

E-Sign Product – Functional Overview

1. User Authentication

- Supports Email/Password login.
- Supports OTP login (stored in Profile model, cleared after login).
- Signup creates inactive user, generates OTP, sends via email.

2. Document Upload

- Converts naive datetime to UTC using IST timezone.
- Saves document with owner reference.
- Admin can set document expiry.

3. Signature Placement & PDF Generation

- Signature boxes/pages saved in SignatureBox and SignaturePage.
- PDFs merged using ReportLab / PyPDF2 / PdfWriter.
- Signatures applied using PyMuPDF (fitz), supports base64 or uploaded images.

4. Sending Signing Links

- Documents can be sent via:
 - CSV upload (bulk users)
 - Manual email input add-on
 - Serial flow (A → B → C)
- Unique token generated for each recipient.
- Emails include merged PDF with signature boxes.

5. Sign Document Page

- Validates token expiration and security token.
- Checks signing order (serial flow enforcement).
- Viewer-only pages displayed for non-signers.

6. Applying Signatures

- Applies signature from base64 or uploaded image.
- Calculates coordinates based on page size × percentage.
- Saves merged PDF and updates DocumentSignFlow & Document.status.
- Document locked during signing to prevent race conditions.

7. Sending Document Flows

- Admin sets expiry before sending.
- 3 ways to send documents:
 - CSV upload
 - Manual email input add-on
 - Serial flow (A → B → C)
- Serial flow ensures signatures happen in order.
- Same PDF collects all signatures or separate PDFs per user if using add-on with flow.

8. Admin Dashboard

- Metrics displayed:
 - Action Required
 - Total Documents Sent
 - Documents Signed / Pending / Expired
 - Signatures Collected
 - Expiring Soon
 - Templates
 - Completion Rate
 - Declined Documents

9. Signature Status

- 4 types of signature status:
 - Draft
 - Action Required
 - Waiting for Others
 - Finalized

10. Document Listing & Download

- Download options:
 - Original PDF
 - Signed PDF
 - Individual signer PDFs

11. Other Observations

- Email sending uses EmailMessage with PDF attachment.
- delete_document & delete_signature endpoints work correctly.
- document_list supports filtering and pagination.
- Base64 encoding of recipient emails consistent for URLs.