# InsightLens – Technical Specification

**Document Type:** Developer-Facing Technical Spec Version: v1.0 (Initial Prototype for Replit Core / Bolt.new)

### 1. Application Overview

InsightLens is a document analysis tool that leverages LLMs to extract structured insights for investors. Users upload PDFs or URLs, and the system generates value-investor-aligned insight cards using pre-defined GPT prompts. The tool is frontend-accessible and backend-driven with a modular Al pipeline.

### 2. Architecture Overview

### Frontend (Replit / Bolt.new)

- Framework: React (or Svelte) SPA or tabbed layout
- Components:
  - Document upload module
  - Insight card display (modular)
  - Tagging & filters
  - Phase toggles (Biotech Mode, Value Investor Lens)
  - Scorecard sliders (Phase 3)
  - Summary recommendation (Phase 5)

### **Backend (Python)**

- Framework: FastAPI or Flask
- Core logic:
  - Document parsing (PDF, text, HTML)
  - Insight card generation (GPT API requests)
  - Caching layer for repeated requests
- Integrations:
  - OpenAl API (GPT-4)
  - LangChain or LlamaIndex for PDF chunking & retrieval
  - Optional: browser agent (playwright/scraper for later phases)

### **Storage**

- Supabase (or Firebase) for:
  - Uploaded documents metadata
  - User evaluations & scoring (Phase 3+)
  - Logs of insights generated (Phase 5 recommendations)

## 🔁 3. Al Processing Flow

- 1. Input Handling
  - User uploads file or pastes URL
  - o Backend parses content into clean text using PDF parsers / web scrapers
- 2. Card Generation (Per Section)
  - Send cleaned content + prompt template to GPT
  - Receive insight-specific output (e.g., Moat, Red Flags)
  - Store and display outputs as individual cards
- 3. Recommendation Engine (Phase 5)
  - o Combine all insight cards
  - Generate weighted decision using GPT prompt
  - Display: Recommendation + Explanation + Disclaimer

## 4. Al Prompt Framework

Insight cards will be driven by specific GPT prompts. Each prompt includes:

- Role-based prompt engineering
- Context: Insert parsed content
- Structured output format

[See PRD for full prompt library.]

## 5. Example Insight Flow

User Uploads: Moderna 10-K PDF

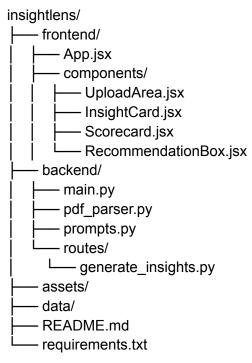
System Flow:

Parses PDF using LlamaIndex

- Sends sections to:
  - o Business Summary Prompt
  - Moat Detection Prompt
  - Financial Health Prompt
  - Red Flags Prompt
  - Management Quality Prompt
  - Scientific Rigor Prompt (Biotech Mode)
- Aggregates outputs into display cards
- Phase 5 generates overall Recommendation



## 6. Suggested File Structure



**Phas** 

## 7. MVP Milestones

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1	Upload + display summary insight cards
2	Value Investing analysis cards (Moat, Margin, Red Flags)
3	Interactive scorecard system

Milestone

- 4 Al-based company comparison + browser agent
- 5 Final Recommendation Generator with toggle + disclaimer

## **1** 8. Legal & Disclaimer Module

• All recommendation output must include:

Disclaimer: This is an Al-generated opinion for research purposes only. It does not constitute investment advice.

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