

Homework 1

100 Possible Points

9/23/2022

Attempt 1



IN PROGRESS

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Unlimited Attempts Allowed

Details

Evaluating Alternative Designs

Scenario

Imagine you are in charge of a small 3-person development group who will be developing a KWIC index generation tool for an online course. Specifically, your product should have the following features:

- It's input will be a group of HTML files representing the online notes from one lecture.
- The titles of each page in the group will be indexed.
- The tool will be run once a week with a new lecture's worth of HTML pages. The tool should add the new index entries to the existing index.
- The output of the indexing tool will be HTML that is ready to post on the web.
- The execution platform will be a Windows 10 PC.

Although this list of features only gives an outline of the requirements for the product, it should give you enough of a feel for the intended use that you can make educated guesses for any questions you run into as you complete the assignment. Feel free to use your best judgement in such a situation. If you have other questions about features, feel free to ask.

Assignment

The main task of your assignment is to evaluate the 4 KWIC Index architectures discussed in the Reading 03 reading assignment, and then select the one you believe is best for the scenario outlined above. Write up your results in a short paper (about 4-5 pages) that you will turn in. Be sure to include the following elements in your solution:

1. **Project Summary:** provide a brief description of the requirements for the system you are creating. You can start with the 5 bullets listed above, and extend that with any additional assumptions, features, or restrictions you think up yourself as you proceed through the assignment.
2. **Evaluation Criteria:** Devise a list of key design decisions (either a choice to support some kind of change, or a choice to commit to something unchangeable) that are relevant to the system at hand. Be specific; something like "support a change in function" is too general--"support a change from indexing page titles to indexing all words on

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3. **Evaluate 4 Architectures:** Evaluate each of the 4 architectures against your set of criteria, briefly discussing the strengths or weaknesses it has with respect to each design decision you have chosen.
4. **Select the Best:** Choose which of the 4 is best suited for use in this hypothetical situation. Justify your choice by drawing on the evaluation you have performed.
5. **Conclusions:** You may find that your final choice among these 4 candidate architectures still has some shortcomings. In wrapping up your paper, you can identify any weak points in the architecture you have selected that need to be addressed for the project to be a success. You may also make suggestions about alternative architectures that were not considered, or about anything you might change or do differently in your selected architecture for solving the problem.

The bulk of your paper will probably be spent on describing the evaluation criteria and presenting the evaluation of the 4 alternatives.

Assessment

The following rubric will be used to assess your work:

Criteria	Points
Project Summary	10 points
Excellent: Provides a clear explanation of realistic features, including significant additional features above the minimum 5, and providing additional concrete details about the 5 requirements outlined in the assignment. Realistic assumptions about operating conditions or expectations of use are clearly communicated.	10/10
Good: Provides a clear explanation of realistic features, including some additions to features above the minimum 5, and provides concrete elaboration of some of the 5 requirements outlined in the assignment. Realistic assumptions about operating conditions or expectations of use are communicated.	8/10
Satisfactory: Provides a clear explanation of features that may include minor additions to features above the minimum 5. Some of the 5 required features may be elaborated more concretely. Some simple assumptions or restrictions regarding use of the system are presented.	6/10
Poor: Simply restates the minimum 5 features, without communicating any significant additional insight into requirements for the system.	3/10
No attempt: Section is missing.	0/10
Evaluation criteria	30 points
Excellent: Provides a clear, specific list of evaluation criteria that is significantly more comprehensive than the example outlined in the textbook. Criteria are directly related to the requirements presented in the summary, and how each criterion can be judged is explained.	30/30
Good: Provides a clear list of evaluation criteria with a significant attempt to be comprehensive. Most criteria are directly related to the requirements presented in the summary and specific enough to have direct relevance to the system at hand. How most criteria can be judged is appropriately explained.	25/30
Satisfactory: Provides a list of criteria that goes beyond the basics covered in the case study from the textbook. Some criteria may be too general, too difficult to apply, or poorly connected to the requirements presented in the summary.	20/30
Poor: Simply restates the basic criteria described in the text without any significant additional	10/30



