

PC/laptop

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Operations:-

Web interface-

- ① initiate scan only printer operation
- ② initiate print and scan printer operation
- ③ Organize and edit scanned/processed documents
- ④ Post processing
- ⑤ document file conversion
- ⑥ OCR document conversion
- ⑦ Status of interconnectivity (PC/laptop, mobile/lan, printer)
- ⑧ Dashboard Analytics
- ⑨ Voice assisted operations
- ⑩ Authentication and security
- ⑪ documents storage

- ① initiate scan only printer operation

Techn: Python → Pyinsane2 (TWIN/WIA interface for scanners)
Alternative → windows WIA COM API (via pywin32)

Workflow: ① App button → ② Flask api endpoint receives request →
③ Python code calls Scanner with above tech →
④ Scanned file saved locally → ⑤ Success status

- ② initiate print with scan operation - Same

- ③ Organize & edit files

Techn: OpenCV → PyMuPDF {Merge, rotate, reorder, crop}

- ④ Post processing

Techn: OpenCV + Pillow

operations:- deskew, denoise, threshold, morphological ^{filtering} ~~operations~~

- ⑤ document conversion:-

Techn: PDF ↔ DOCX → pdf2doc, python-docx

⑥ OCR: Image → Text (ocr) → Tesseract via pytesseract