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QUIZ 0 DIRECTIONS

This is the first quiz for the course. It will test your knowledge of

- course prerequisites,
- the first week of lectures, and
- knowledge of the course policies.

At the bottom of this page is a single "Check" button that will grade your answers for all of the questions. While you have unlimited submissions for this quiz, we encourage you to try to figure out the answers to the problems rather than brute-forcing all possibilities.

QUIZ 0

QUESTION 1:

Class `Customer` has a subclass `VIPCustomer`. Assuming a well written program, which of the following statements are true? (More than one may be true.)

- ