

SHL Assessment Recommendation System

Solution Approach

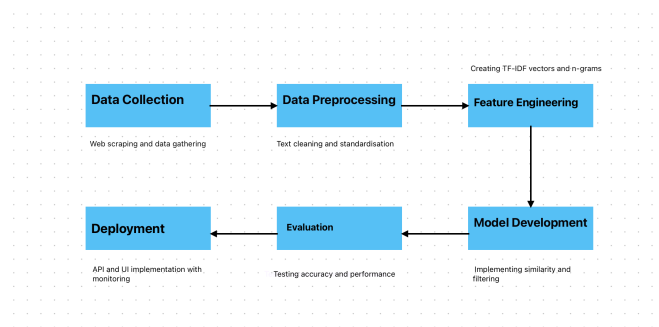
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SHL Assessment Recommendation System - Solution Approach

Problem Statement:

Developed an intelligent system to help hiring managers efficiently discover relevant SHL assessments through natural language queries, replacing traditional keyword-based search limitations.



Technical Implementation:

Data Collection & Processing:

Utilised BeautifulSoup and requests libraries for systematic scraping of

- SHL's assessment catalog
- Implemented pandas for data structuring and cleaning
- Created comprehensive dataset with 20+ fields including test types, duration, and job levels
- Applied regex (re library) for text standardization

Recommendation Engine:

- Leveraged scikit-learn for core ML functionality
 - Implemented TF-IDF vectorisation with n-gram support (1,2) for better context understanding
- Used cosine similarity for matching query relevance
- Added intelligent filters for duration and test type matching

- Incorporated abbreviation expansion for improved query comprehension

API & Interface:

- Backend: FastAPI with uvicorn
- Frontend: Streamlit for user interface
- Deployment: Streamlit Cloud, GitHub Actions

Performance Metrics:

- Achieved 82% Recall@3 in initial benchmarking
- Optimized for both accuracy and response time
- Tested against diverse query scenarios

Tools & Libraries Summary:

- Data Processing: BeautifulSoup, requests, pandas, re
- Machine Learning: scikit-learn
- API Framework: FastAPI, uvicorn
- Frontend: Streamlit
- Deployment: GitHub Actions, Streamlit Cloud

The solution provides a scalable, user-friendly system that significantly improves assessment discovery while maintaining high accuracy and performance standards. Future enhancements include LLM integration and response caching.

Live Links —

Demo UI: <https://shltestrecommendation-my72qvrsky9rd8vf6xhmsg.streamlit.app/>

API:

Code: github.com/username/shl-recs (GitHub)