



HACKERRUPT'26 – “A 24-hour National Level Hackathon”

Title : Unified Smart Document Management System for Multi-Modal Agencies

Problem ID : HK2620

Team Name : Login

Team Leader : Sharukh Akthar A

Institution Name : Rajalakshmi Engineering College

Domains Used : AI & Automation

OBJECTIVE → Unified Smart Document Management System for Multi-Modal Agencies



Modern transit agencies have evolved into multidisciplinary organizations overseeing diverse functions — from operations, engineering, and safety to HR and finance management, requiring seamless coordination and data-driven efficiency.

With this growth comes :

- an overwhelming amount of documents
- Arrives through different sources, email, WhatsApp, SharePoint, Maximo, and hard-copy scans
- Docs of different languages

CHALLENGE:

Create a smart, integrated digital platform that enables all transit agencies — metro, bus, ferry, and more — to streamline operations, improve coordination, and enhance commuter experience

INFORMATION LATENCY

01

Slow decisions – Managers lose time searching through long files.



COMPLIANCE RISK

03

Missed updates – Important regulatory deadlines can be missed. Departments work in silos, unaware of new changes.



KNOWLEDGE ATTRITION

02

Knowledge loss- Institutional insights disappear when staff transfer or retire.



INTERDEPARTMENT COORDINATION

04

Collaboration Enablement: Reduce duplicated efforts by enabling shared, version-controlled summaries.



SOLUTION



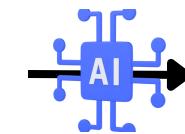
An AI-powered , centralized intelligent document hub with **N8N automation** for :

- Automated **Ingestion** of data from different sources
- **Smart summarization** with role-specific “actionable snapshots” and dept tags.
- **Auto-routing** of relevant info to right team with urgency and store it securely for their access only.
- **Centralized database** with source file traceability and condensed report for knowledge preservation with executive level access
- **Intuitive dashboard** with Role based access , smart tagged docs , RAG based help desk chatbot and inter-department co-ordination mechanism .
- Easier integration of **UNS/IOT** outputs from sensors through MQTT explorer node with N8N

DocHub turns everyday documents into actionable intelligence — fostering coordination, compliance, and efficiency across all functional systems.



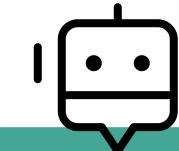
Unstructured documents



- Condenses long docs into key actions, risks, and deadlines
- Maps each actionable item to the relevant department only
- Generates relevant actionable snapshots for resp. stakeholders
- Label urgency and give decision notes.



UNIQUE VALUE PROPOSITIONS



RAG MODEL

An RAG-powered Support model that understands your documents, policies, and past records, giving instant, context-aware answers without hunting through files.



MOBILE APP

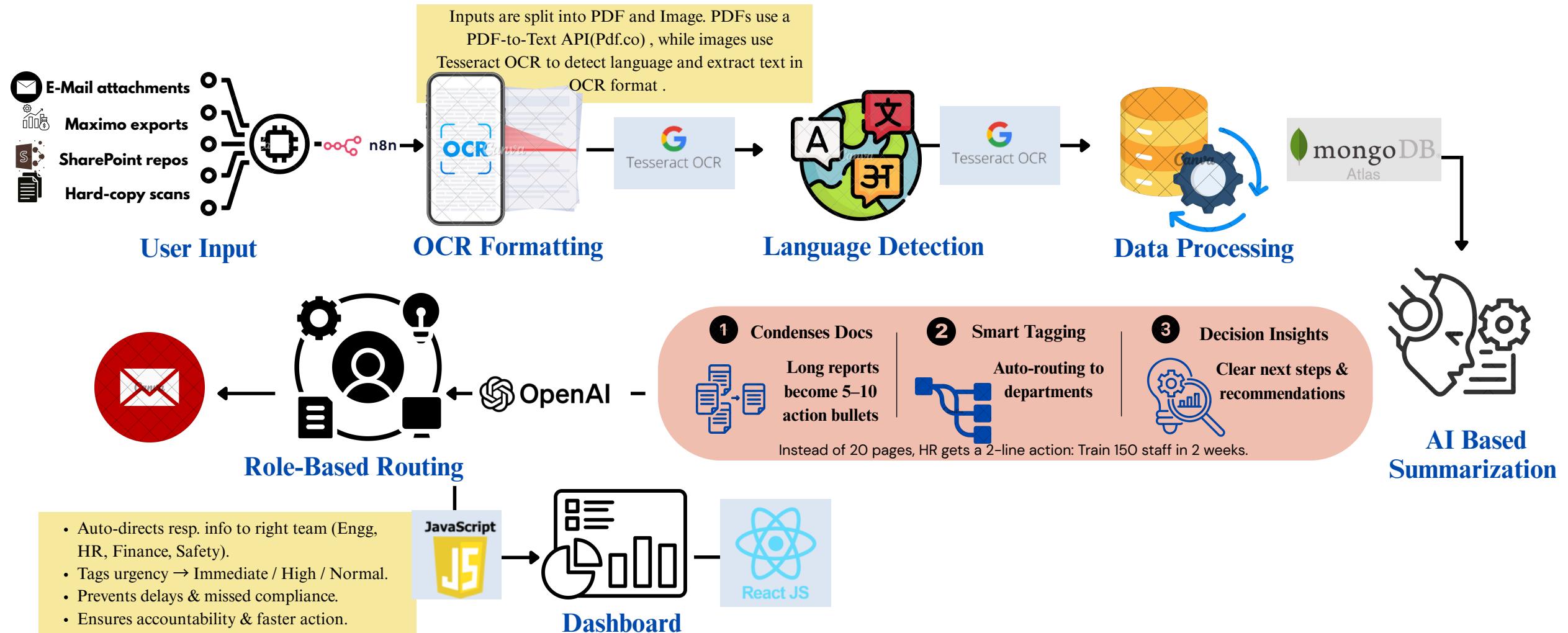
Brings frontline staff (maintenance, safety, field teams) directly into the loop, allowing them to receive updates, flag issues, and act on time – even on the go.



