Computer Engineering Spring 2007 Quiz 1

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4. Chapter: Spring 2007 Quiz 1

1. Spring 2007 Quiz 1 Questions

4.1.1. When a program such as Xterm is run remotely and displays its windo...

Author: Samuel Madden

1. [6 points]: Which of the following statements are true of the X Windows System (as described in the X Windows paper, reading # 5)?

When a program such as Xterm is run remotely and displays its window on your local workstation, that remote machine is considered an X server.

Please choose only one answer:
- True
- False

Check the answer of this question online at QuizOver.com:
Question: When a program such as Xterm is run remotely 1. 6 points Which of

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4.1.2. In X Windows, interactive widgets such as pulldown menus and clicka...

Author: Samuel Madden

1. [6 points]: Which of the following statements are true of the X Windows System (as described in the X Windows paper, reading # 5)?

In X Windows, interactive widgets such as pulldown menus and clickable buttons are implemented by the client.

Please choose only one answer:

- True
- False

4.1.3. Like most client/server protocols, the X Windows protocol exclusive...

Author: Samuel Madden

1. [6 points]: Which of the following statements are true of the X Windows System (as described in the X Windows paper, reading # 5)?

Like most client/server protocols, the X Windows protocol exclusively uses big-endian byte ordering for all network communication.

Please choose only one answer:

- True
- False

4.1.4. The management of standard I/O streams of child processes.

Author: Samuel Madden

2. [8 points]: The UNIX designers chose to have the process created by a fork() share (inherit) the open file descriptors of its parent.

Which of the following would become more complicated had they decided on an alternate fork() semantics, in which the child process is created with no open file descriptors?

The management of standard I/O streams of child processes.

Please choose only one answer:

- True
- False

4.1.5. Structure of inodes as stored on the disk.

Author: Samuel Madden

2. [8 points]: The UNIX designers chose to have the process created by a fork() share (inherit) the open file descriptors of its parent.

Which of the following would become more complicated had they decided on an alternate fork() semantics, in which the child process is created with no open file descriptors?

Structure of inodes as stored on the disk.

Please choose only one answer:
- True
- False

4.1.6. The format of directories as stored on the disk.

Author: Samuel Madden

2. [8 points]: The UNIX designers chose to have the process created by a fork() share (inherit) the open file descriptors of its parent.

Which of the following would become more complicated had they decided on an alternate fork() semantics, in which the child process is created with no open file descriptors?

The format of directories as stored on the disk.

Please choose only one answer:

- True
- False

Author: Samuel Madden

2. [8 points]: The UNIX designers chose to have the process created by a fork() share (inherit) the open file descriptors of its parent.

Which of the following would become more complicated had they decided on an alternate fork() semantics, in which the child process is created with no open file descriptors?

The creation of pipes between processes.

Please choose only one answer:
- True
- False

Check the answer of this question online at QuizOver.com:
Question: The creation of pipes between processes. 2. 8 points UNIX designers

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Interactive Question:
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Author: Samuel Madden

3. [8 points]: Ben Bitdiddle is using a MapReduce cluster (as described in reading #8) to process some data.

He finds that some of his programs are running slowly and needs your help to understand which performance enhancements to try.

For each of the following MapReduce configurations and suggested enhancements, circle True if the statement about the enhancement is true, and False otherwise.

If the performance of the system is not limited by network throughput or the rate at which map tasks can read from or write to the disk, then doubling the number of nodes in the system will probably improve performance if the number of map and reduce tasks is greater than the number of nodes.

Please choose only one answer:

- True
- False

Check the answer of this question online at QuizOver.com:
Question: If the performance of the system is not 3. 8 points Ben Bitdiddle

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4.1.9. If some tasks on some workers take much longer than others to compl...

Author: Samuel Madden

3. [8 points]: Ben Bitdiddle is using a MapReduce cluster (as described in reading #8) to process some data.

He finds that some of his programs are running slowly and needs your help to understand which performance enhancements to try.

For each of the following MapReduce configurations and suggested enhancements, circle True if the statement about the enhancement is true, and False otherwise.

If some tasks on some workers take much longer than others to complete, and these "stragglers" are the bottleneck in the system, then allocating additional nodes to these straggler tasks will definitely improve performance.

Please choose only one answer:

- True
- False

Author: Samuel Madden

3. [8 points]: Ben Bitdiddle is using a MapReduce cluster (as described in reading #8) to process some data.

He finds that some of his programs are running slowly and needs your help to understand which performance enhancements to try.

For each of the following MapReduce configurations and suggested enhancements, circle True if the statement about the enhancement is true, and False otherwise.

the entire 1000-node cluster can complete these MapReduce operations in 100 seconds then doubling the CPU performance (task processing rate) of each machine in the cluster may improve performance somewhat but not significantly.

Assume that there are 1000 machines, 1000 map tasks and 100 reduce tasks, and that the CPU processing time for each map or reduce task to execute on a single machine is 1 second. If

Please choose only one answer:

- True
- False

Author: Samuel Madden

3. [8 points]: Ben Bitdiddle is using a MapReduce cluster (as described in reading #8) to process some data.

He finds that some of his programs are running slowly and needs your help to understand which performance enhancements to try.

For each of the following MapReduce configurations and suggested enhancements, circle True if the statement about the enhancement is true, and False otherwise.

Suppose local disk reads and writes are 100 times as fast as network transfers and the coordinator is never able to achieve locality by assigning map workers to map input tasks stored on their local disks. In that case, if the system has an I/O bottleneck, then doubling network throughput will substantially improve performance.

Please choose only one answer:

- True
- False

4.1.12. Preemptive scheduling allows the kernel's thread manager to run app...

Author: Samuel Madden

4. [8 points]: Which of the following statements about operating system kernels are true?

Preemptive scheduling allows the kernel's thread manager to run applications in a way that helps avoid fate sharing.

Please choose only one answer:

- True
- False

4.1.13. The kernel serves as a trusted intermediary between programs runnin...

Author: Samuel Madden

4. [8 points]: Which of the following statements about operating system kernels are true?

The kernel serves as a trusted intermediary between programs running on the same computer.

Please choose only one answer:

- True
- False

Check the answer of this question online at QuizOver.com:
Question: The kernel serves as a trusted intermediary 4. 8 points Which of

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http://www.quizover.com/flashcards/the-kernel-serves-as-a-trusted-intermediary-4-8-points-which-of?pdf=3044

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http://www.quizover.com/question/the-kernel-serves-as-a-trusted-intermediary-4-8-points-which-of?pdf=3044

4.1.14. In an operating system that provides virtual memory, the kernel mus...

Author: Samuel Madden

4. [8 points]: Which of the following statements about operating system kernels are true?

In an operating system that provides virtual memory, the kernel must be invoked to resolve every memory reference.

Please choose only one answer:

- True
- False

4.1.15. When a kernel switches a processor from one application to another ...

Author: Samuel Madden

4. [8 points]: Which of the following statements about operating system kernels are true?

When a kernel switches a processor from one application to another application, the target application sets the PMAR register appropriately after it is running in user space.

Please choose only one answer:

- True
- False