CSSE 220 – Object-Oriented Software Development
Rose-Hulman Institute of Technology

Worksheet 08

Name (Print):______________________________ Section:______________

1. **Design Reasoning — Dependencies**. Consider the two designs shown in the lecture slide: Which design would be easier to modify if the way WorkLog stores time changes?

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2. **Strong Dependency**

   A **strong dependency** exists when one class directly depends on the ________________ of another class.

3. **Strong or Weak dependency?**

   ________________: When code repeatedly calls many getters on another object.

4. **Association vs. Dependency (UML)**

   - **Association** (solid line): an object ________________ another object as a field.
   - **Dependency** (dashed arrow): one class ________________ another temporarily.

5. **Message Chain**

   A message chain occurs when a client makes a ____________________ of method calls to reach and operate on another object.

6. **What is the Message Chain Problem**

   One problem caused by message chains is that

   __________________________.

7. **Coupling**

   Coupling describes how ____________________

8. **Cohesion**

   Cohesion describes how ____________________

9. **Cohesion Level**

   - **High cohesion** means a class has ______________________.
   - **Low cohesion** means a class has ______________________.

10. **High or Low Coupling**

    1) ____________________: Each component is as independent as possible

    2) ____________________: A change in one class is likely to affect many others

11. Exam practice: Which of the following is the best design principle?

    a. Low coupling / High cohesion.
    b. Low coupling / Low cohesion.
    c. High coupling / Low cohesion.
    d. High coupling / High cohesion

12. Exam practice: Which of the following are characteristics of encapsulation? (Select all that apply)

    a. Encapsulation hides the internal state of an object.
    b. Encapsulation allows direct access to object fields from outside the class.
    c. Encapsulation is achieved using private fields and public getter/setter methods.
    d. Encapsulation leads to increased coupling

13. Exam practice: Which of the following are characteristics of dependency in object-oriented design? (Select all that apply)

    a. A class relying on another class for its functionality.
    b. A change in one class can potentially affect another class.
    c. Dependencies can always be resolved by making all classes public.
    d. Dependencies can be minimized using design patterns

14. **Before You Leave**
    Write one question you still have about today's topic.

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