COMMENTS

Comment threads for teams to discuss, clarify, and resolve points right inside the system, ensuring decisions don't get lost in emails, fostering cross departmental coordination

ARCHITECTURE DIAGRAM



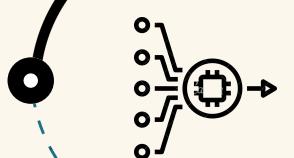
TECH STACK AND DEV. PIPELINE



DEV. PIPELINE

CONVERT BULKY FILES INTO ACTIONABLE SNAPS FOR EACH ROLE AND SMART TAGS

DATA INGESTION

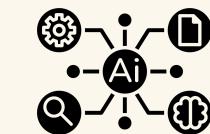


SECURE DEPARTMENTAL ACCESS (RBAC)



AUTOMATED MAILS AND ALERTS WITH CONDENSED ACTIONABLE POINTS DIRECTLY TO EACH TEAM.

KNOWLEDGE HUB & TRACEABILITY



SMART-TAGGED DOCS+ KNOWLEDGE RETENTION HUB + COMMENT THREADS FOR COORDINATION IN ONE PLACE.

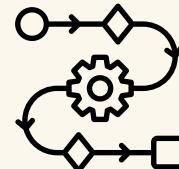
MULTI SOURCE AND MULTI LINGUAL DOCUMENT INGESTION

AI SUMMARIZATION & ROUTING



SECURE ROLE BASED ACCESS CONTROL TAILORED FOR EACH TEAM'S NEEDS.

AUTOMATED DEPT. ALERTS



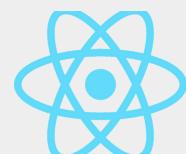
PRESERVE SOURCE FILES, CONDENSED REPORT AND INSTITUTIONAL MEMORY.



SMART DASHBOARD & AI ASSISTANCE

TECH STACK

Frontend



Backend



Express **JS**



n8n

Database



Deployment

METRICS, FEASIBILITY, NOVELTY

FEASIBILITY

- **Usage of proven components** like OCR (google vision pro) , AI Summarization (OpenAI, HuggingFace) , and Workflow Automation (N8n)
- Provision of **3 access portals**: mobile app (frontline staff), workflow automation (n8n), and native portal ensuring continuity even if one fails
- Inter-department coordination improves drastically as documents are auto-classified and routed
- **Staff adoption is easier** since tools are familiar resulting in reduction of training
- Compared to their current system , our system automates classification, reporting, and routing resulting in **less manual effort and faster compliance**.
- **Scalable architecture** : can handle large document inflows



KEY DIFFERENTIATORS



BUSINESS MODEL

- **SaaS subscription** model for metros/organizations
- **Revenue streams :**
 - Tiered subscription (small , medium , large organizations)
 - Customization fees for department-specific workflows
 - Integration/API usage for enterprises
- Scalable beyond metro systems since **knowledge acquisition and inter-department coordination** are common pain points for many organisations

Performance Comparison

Manual Data Entry vs IDP Automation

METRIC	MANUAL ENTRY	IDP AUTOMATION
💰 Cost per Document	\$10-\$15	LOW
⚡ Processing Speed	5-6 docs/hr	FAST
🎯 Error Rate	1-4%	LOWER
⌚ Cycle Time	14-15 days	FASTER
📈 Cost Reduction	Baseline	60-80%

IDP delivers **6x faster processing, 60-80% cost savings, and superior accuracy**.



TEAM MEMBER DETAILS

Team Leader Name : Sharukh Akthar A

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Team Member 1 Name: Mythili K

Branch (B.Tech /B.E): B.Tech

Stream (ECE, CSE etc):CSBS

Year (I,II,III,IV): III

Team Member 2 Name: Nithin S

Branch (B.Tech /B.E): B.Tech

Stream (ECE, CSE etc):CSBS

Year (I,II,III,IV): III

Team Member 3 Name: Thaniya Pratyaini S

Branch (B.Tech /B.E): B.Tech

Stream (ECE, CSE etc):CSBS

Year (I,II,III,IV): III

Team Member 4 Name: (Fill this is you 4 members) Sharukh Akthar A

Branch (B.Tech /B.E): B.Tech

Stream (ECE, CSE etc):CSBS

Year (I,II,III,IV): III