

## Potential improvements

### 1. Persistent Storage for Blacklisted IBANs

- a. Current: IBANs are stored in-memory, which means data is lost on restart.
- b. Improvement: Integrate a database (e.g., PostgreSQL, MongoDB) to persist the blacklist, enabling durability, querying, and audit trails.

### 2. Advanced IBAN Validation

- a. Current: IBAN detection uses regex and simple normalization.
- b. Improvement: Implement full IBAN validation including country-specific length checks.

### 3. Security Enhancements

- a. Add authentication and authorization to restrict API access.
- b. Secure communication with HTTPS and proper certificate management.

### 4. Scalability and Performance

- a. Introduce caching for frequently scanned documents or IBAN checks.
- b. Use asynchronous processing or message queues to handle large volumes of scans without blocking API responses.
- c. Containerize the application (Docker/Kubernetes) for easier scaling.

### 5. Improved Error Handling and Reporting

- a. Return detailed error messages for different failure scenarios (e.g., invalid URL, corrupted PDF).
- b. Provide audit logs and traceability for compliance and debugging.

### 6. User Interface

- a. Develop a simple web UI or dashboard for managing blacklisted IBANs, viewing scan history, and monitoring system health.