value
2. **Account Lock Test** (if implemented):
   * Enter incorrect credentials multiple times
   * Verify account lock message appears after threshold
   * Verify timing information is provided
3. **Network Error Test**:
   * Disable internet connection
   * Attempt login
   * Verify network error message
   * Reconnect and verify retry works

**5. Multi-factor Authentication Testing (if applicable)**

1. **MFA Flow Test**:
   * Login with valid credentials for MFA-enabled account
   * Verify transition to MFA challenge screen
   * Enter valid code and verify successful authentication
2. **Invalid Code Test**:
   * Enter invalid verification code
   * Verify error message
   * Verify ability to try again
3. **Resend Code Test**:
   * Click "Resend" option
   * Verify cooldown timer appears
   * Verify new code is sent
   * Verify new code works for authentication
4. **Alternative Method Test** (if multiple methods available):
   * Click "Use a different verification method"
   * Verify alternative methods are presented
   * Test each alternative method