SHL Assessment Recommendation Engine — 1■Page Summary

Problem Statement:
Enable hiring managers to quickly identify relevant SHL assessments using free-form queries, instead of manually browsing through product catalogs.

Solution Overview:
Built a semantic recommendation engine powered by OpenAI embeddings. The pipeline includes:

1. Scraping
- Source: https://www.shl.com/solutions/products/product-catalog/
- Tools: requests, BeautifulSoup
- Data collected: name, description, duration, remote support, adaptive/IRT, test type codes

2. Embedding & Ranking
- Embedding Model: OpenAI text-embedding-3-small via LangChain
- Vector Similarity: NumPy-based cosine similarity, real-time matching
- No persistent vector DB required (no FAISS)

3. Metadata-Aware Filtering
- Parse user query for filters (duration ≤ X mins, remote, test type keywords)
- Apply filters before similarity scoring for improved relevance

4. Frontend & API
- API: FastAPI with /recommend endpoint
- UI: Streamlit app with natural language query box, dynamic results display
- Deployment: Render.com (API), Streamlit Cloud (UI)

Test Types Mapping:
A = Ability, B = Biodata, C = Competencies, D = Development, E = Exercises, K = Knowledge, P = Personality, S = Simulations

Technologies Used:
- LangChain, OpenAI, NumPy, FastAPI, Uvicorn, Streamlit, Requests, BeautifulSoup4

Evaluation Plan:
- Manual tests using sample queries (Appendix 1) to assess Recall@3, MAP@3
- Enhanced relevance with pre-filtered metadata + semantic ranking

Outcome:
The system is live via both UI and API, fully supports natural language queries with meaningful, filter-aware assessment recommendations.