Criteria	Points
Evaluation	30 points
Excellent: Explicitly addresses how each of the four architectures measures up against each criterion you have developed in a systematic way. Explicit strengths and/or weaknesses for each architecture are noted for each evaluation criterion. A table or other mechanism is used to summarize the results of the evaluation in a concise way that can be quickly scanned.	30/30
Good: Explicitly addresses how each of the four architectures measures up against each criterion you have developed in a systematic way, including a clear description of the strengths and weaknesses of each of the four architectures.	25/30
Satisfactory: Explicitly addresses how each of the four architectures measures up against each criterion you have developed.	20/30
Poor: Attempts to evaluate the four architectures, but without any clear connection to the presented evaluation criteria or any clear summary of strengths and weaknesses for each architecture.	10/30
No attempt: Section is missing.	0/10
Selection	10 points
Excellent: An architecture is chosen as best, and a well-reasoned systematic justification that relies on all criteria in your evaluation is presented to make a strong case for your selection.	10/10
Good: An architecture is chosen as best, and a justification is provided that draws on significant elements of your evaluation.	8/10
Satisfactory: An architecture is chosen as best. A basic justification is provided, but it is not directly connected to the elements of your evaluation.	6/10
Poor: An architecture is chosen as best, but little or no convincing justification is provided.	3/10
No attempt: Section is missing.	0/10
Conclusions	10 points
Excellent: In addition to summarizing the selection of the strongest architecture, the conclusions discuss the implications of all important weaknesses of that choice that were identified in the evaluation. The conclusions point out what requirements changes would invalidate the architecture choice that was selected and why, as well as what alternative architecture would then be a better match. The conclusions provide an appropriate discussion of ways the risks of changing requirements could be addressed through possible modifications to the selected architecture.	10/10
Good: A basic conclusion that restates the architectural choice is provided. Some weaknesses in the selected architecture are discussed. Potential changes in requirements that may result in a change to which architecture is the best fit are also discussed. Possible modifications to the selected architecture to improve the way it meets the problem may be included.	8/10
Satisfactory: A basic conclusion that restates the architectural choice is provided. Some weak points in the selected architecture are discussed.	6/10
Poor: A basic conclusion that restates the architectural choice is provided.	3/10
No attempt: Section is missing.	0/10
Writing/Presentation	10 points
Excellent: All writing is clear and readable, without grammar errors, punctuation errors, or other writing problems. Figures or summary tables are used appropriately where they clarify presentation. Clear headings and a cohesive document organization are used. The whole document looks like a professionally	10/10



Criteria	Points
Good: All writing is clear and readable, with only occasional minor writing errors. An appropriate attempt is made to use appropriate figures or summary tables where they help clarify presentation. Clear headings and a cohesive document organization are used.	8/10
Satisfactory: The document is readable, but some significant errors appear in the writing and/or organization. Some parts of the exposition may not communicate clearly. Summary representations of key portions of the work may be missing. Clear headings are used.	6/10
Poor: The document is readable, but includes significant errors in both writing and organization that make portions of the document hard to follow.	3/10
No attempt: Section is missing.	0/10
Total	100 points

Submission

Be careful in writing up your assignment. Since your submission will be a written paper, clear communication and good use of English are very important; part of your grade will be based on the effectiveness of your presentation.

Please prepare your assignment using MS Word or LaTeX, and print to a PDF file. Name your file **H1-yourPID.pdf** and upload it here.

▼ View Rubric



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Homework 1 Evaluation						
Criteria	Ratings					Pts
Project Summary view longer description	10 pts Excellent	8 pts Good	6 pts Satisfactory	3 pts Poor	0 pts No attempt	/ 10 pts
Evaluation criteria view longer description	30 pts Excellent	25 pts Good	20 pts Satisfactory	10 pts Poor	0 pts No attempt	/ 30 pts
Evaluation view longer description	30 pts Excellent	25 pts Good	20 pts Satisfactory	10 pts Poor	0 pts No attempt	/ 30 pts
Selection view longer description	10 pts Excellent	8 pts Good	6 pts Satisfactory	3 pts Poor	0 pts No attempt	/ 10 pts
Conclusions view longer description	10 pts Excellent	8 pts Good	6 pts Satisfactory	3 pts Poor	0 pts No attempt	/ 10 pts
Writing/Presentation view longer description	10 pts Excellent	8 pts Good	6 pts Satisfactory	3 pts Poor	0 pts No attempt	/ 10 pts
						Total Points: 0

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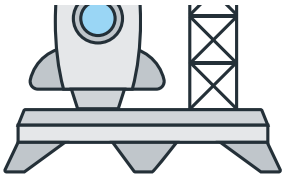
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Assignment

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