Started on	Sunday, 3 December 2023, 9:44 PM
State	Finished
Completed on	Sunday, 3 December 2023, 9:47 PM
Time taken	2 mins 57 secs

Question 1

Correct

Marked out of 1.00

Which of the following statements about possible problems of processes and threads is/are correct?

- [x] a. Starvation is the phenomena in which a process or thread is not able to acquire the desired resources ✔
- [x] b. A deadlock is the phenomena in which two processes or threads suffer from starvation but don't release their locks to solve the problem ✔
- [ ] c. Busy waiting is a scenario in which a higher priority process is preempted by a lower priority process
- [ ] d. Priority inversion is a scenario in which a process or thread repeatedly continues to check if a condition is true
- [x] e. In a race condition, the system's substantive behavior is dependent on the sequence or timing of other (uncontrollable) events ✔

Question 2

Correct

Marked out of 1.00

Which of the following statements about multitasking is/are correct?

- [x] a. The OS component which is responsible for the time management in preemptive multitasking is called "scheduler" ✔
- [ ] b. The OS component which is responsible for the time management in preemptive multitasking is called "round robin"
- [x] c. In the case of a computer with a single CPU, only one task is running at any point in time ✔
- [x] d. Multitasking allows many more tasks to be run than there are CPUs ✔
- [x] e. The act of reassigning a CPU from one task to another one is called a context switch ✔

Question 3

Correct

Marked out of 1.00

Which of the following statements about preemptive and cooperative multitasking is/are correct?

- [ ] a. Preemptive multitasking is the old style version of multitasking
- [x] b. With cooperative multitasking, each application is responsible for slot management ✔
- [ ] c. With preemptive multitasking, each application is responsible for slot management
- [x] d. Cooperative and preemptive multitasking use different slot management approaches ✔
- [x] e. Cooperative multitasking is the old style version of multitasking ✔

Question 4

Correct

Marked out of 1.00

Which of the following statements are ways to realize asynchronous behaviour in C#?

- [x] a. Thread class ✔
- [ ] b. Intermediate class
- [ ] c. NeverWait/sync
- [x] d. ThreadPool class ✔
- [ ] e. Scheduler class
- [x] f. BackgroundWorker ✔

Question 5

Correct

Marked out of 1.00

Which of the following statements about sequence diagrams is/are correct?

- [x] a. A sequence diagram shows lifelines, i.e., different processes or objects that live simultaneously, as parallel vertical lines ✔
- [x] b. A sequence diagram is a subtype of a behavioral UML diagram ✔
- [ ] c. A sequence diagram allows asynchronous messages but no synchronous messages
- [ ] d. A sequence diagram allows synchronous messages but no asynchronous messages
- [x] e. A sequence diagram shows messages, which are exchanged between lifelines, as horizontal arrows ✔

Started on	Sunday, 3 December 2023, 9:49 PM
State	Finished
Completed on	Sunday, 3 December 2023, 10:21 PM
Time taken	32 mins 12 secs

Question 1

Correct

Marked out of 1.00

Which of the following are mechanisms to realize the concept of a mutex?

- [ ] a. displays
- [x] b. semaphores ✔
- [x] c. locks ✔
- [x] d. monitors ✔
- [ ] e. loops
- [ ] f. sockets

Question 2

Correct

Marked out of 1.00

Which of the following examples create(s) a thread object in C#?

- [x] a. Thread objMyThread3 = new Thread(MyVeryLongMethod); ✔
- [ ] b. Thread objMyThread4 = new Thread() {
  public void run() {MyVeryLongMethod}};
- [x] c. Thread objMyThread2 = new Thread(✔
  new ThreadStart(MyVeryLongMethod));
- [ ] d. ThreadStart objThread1 = new ThreadStart(MyVeryLongMethod);
  objThread1.Start();
- [x] e. ThreadStart objThread1 = new ThreadStart(MyVeryLongMethod); ✔
  Thread objMyThread1 = new Thread(objThread1);

Question 3

Incorrect

Marked out of 1.00

Which of the following answers depict thread methods in C#?

- [x] a. Interrupt() ✔
- [x] b. Resume() ✔
- [x] c. Sleep() ✔
- [x] d. Join() ✔
- [x] e. Abort() ✔
- [x] f. Awake() ✖

Question 4

Correct

Marked out of 1.00

Which of the following statements about multithreading (not multitasking) is/are correct?

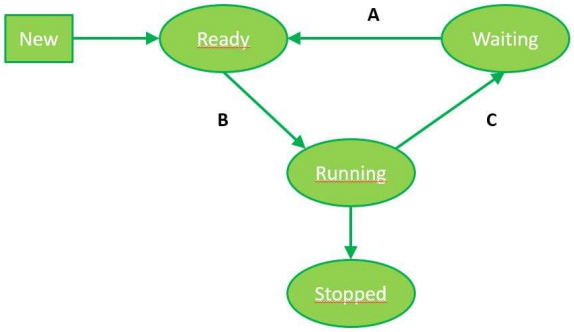
- a. A multithreaded application is always slower than a single threaded application
- b. Multithreading allows a better CPU utilization ✔
- c. Multithreading allows for dedication of a unique thread to a well defined independent job ✔
- d. Multithreading makes it easier to find bugs
- e. Multithreading usually increases the GUI responsiveness ✔

Question 5

Correct

Marked out of 1.00

Assign the transitions between process states correctly.



- a. A = wake up ✔
- b. A = scheduled
- c. A = block
- d. B = wake up
- e. B = scheduled ✔
- f. B = block
- g. C = wake up
- h. C = scheduled
- i. C = block ✔

Started on	Sunday, 3 December 2023, 10:23 PM
State	Finished
Completed on	Sunday, 3 December 2023, 10:24 PM
Time taken	1 min 22 secs

Question 1

Correct

Marked out of 1.00

Which of the following statements about Processes, Threads, Tasks and Applications is/are correct?

- [x] a. 1 x Task => 1 x Threads ✔
- [x] b. 1 x Process => n x Tasks ✔
- [ ] c. 1 x Process => n x Applications
- [ ] d. 1 x Thread => n x Processes
- [x] e. 1 x Application = 1 x Process ✔

Question 2

Correct

Marked out of 1.00

Which of the following examples create(s) a thread object in C#?

- [ ] a. Thread objMyThread4 = new Thread() {
  public void run() {MyVeryLongMethod}};
- [ ] b. ThreadStart objThread1 = new ThreadStart(MyVeryLongMethod);
  objThread1.Start();
- [x] c. Thread objMyThread2 = new Thread(✔
  new ThreadStart(MyVeryLongMethod));
- [x] d. ThreadStart objThread1 = new ThreadStart(MyVeryLongMethod); ✔
  Thread objMyThread1 = new Thread(objThread1);
- [x] e. Thread objMyThread3 = new Thread(MyVeryLongMethod); ✔

Question 3

Correct

Marked out of 1.00

Which of the following statements about multitasking is/are correct?

- [x] a. The act of reassigning a CPU from one task to another one is called a context switch ✔
- [x] b. Multitasking allows many more tasks to be run than there are CPUs ✔
- [x] c. In the case of a computer with a single CPU, only one task is running at any point in time ✔
- [ ] d. The OS component which is responsible for the time management in preemptive multitasking is called “round robin”
- [x] e. The OS component which is responsible for the time management in preemptive multitasking is called “scheduler” ✔

Question 4

Correct

Marked out of 1.00

Which of the following statements about preemptive and cooperative multitasking is/are correct?

- [x] a. Cooperative multitasking is the old style version of multitasking ✔
- [x] b. Cooperative and preemptive multitasking use different slot management approaches ✔
- [x] c. With cooperative multitasking, each application is responsible for slot management ✔
- [ ] d. With preemptive multitasking, each application is responsible for slot management
- [ ] e. Preemptive multitasking is the old style version of multitasking

Question 5

Correct

Marked out of 1.00

Which of the following statements about sequence diagrams is/are correct?

- [x] a. A sequence diagram is a subtype of a behavioral UML diagram ✔
- [x] b. A sequence diagram shows lifelines, i.e., different processes or objects that live simultaneously, as parallel vertical lines ✔
- [ ] c. A sequence diagram allows asynchronous messages but no synchronous messages
- [ ] d. A sequence diagram allows synchronous messages but no asynchronous messages
- [x] e. A sequence diagram shows messages, which are exchanged between lifelines, as horizontal arrows ✔