

Systems Development: Preliminary Design Study Guide

Study Questions

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

Definitions

Three Wikipedia articles provide the basis for this unit's core concepts:

- What is the boundary between object oriented analysis and design?
- Similar to our last unit, name some activities that are part of object oriented design, but not object oriented analysis.
- Describe the object oriented concepts of encapsulation, information hiding, inheritance, and polymorphism in your own words.
- What is the object oriented definition of an interface? How does this differ from a Java language definition of interface?

Design Quality

We have two papers talking about good design and two talking about poor design:

- Structured analysis and design has no concept of encapsulation: data and functions are separated. How does this technology disallow good design?
- Another way of asking the above question: how does encapsulation promote good design?
- Why is it poor design to allow public member data?
- Give some examples of software you have used that has good, great, and poor design.
- Both of the papers on good design mention coupling. Why is it so important to reduce or eliminate software coupling in a design?

Class Diagrams

The papers on class diagrams either define the concept or provide a tutorial.

- Explain multiplicity in your own words.
- In what context did we talk about this concept earlier in this course?
- What is dependency? Should a design increase or increase dependency?

Sequence Diagrams

We have papers from all of the same sources, but this time on the subject of sequence diagrams:

- What is the difference between an asynchronous and a synchronous message?
- Why are sequence diagrams sometimes called event traces?
- Do sequence diagrams document internals or interfaces of objects? Why?

Trace Matrix

We have only one paper and one example for the trace matrix. Yet this is an important part of our design.

- We previously mentioned traceability in the course. What was the context?
- Why is developing a traceability matrix during design so important?

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 ;]):

- Aggregation
- Association
- Base class
- Class
- Class diagram
- Cohesion

- Composition
- Containment
- Coupling
- Dependency
- Design
- Encapsulation
- Inheritance
- Information hiding
- Object
- Object oriented
- Polymorphism
- Structured analysis and design
- Sub class
- Super class
- Trace matrix
- Traceability
- Type
- Use case
- User task