Quiz 5: Purposes, Contexts and Concepts

6170: Software Studio | Fall 2014

Name:                                                                          MIT email:

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True or false?

1. A purpose is an abstract specification of the behavior of an application.
   False: a purpose is a goal to be achieved, and generally does not specify a particular behavior.

2. When developing an application, you should aim for as many purposes as possible.
   False: too many purposes leads to dilution; should focus on a few.

3. It is possible to express purposes completely, so that all required properties are included.
   False: see discussion and quote of Christopher Alexander in lecture notes.

4. The purposes of an application may include completing the development on time.
   False: purposes are about the product, not the process.

5. Articulating the purposes of an application can help in the development of the MVP.
   True: purposes are the essence of the MVP.

6. Every set or relation in a data model is an example of a concept.
   False: a concept is generally a collection of sets and relations; see “friendship” or “style” in slides.

7. Each concept must fulfill exactly one purpose.
   False: a concept can fulfill more than one.

8. Each purpose must be fulfilled by exactly one concept.
   False, although it’s desirable that there should be a key concept for each purpose.

9. The concepts in each application should be disjoint from the concepts in all other applications.
   False: concepts are often reused.

10. Reuse of concepts is dangerous, because it encourages lack of attention to the problem domain.
    False: see discussion of idioms in class.

11. The concept of selecting items is non-trivial due to the complexity of the items being selected.
    False: see discussion in class; lots of trickiness unrelated to the structure of the items.
12. The essence of the style concept is to break the direct link between elements and their formats. 
*True: and see quote by Wheeler in slides.*

13. One purpose of the selection concept in desktop interfaces is to offer operations based on context. 
*True: we discussed this in class. It was a motivating feature of WIMP interfaces.*

14. “Achieving acceptable bandwidth” is a reasonable purpose. 
*False: that’s not a goal in itself. Discussed at start of lecture on concepts.*

15. “Achieving a bandwidth of 50Mbps” is a reasonable purpose. 
*False: just making it more precise doesn’t help; the bandwidth has to be for something.*

16. A system with no external APIs must have a trivial context diagram. 
*False: interactions with users and physical devices create complexity.*

17. The context diagram shows the key sets of objects and their relationships. 
*False: that’s the data model.*

18. The users of a system should appear somewhere in an application’s context diagram. 
*True: the context shows how the users are connected to the system.*

19. The users of a system should appear somewhere in an application’s data model. 
*False: the data model says what’s stored, and not all systems need user accounts.*

20. “Being secure” is not a legitimate purpose. 
*True: same as bandwidth above.*

21. “Efficient online trading” may be the central concept in a system. 
*False: too vague, and more of a purpose than a concept.*

22. The notion of “relative reference” in a spreadsheet is too low level to be a concept. 
*False: as discussed in class, RRs are arguably the enabling concept in spreadsheets.*

23. In a context diagram, every interaction must go through the system under construction. 
*False: see action at a distance examples in slides.*

24. All concepts are formed by analogy to the real world. 
*False: see categories of concepts slide.*

25. Algorithms are the essence of software design. 
*False: concepts are more central.*