

CS 578 – Software Architectures Spring 2009

Homework Assignment #3

Due: *Thursday, March 26, 2009*

– *see course websites for submission details* –

In the past two assignments, you were asked to provide an architectural breakdown and elaborate a set of use-case scenarios for the C4 system. A separate team of software architects came up with an architectural description for C4 in the C2 architectural style. The description, in an ADL called C2SADEL, is provided as an addendum to this assignment. Also provided is a quick tutorial for C2SADEL itself. You are tasked with analyzing your architectural models from assignments #1 and #2 with respect to the provided C2SADEL model. You are expected to find the discrepancies between your models and the C2SADEL model. Be sure to provide detailed answers, expressed in terms of the analysis dimensions discussed in lecture and in Chapter 8 of your textbook, and summarized in Figure 8-11 on page 318 of the textbook. Identify all dimensions that are relevant to your analysis (some may not be).

In particular, you are to do the following:

1. Compare your C4 architecture used as the basis of assignment #2 to the C2SADEL architectural model.
Deliverable: A detailed comparison of the two models along the relevant dimensions.
2. Assess whether the use-case scenarios from assignment #2 can be supported by the C2SADEL architecture.
Deliverable: A detailed discussion of the ability of the C2SADEL architecture to support each of the 13 use-case scenarios.
3. Suggest modifications to the C2SADEL model so that it is able to satisfy each of the use cases it currently is unable to handle properly. Make one such modification directly to the C2SADEL model.
Deliverable: A description of the architectural modification strategy required in order for the C2SADEL model to be compliant with the use-case scenarios. A set of modified C2SADEL component models and possibly C4 configuration model that can satisfy one of those use cases.