Feedback — Optional Week 10 Quiz (Part 1)

Help Center

You submitted this quiz on **Mon 9 Mar 2015 3:47 PM PDT**. You got a score of **9.75** out of **10.00**. However, you will not get credit for it, since it was submitted past the deadline.

Question 1

The Active Object Pattern helps:

Your Answer		Score	Explanation
○ Ease of use			
○ Efficiency			
◉ Scalability	✔	1.00	
○ Reliability			
Total		1.00 / 1.00	

Question 2

An ACE_Task object differs from a Java Thread in the following ways (Check all that apply):

Your Answer		Score	Explanation
☐ It provides a cross-platform API for spawning a thread of control	✔	0.25	
☐ It defines a hook method that subclasses can override to perform concurrent operations	✔	0.25	
☑ It enables a pool of threads to be spawned via a single API call	✔	0.25	

☑ It contains a message queue that can decouple data and requests from the point of time when they are processes	✔	0.25
Total		1.00 / 1.00

Question 3

The ACE framework provides Tasks as what type of concurrency model?

Your Answer		Score	Explanation
○ Actor based			
◉ Producer/Consumer based	✔	1.00	
○ Software Transactional Memory based			
○ Hardware Transactional Memory based			
Total		1.00 / 1.00	

Question 4

The role of the Reactor pattern and ACE Reactor framework in the thread-per-connection implementation of JAWS is to:

Your Answer		Score	Explanation
○ Process incoming HTTP GET requests reactively			
◉ Dispatch callbacks to the TPC_HTTP_Acceptor	✔	1.00	
○ Dynamically configure the HTTP_Server_Daemon into the JAWS web server address space			
○ Memory map requested content and return it to the client			
Total		1.00 /	

1.00

Question 5

The JAWS implementation of the Half-Sync/Half-Async pattern combines these two patterns:

Your Answer		Score	Explanation
○ Component Configurator and Activator			
○ Reactor and Wrapper Facade			
○ Reactor and Leader/Followers			
◉ Reactor and Active Object	✔	1.00	
Total		1.00 / 1.00	

Question 6

The Half-Sync/Half-Async implementation of the JAWS web server based on a thread pool may perform better than the earlier Active Object implementation based on a thread-per-connection because:

Your Answer		Score	Explanation
○ It uses the Reactor in the main data processing path			
○ It can be ported to a wider range of operating systems platforms			
○ The design has fewer components and is easier to understand/implement			
◉ It bounds the number of threads to match the available parallel processing resources more effectively	✔	1.00	
Total		1.00 / 1.00	

Question 7

True or false: Monitor Object incurs less context switching, synchronization, and data movement overhead than Active object.

Your Answer		Score	Explanation
○ False			
◉ True	✔	1.00	
Total		1.00 / 1.00	

Question 8

What are some benefits of the Strategized Locking Pattern (Check all that apply):

Your Answer		Score	Explanation
☑ One can quickly change the locking mechanism	✔	0.25	
☐ Puts the locking mechanism in the interface for all to see	✔	0.25	
☐ Is not re-usable	✔	0.25	
☑ Enhances flexibility	✔	0.25	
Total		1.00 / 1.00	

Question 9

Which of the following are performance enhancements associated with the Leader/Followers pattern? (check all that apply)

Your Answer		Score	Explanation
☑ Removes the need for data buffer sharing between threads	✔	0.25	
☐ Provides an explicit queue that allows reordering of incoming events	✔	0.25	
☑ Minimizes locking overhead by not exchanging data between threads	✔	0.25	
☑ Improves CPU cache affinity	✔	0.25	
Total		1.00 / 1.00	

Question 10

Which of the following are reasons why we use barrier synchronization at the bottom of our multi-threaded web server? (check all that apply)

Your Answer		Score	Explanation
☑ To ensure the operating system doesn't shut down the entire process when the main thread of control exits	✔	0.25	
☑ To ensure that the web server runs portably on multiple operating systems.	✔	0.25	
☑ To ensure that memory is not leaked when the program exits	✖	0.00	
☐ To optimize performance on Linux operating system platforms	✔	0.25	
Total		0.75 / 1.00	