

Analysis and Design of Large Scale Software II (SENG 401)

Project Part 3 Specification: Execution View

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Overview

Part 3 of the project entails doing the execution view of the project as specified by the concept mapping application requirements, based on the previous assignment parts 1 and 2 where you specified the conceptual and module views. You will have to do all the parts of the execution view:

- Global Analysis (output: new and modified entries in the: factor table, and new and modified issue cards. These should focus on:
 - Hardware components and their topology, potential for change, etc.
 - Identification of the software platform [O/S and network, etc.]; and a list of the software platform elements and their characteristics.
- Central Design Tasks (Develop appropriate configuration diagrams, and detail the elements and entities. Also develop appropriate interaction diagrams.)
 - Platform elements: Identify relevant platform element types and describe them (→ 1 table)
 - Communications mechanisms: Identify relevant communication mechanisms and describe them (→ 1 table).
 - Runtime entities: Initially, assign conceptual components to platform elements, then assign modules to runtime entities (→ 2 tables). List the attributes of each runtime entity instance (for examples cf. Hofmeister et al., p. 154).
 - Execution configuration (→ execution configuration diagram): Identify communication paths between runtime entities, their communication mechanisms, and resources used for communication. Distinguish between the runtime entity *types* and their corresponding *instances*.
 - Describe behavioral aspects of the configuration (→

- interaction diagram).
- Global Evaluation
- Final Design Task: Map the configuration to hardware platform elements (→ architecture overview diagram) and assign runtime resource budgets.

Size and Scope

The complete document should add no less than 8 pages to the existing document (from assignments 1 and 2, the conceptual and module views), single spaced, 10 point font, including diagrams, charts, tables, and references. You should include a **minimum (excluding** the ones given in class) of

- 3 new entries in the factor table
- 3 new or significantly modified issue cards (issue cards can be included as tables within your document, multiple issue cards to a page)
- 1 table listing relevant platform element types
- 1 table listing relevant communication mechanisms
- 1 table assigning conceptual components to platform elements
- 1 table assigning modules to runtime entities
- 1 comprehensive new/enhanced execution configuration diagram (reflecting your module architecture view)
- 1 new/enhanced interaction diagram
- 1 new/enhanced architecture overview diagram (reflecting your module architecture view)
- Any supporting material, including references, appendices, etc.

Hints

Assignment An MS Word template for the assignment is provided. I highly recommend

Template you use this template. Note that this template incorporates *styles*, and you would be well advised to make use of them.

However, if you don't have MS Word, you can also reference the PDF version.

You are encouraged to use the sections as specified in the template; however that does not preclude you from including additional sections as appropriate.

Cross Since you are using the concept mapping application requirements and the **References** conceptual & module views from your previous assignments as the basis of your execution view, each of your issues and design points should be fulfilling one or more of the requirements or building upon one or more of the design points in the conceptual & module views. Almost every design element should refer to one or more requirements, issues, or other parts of the document by name (and would be hyperlinked if this was an electronic document).

Citations You must properly cite of any material you get from other sources. The assignment templates in MS WORD and PDF give an example of a citation to the course text book, but you must also site other sources including "personal communication" with your colleagues.

Ease of reading The best way to do this assignment is to extend assignments 1 and 2 that you have already done. However, to ease the job of marking it (and therefore put the marker in a good mood), please delimit the text and diagrams you have already submitted in the previous assignment by marking it with bar down at the right hand side of the page. This can be done, e.g., by running a highlighter down the right side of the page. (Marks will be deducted if you don't do this.)