

## Assignment 2

**Reading** – Read Chapter 2 of the textbook and review the slides that were presented in the Jan. 10 lecture.

### Problem 1

Reconsider the application described in Assignment 1, Problem 2: a business-to-consumer e-commerce application that supports the following actions:

- a. Look up a catalog entry for a given product, to get the part number and price.
- b. Accept an order for a given product, provided that it's in stock.
- c. Display an advertising banner on the customer's screen.
- d. Get a list of the most popular models of a given type of product.
- e. Display a summary of the customer's purchases, by month, for the past two years.
- f. Print the packing slip for a given order.
- g. When a shipment arrives from a supplier, process all the back orders for products in that shipment.

Assume this is implemented using a 3-tier architecture consisting of Web Servers, the Workflow Controllers, and Transaction Servers. For each action, explain how the functionality maps onto each of the 3 tiers. Assume all functions are provided locally to the site. Be sure to address the following issues:

- i. What data needs to be cached, where should it be cached, and how and when is the cache refreshed?
- ii. How does the web server know which workflow controller to call, and how does the workflow controller know which transaction server to call?
- iii. If the request should be queued, then comment on when and how the queued requests should be processed.