Web search engine requirement

I. System requirements

Functional requirement

The system shall accept a list of keywords and return a list of URLs whose descriptions contain any of the given keywords. No noise words shall be given as part of the list of keywords.

The system uses KWIC index system to maintain a database of URLs and the corresponding descriptions. KWIC accepts an ordered set of lines, where each line consists of two parts:

- The URL part
- The description part is an ordered set of alphanumeric words.

Where each word is an ordered set of characters excluding any punctuations symbols or control characters. The descriptor part of any line shall be "circularly shifted" by repeatedly removing the first word and appending it at the end of the line. The KWIC index system shall output a list of all circular shifts of the descriptor parts of all lines in descending alphabetical order, together with their corresponding URLs. No line in the output shall start with any noise word.

The system shall be implemented in Java 2 Enterprise Edition (J2EE). Build J2EE application that shall run in J2EE server. The Enterprise Java Bean (EJB) and web components shall be developed. The system shall be implemented by Java Bean to realize implicit invocation architecture. The system can be implemented in 2-tier or 4-tier. For the 4-tier implementation, Cloudscape database shall be used.

Non-functional requirement

The system shall be easily understandable, portable, enhanceable and reusable with good performance. The system must also be user-friendly, responsive, and adaptable. The system shall be growable.

II. The deliverables

1. Architecture
Describe an implicit invocation style of the software architecture. Describe the constituents of the architecture including components/elements, interactions/connections, any constraints, and any patterns. Also the advantages and disadvantages of your architecture.

2. J2EE implementation
Build J2EE application that shall run in J2EE server. The web client shall run with a web browser.

3. User Manual
Briefly describe the interactions between the user and the system.