**Object-Oriented Systems Analysis and Design Using UML, 2/e**

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**Design Patterns**

**Self-test Questions**

Top of Form

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| --- | --- | --- | --- | --- |
| Your Results: | | | | |
| The correct answer for each question is indicated by a This is the correct answer.. | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
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| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **1** | **INCORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following statements best describes the relationship between patterns and frameworks? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | A framework may involve many patterns. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | A framework is more abstract than a pattern. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | A pattern may incorporate one or more frameworks. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
|  | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **2** | **INCORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Several key principles underlie the use of patterns. Which of the following is not a key principle involved in the use of patterns? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | Abstraction. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | Separation of concerns. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | Conformance testing. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
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| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **3** | **INCORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | A pattern is normally described in the format of a pattern template. Which of the following statements best describes the forces of a pattern? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | The forces embody the constraints that must be addressed by the solution. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | The forces describe why it is important to find a solution to the problem | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | The forces are the constraints that solution is unable to resolve. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
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| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **4** | **CORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following is not one of the categories defined for the GOF patterns? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | Creational. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | Static. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | Behavioural. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
|  | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **5** | **INCORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following best describes an advantage of the Singleton pattern? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | The pattern can be used to ensure that no more than a fixed number of instances of the Singleton class are created. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | Using the pattern always makes a system easier to maintain. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | When the pattern is used global data can be accessed more quickly. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
|  | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **6** | **CORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following statements is true about the Composite pattern? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | The pattern must be used in conjunction with the Singleton pattern. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | The pattern makes it easier to add new leaf subclasses. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | The pattern makes it easier to add new operations to each of the leaf subclasses. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
|  | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **7** | **INCORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following best describes when to use the State pattern? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | The pattern may be used when a class has many states. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | The pattern may be used when a class has many operations. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | The pattern may be used when an object appears to change class at run-time. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
|  | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **8** | **CORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following is not an advantage of the State pattern? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | State behavior is localized. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | The Singleton pattern may be used with the State pattern. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | State transitions are made explicit. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
|  | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **9** | **CORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following is not an issue that should be considered before using a pattern? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | If a simpler solution exists it should be used in preference to the pattern. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | It is preferable to use patterns by themselves. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | It is important that the context of the problem is consistent with the context of the pattern. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
|  | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| **10** | **CORRECT** | http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | Which of the following statements is most appropriate when using a pattern during information systems development? | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **A)** | The pattern must be used without any changes to its overall structure. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | This is the correct answer. | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio_selected.gif | **B)** | The pattern should be implemented with names that are meaningful in the context of the application. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | |  | |  |  |  | | --- | --- | --- | | http://highered.mcgraw-hill.com/olcweb/styles/v1_Europe/europe/radio.gif | **C)** | The names of the classes in the pattern should be given the general names from the pattern so that their roles are unambiguous. | |
| http://highered.mcgraw-hill.com/olcweb/styles/shared/spacer.gif | | | | |