

## **CS 6310 - Software Architecture & Design**

### **Assignment #7 [125 points]: Design Debate Research Paper (v3)**

**Fall Term 2018 - Prof. Mark Moss**

#### **Submission**

- This assignment must be completed as an individual, not as part of a group.
- You must submit your work in Canvas as a PDF file named **research\_paper.pdf**.
- Your report can have a maximum of six (6) pages including the text, images and diagrams to make your arguments. You can also have one reference page (e.g. bibliography, citations, etc.) for a **total maximum length of seven (7) pages**. Formal title or cover pages are not required.
- You must notify us via a private post on Canvas or Piazza BEFORE the Due Date if you are encountering difficulty submitting your work. You will not be penalized for situations where Canvas is encountering significant technical problems, but you must alert us before the Due Date – not well after the fact. You are responsible for submitting your work on time in all other cases.

**Purpose:** Your goal for this assignment is to review and provide your own original perspectives on the document selected below. This is an opportunity to increase your familiarity with the various software architecture and design concepts that we've been discussing throughout the course, and apply them while reviewing a topical debate in the field.

#### **Article to Review**

97 Things Every Software Architect Should Know, Richard Monson-Haefel, Feb 2009, (ISBN: 9780596800611) O'Reilly Media, Inc.

You can access the text via GT Library's Safari Books Online:

<https://www.safaribooksonline.com/library/view/97-things-every/9780596800611/>

**Writing Style Guidelines:** The style guidelines can be found on the course Udacity site, and at: <https://s3.amazonaws.com/content.udacity-data.com/courses/gt-cs6310/assignments/writing.html>

#### **Research Paper Requirements**

- Review/scan the book and **select three articles from the book as your focus points**. For each focus point, you must provide strong and convincing justification why you feel the point is either (1) fundamentally true, (2) fundamentally false, or (3) true or false depending on certain key and distinct criteria, conditions, circumstances, etc.
- You must clearly list which three articles (including page numbers) you've selected.
- If you feel the article is fundamentally true, then you can provide examples from your experiences that support its correctness. You must provide enough detail to match your experiences to the key aspects of the article, to better highlight how your experiences inductively support its correctness. You can also use more general principles and logically-based reasoning to explain why the article is true using reasonably well-known principles of software architecture & design. You are welcome (and encouraged) to use the concepts and

terminology that you have been learning during the course from various sources – the SWEBOK, the various readings, Udacity videos, etc. – to support your arguments.

- Similarly, if you feel that the article is fundamentally false, then you can provide counter-examples based (partly) on your experiences, and (even better) on reasonably well-known software architecture and design principles. Similar to the approach above, you must provide enough detail to match your experiences to the key aspects of the article in order to support your conclusion. Make it clear that any counter-examples you've cited are truly applicable to the claims made in the article.
- Finally, if you feel strongly that the article is true in some cases, but false in others, then you must cite clear criteria, circumstances, conditions, aspects, of the problem, etc. that demonstrate what causes the true/false differences. You cannot simply use this option as an "out" to avoid deeper reasoning, or selecting the "fundamentally true or false" options.

## **Evaluation**

- You are also encouraged to research the concepts referenced in the article from other sources. You are welcome to cite other sources in supporting your arguments, but remember this key point: your submission will be evaluated based on your original thoughts and contributions: effectively, the "glue" between the quotes and citations that you include from other sources.
- If you do include material from other sources, make sure that all such material is very clearly marked and distinct from your contributions. And don't include so many quotations from other sources that you don't leave enough room in the paper for your "glue": your arguments and explanations that connect the material from the various sources into a single, flowing thesis.
- In all cases, your goal is to provide a clear, concise, well-formed and persuasive arguments for each focus point that you've selected.
- For clarity, you should make sure that your grammar, spelling, etc. is correct, and that your writing flows as smoothly as possible. Also, text, images and diagrams must be clean and legible.
- For conciseness, the arguments for each of your focus points should be approximately 750-1000 words or less (~2 pages single spaced). This "size per focus point" limit is not strict: feel free to use more space for one point (set of arguments) as long as you are willing to use less space for another. The overall page limit, however, is strict.
- The well-formed aspects of your argument will be evaluated based on its logical structure: solid supporting data combined with well-defined logical inferences, leading to a solid conclusion. A well-formed argument must avoid common logical fallacies.

**Quick Reminder on Collaborating with Others:** Please use Piazza for your questions and/or comments, and post publicly whenever it is appropriate. If your questions or comments contain information that specifically provides an answer for some part of the assignment, then please make your post private first, and we (the OMSCS 6310 Team) will review it and decide if it is suitable to be shared with the larger class. Best of luck on to you this assignment, and please contact us if you have questions or concerns. -- Mark