ITMD: 511 Application Development Methodologies

Chapters 15 and 16: Software Reuse and Component Based SWE

Exercises

1. What major technical and nontechnical factors hinder software reuse? Do you personally reuse much software and, if not, why not?
2. List the benefits of software reuse and explain why the expected lifetime of the software should be considered when planning reuse.
3. Most desktop software, such as word processing software, can be configured in a number of different ways. Examine software that you regularly use and list the configuration options for that software. Suggest difficulties that users might have in configuring the software. Micro- soft Office (or one of its open-source alternatives) is a good example to use for this exercise.
4. What are the significant benefits offered by the application system reuse approach when compared with the custom software development approach?
5. Explain why adaptors are usually needed when systems are constructed by integrating application systems. Suggest three practical problems that might arise in writing adaptor software to link two application systems.
6. What are the design principles underlying the CBSE that support the construction of under- standable and maintainable software?
7. The principle of component independence means that it ought to be possible to replace one component with another that is implemented in a completely different way. Using an example, explain how such component replacement could have undesired consequences and may lead to system failure.
8. In a reusable component, what are the critical characteristics that are emphasized when the component is viewed as a service?
9. Why is it important that components should be based on a standard component model?
10. What are the essential differences between CBSE with reuse and software processes for original software development?

References