

Homework (HW) Assignment HW2

This is an individual assignment.

This assignment is worth **25 points**. **DUE: 5 SEPT 11:59 PM**

Assignment questions are based on the following textbooks:

- *Stephen Schach [SS] Object-Oriented and Classical Software Engineering 8th Edition 2010**
- *Ian Sommerville [IS] Software Engineering 10th Edition 2015***
- *Roger Pressman [RP] Software Engineering: A Practitioner's Approach 9th Edition 2020***

* [SS] textbook is available at SEMO's bookstore.

** [IS] Ch02 and [RP] Ch02 PDF files are posted in the Week 2 module on the course page on Canvas.

[SS] Ch02 Software Life-Cycle Models

Problems

2.5 How are a workflow, an artifact, and a baseline related? **(3 points)**

- An artifact is a component of a software, a workflow creates or modifies artifacts, and a baseline is a set of artifacts.

2.8 (slight modification) You are a software engineering consultant and have been called in by the vice-president for finance of a corporation that manufactures tires and sells them via its large chain of retail outlets. She wants your organization to build a product that will monitor the company's stock, starting with the purchasing of the raw materials and keeping track of the tires as they are manufactured, distributed to the individual stores, and sold to customers. List **THREE (3) criteria** you would use in selecting a life-cycle model for the project? **(3 points)**

- Possible risks
- Scale of the product
- Vagueness of the requirements.

2.9 (slight modification) List **THREE (3) risks** involved in developing the software in Problem 2.8. **(3 points)**

- Huge scale
- Integration with the retailers
- Decentralized stock and sale.

2.17 Describe a risk inherent in using the waterfall life-cycle model. **(2 points)**

- It's document driven, so the delivered product may miss the client's original expectations.

2.21 Describe a risk inherent in using the spiral life-cycle model. *(2 points)*

- Because it's built around risk analysis, it's only helpful if the developers are experienced enough to know the risks.

[IS] Ch02 Software Processes

Exercises

2.4 Suggest and briefly explain **TWO (2) reasons** why it is important to make a distinction between developing the user requirements and developing system requirements in the requirements engineering process. *(4 points)*

- Developing the user requirements will give a general overview of how the product should function, but system requirements will rigorously show how that will be done.
- User requirements are generally only good enough to build the system requirements, which will be used for the rest of the project.

[RP] Ch02 Process Models

Problems and Points to Ponder

2.1 *Baetjer* [Bae98] notes: "The process provides interaction between users and designers, between users and evolving tools, and between designers and evolving tools [technology]."

List **TWO (2) questions** for each of the following:

(1) designers should ask users. *(2 points)*

- **What are your requirements?**
- **How would you like this laid out.**

(2) users should ask designers. *(2 points)*

- **What are my options?**
- **How do we go about this?**

(3) users should ask themselves about the software product that is to be built. *(2 points)*

- **What are my requirements?**
- **What need is this filling?**

(4) designers should ask themselves about the software product that is to be built and the process that will be used to build it. *(2 points)*

- What steps do I need to take?
- What technologies best fit the job?

