26 Lecture - CS410

Important Mcqs

Question 1: What is a thread in the context of programming?

a) A function call

b) A sequence of instructions

c) A graphical user interface element

d) An input/output operation

Solution: b) A sequence of instructions

Question 2: What is the purpose of thread synchronization?

a) To increase the number of threads

b) To reduce the number of threads

c) To coordinate thread execution and data access

d) To stop all threads simultaneously

Solution: c) To coordinate thread execution and data access

Question 3: What is a race condition in multithreading?

a) A competition between threads for system resources

b) A condition where two or more threads access shared data concurrently, leading to unexpected results

c) A condition where a thread fails to start

d) A synchronization mechanism

Solution: b) A condition where two or more threads access shared data concurrently, leading to unexpected results

Question 4: Which of the following is a thread synchronization primitive?

a) Thread.sleep()

b) Thread.start()

c) Thread.join()

d) Thread.run()

Solution: c) Thread.join()

Question 5: What is the purpose of the "synchronized" keyword in Java?

a) It creates a new thread

b) It marks a method as deprecated

c) It prevents a method from being overridden

d) It ensures exclusive access to a block of code by only one thread at a time

Solution: d) It ensures exclusive access to a block of code by only one thread at a time

Question 6: What can be used to prevent deadlock in multithreaded programs?

a) Increasing the number of threads

b) Decreasing the number of threads

c) Using thread.sleep()

d) Implementing a proper order for acquiring locks

Solution: d) Implementing a proper order for acquiring locks

Question 7: Which synchronization primitive allows multiple threads to read a shared resource simultaneously, but only one thread to write?

a) Semaphore

b) Mutex

c) ReadWriteLock

d) CountDownLatch

Solution: c) ReadWriteLock

Question 8: What is a critical section in the context of synchronization?

a) A section of code that only runs on a single thread

b) A section of code that must be executed by multiple threads concurrently

c) A section of code that is ignored by all threads

d) A section of code where errors are expected

Solution: b) A section of code that must be executed by multiple threads concurrently

Question 9: Which of the following is a potential drawback of excessive thread synchronization?

a) Deadlocks

b) Race conditions

c) Improved performance

d) Concurrent execution

Solution: a) Deadlocks

Question 10: What is a mutex?

a) A type of thread

b) A synchronization primitive that allows multiple threads to access a resource simultaneously

c) A synchronization primitive that ensures only one thread can access a resource at a time

d) A thread scheduler

Solution: c) A synchronization primitive that ensures only one thread can access a resource at a time