

Feedback — Week 1 Quiz

[Help](#)

You submitted this quiz on **Fri 16 May 2014 9:15 PM PDT**. You got a score of **31.00** out of **39.00**. You can [attempt again](#), if you'd like.

Question 1

Which of the following are motivations for concurrency described in these videos?

Your Answer	Score	Explanation
<input checked="" type="checkbox"/> Simplify program structure relative to event-driven programming	✓ 1.00	
<input checked="" type="checkbox"/> Enhance performance on multi-core platforms	✓ 1.00	
<input checked="" type="checkbox"/> Improve perceived responsiveness	✓ 1.00	
<input type="checkbox"/> Make the program easier to debug	✓ 1.00	
<input checked="" type="checkbox"/> Make the program behave more deterministically with respect to runtime execution order	✗ 0.00	
Total	4.00 / 5.00	

Question Explanation

See the Section 1 Module 1 Part 1 video

Question 2

According to the videos, which of the following are reasons why purely event-driven software is hard to program?

Your Answer**Score****Explanation**☒ It's hard to optimize its performance

✓ 1.00

☐ It's not portable across operating systems

✓ 1.00

☒ It's behavior is non-deterministic on multi-core hardware

✗ 0.00

☐ The structure of its control flow is obscured in both time and space

✗ 0.00

Total

2.00 /
4.00**Question Explanation**

See the Section 1 Module 1 Part 1 video

Question 3

Which of the following are examples of "accidental complexities" as described in the videos?

Your Answer**Score****Explanation**☒ Use of low-level application programming interfaces (APIs)

✓ 1.00

☐ Deadlocks resulting from "circular waiting"

✓ 1.00

☒ Limitations with debugging environments and debugging tools

✓ 1.00

☐ Race conditions in critical sections due to lack of synchronization mechanisms

✓ 1.00

☐ Ensuring that threads are given proper access to system resources

✓ 1.00

Total

5.00 /
5.00**Question Explanation**

See the Section 1 Module 1 Part 2 video

Question 4

Which of the following are examples of inherent complexities related to synchronization and scheduling presented in these videos?

Your Answer	Score	Explanation
<input checked="" type="checkbox"/> Scheduling the arrival and departure of airplanes based on limited resources, such as gates and runways	✓ 1.00	
<input type="checkbox"/> Casting void pointers to whatever structure is used to pass data between a caller and callee in the Pthreads environment	✓ 1.00	
<input type="checkbox"/> Using the POSIX Pthreads API (defined using the C programming language) to program concurrent applications	✓ 1.00	
<input checked="" type="checkbox"/> Ensuring applications running concurrently on an Android device don't corrupt raw contact entries in the SQLite Contacts database	✓ 1.00	
Total	4.00 / 4.00	

Question Explanation

See the Section 1 Module 1 Part 2 video

Question 5

Which of the following implementation elements are unique to each thread, according to the videos?

Your Answer	Score	Explanation
<input checked="" type="checkbox"/> A program counter	✓ 1.00	
<input checked="" type="checkbox"/> A run-time stack	✓ 1.00	
<input type="checkbox"/> Static data areas	✓ 1.00	
<input type="checkbox"/> The run-time heap	✓ 1.00	

Total

4.00 / 4.00

Question Explanation

See the Section 1 Module 2 Part 1 video

Question 6

Which of the following are ways that a program can give a Java Thread some code to run, according to the videos?

Your Answer	Score	Explanation
<input type="checkbox"/> Extend the Thread class, override its run() hook method, and explicitly call run() from application code to start the Thread without having to call its start() method explicitly	✓ 1.00	
<input checked="" type="checkbox"/> Extend the Thread class, override its run() hook method, and call start() on an instance of the extended Thread class	✓ 1.00	
<input checked="" type="checkbox"/> Implement the Runnable interface, override its run() hook method, pass the Runnable object to the constructor of a new Thread object, and call start() on the Thread object	✓ 1.00	
Total	3.00 / 3.00	

Question Explanation

See the Section 1 Module 2 Part 1 video

Question 7

Which of the following statements are true according to the videos?

Your Answer	Score	Explanation
<input type="checkbox"/> The only reliable and portable way to terminate a Java Thread is to call its stop() method	✓ 1.00	

☒ Java the Thread interrupt() method behaves like traditional hardware & operating system interrupts, i.e., it automatically terminates a Thread regardless of what it is doing ✗ 0.00

☒ If user code in a Java Thread calls wait(), join(), or sleep() these methods check if they've been interrupted and throw the InterruptedException ✓ 1.00

☐ The use of a volatile boolean "stop" flag automatically wakeups blocking wait(), join(), and sleep() calls ✓ 1.00

Total 3.00 / 4.00

Question Explanation

See the Section 1 Module 2 Part 2 video

Question 8

Which of the following statements about a Java Thread's lifecycle are correct, according to the videos?

Your Answer	Score	Explanation
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<input checked="" type="checkbox"/> When a Thread's run() hook method returns the Thread transitions to the Runnable state	✗ 0.00	
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<input type="checkbox"/> When a Java program creates a Thread object it's initially in the Runnable state	✓ 1.00	
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<input type="checkbox"/> When the Android Linux scheduler selects a Thread to execute it transitions to the Running state	✗ 0.00	
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<input type="checkbox"/> When a Java program calls sleep() the Thread transitions to the Blocked state	✓ 1.00	
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Total 2.00 / 4.00

Question Explanation

See the Section 1 Module 2 Part 2 video

Question 9

Which of the following are the consequences of the Java ArrayList class implementation not being synchronized in the BuggyQueue example, according to the videos?

Your Answer	Score	Explanation
<input checked="" type="checkbox"/> If multiple threads access an ArrayList instance concurrently then it may be corrupted due to race conditions	✓ 1.00	
<input checked="" type="checkbox"/> The ArrayList class should not be used in concurrent Java programs under any circumstances	✗ 0.00	
<input type="checkbox"/> The ArrayList class should only be used in concurrent Java programs running on a single-core computer	✓ 1.00	
Total	2.00 / 3.00	

Question Explanation

See the Section 1 Module 2 Part 3 video

Question 10

Which of the following statements about the PingPongWrong program are correct, according to the material presented in the videos?

Your Answer	Score	Explanation
<input type="checkbox"/> Although this program doesn't work properly in the Java console environment, it will work correctly on Android due to Android's multi-threaded design restrictions	✓ 1.00	
<input checked="" type="checkbox"/> Using Java Semaphores and CountdownLatches will make the program alternate printing "ping" and "pong" correctly, but will make the performance unacceptably slow	✗ 0.00	
<input checked="" type="checkbox"/> After the run() methods of both PlayPingPongThread objects	✓ 1.00	

return, the calls to their join() methods in the main Thread will also return

Total

2.00 /

3.00

Question Explanation

See the Section 1 Module 2 Part 3 video