

## Systems Development: Requirements Specification Study Guide

### Study Questions

Peruse the unit's selected readings to answer the following questions:

#### Definitions

Our lecture describes a requirement taxonomy. This comes from several of the readings. Understand the following concepts from the following papers:

- Application: product and program requirements (Harwell et al).
- Class: primary and derived requirements (Ibid.).
- Compliance: mandatory, guidance, information requirements (Ibid.).
- Characteristics: definitions of clear, measurable, modular, neutral, and objective with respect to requirements (Norton, Japenga, La Vie).
- Subjects: function, interface, performance, attribute, and constraint requirements (Japenga, La Vie).

#### System And Software Requirements Specifications

We have three readings in this section: a Wikipedia article on the system requirements specification, the Japenga paper, and the La Vie paper. These last two are about the software requirements specification.

- What is the institution assigning these names for these documents?
- What information does a system spec have that a software spec does not?
- What information does a software spec have that a system spec does not?
- Under what conditions would a project need both types of specifications?
- What is the justification of having a system spec only for our project?

## Consequences of Poor Requirements

The readings in this section show treating requirements specification with such formalism is not an academic exercise or busy work, but a deep root in fiscal practicality.

- Why does total development costs increase so much if there is a requirements specification error?
- What is the single most costly requirement specification error? Meaning the vast majority of all requirement specification errors are due to what?
- What are some other types of significant specification errors?
- Use the COCOMO formulas to calculate how much time and staff one should budget to build a 5,000 SLOC organic software product.

## Collection Methods

Our unit exercise requires us to develop a requirement collection method.

- CRC is an object design method that uses blank index cards as a collection method. How could we adapt this method to collect requirements instead?
- Tables 1 through 5 of the Bass, *et al* paper summarize strengths and weaknesses of five different requirement collection methods. Which of these methods is best suited to reducing the specification errors mentioned previously? Why?

## **Vocabulary**

Each English term in the following list has a specific, technical meaning. Determine the equivalent term in both Armenian and Russian and memorize the meaning (in your favorite language, of course ;] ):

There are a substantial number of vocabulary words for this unit. Fortunately many of them are synonyms, meaning several words have the same meaning. Try to learn synonyms as groups.

- Ambiguous
- Attribute
- Clear
- Complete

- Constraint
- Derived
- Feasible
- Function
- Guidance
- Information
- Interface
- Limitation
- Mandatory
- Measure
- Measurable
- Necessary
- Neutral
- Performance
- Product
- Program
- Primary
- Priority
- Prioritized
- Privacy
- Quality
- Reliable
- Reliability

- Safe
- Safety
- Secure
- Security
- Test
- Testable
- Trace
- Traceable
- Unambiguous
- Verify
- Verifiable