■■ AndyLibrary Registration Process

Complete User Flow Documentation

■ Registration Process Overview

■ Required Fields:

- **Email Address:** Valid format, unique in system
- **Username:** 3-20 characters, alphanumeric only
- **Password:** 8+ characters, mixed case required
- **Confirm Password:** Must match original password
- **Mission Acknowledgment:** Educational access agreement
- **Terms Agreement:** Legal acceptance required

■ Optional Fields:

- **Full Name:** Display and personalization purposes
- **Organization:** Institution or company name
- **Country:** Geographic preference selection
- **Newsletter:** Marketing communications opt-in
- **Profile Picture:** Avatar image upload

■ Registration Process Steps

1. **Initial Load:** User opens browser, system loads website and checks existing session
2. **Authentication Check:** System validates if user is already authenticated
3. **Form Display:** If not authenticated, registration form is presented
4. **Data Entry:** User enters required and optional information

5. Client Validation: Real-time validation with visual feedback

6. Form Submission: Data sent to server via POST /api/auth/register

7. Server Validation: Comprehensive security and format checks

8. Duplicate Check: Email and username uniqueness verification

9. Account Creation: User record created with bcrypt password hashing

10. Email Preparation: Verification email template generated

11. SMTP Delivery: Email sent via smtp.gmail.com:465 SSL

12. User Verification: User clicks verification link in email

13. Token Validation: Server validates verification token (24h expiry)

14. Account Activation: EmailVerified and IsActive flags set to TRUE

15. Login Ready: User can now authenticate and access full system

■ Technical Implementation

Database: SQLite with async support and connection pooling

Password Security: bcrypt hashing with cost factor 12

Token Generation: UUID verification tokens with 24-hour expiration

Email Service: Gmail SMTP with App Password authentication

Validation: Client-side real-time + server-side comprehensive checks

Security: SQL injection prevention, XSS sanitization, CSRF protection

Error Handling: User-friendly error messages with recovery flows

Rate Limiting: Maximum 3 verification email attempts per hour

■ Generated by AndyLibrary System
For detailed visual flowchart, see: Docs/Flowchart/HTML/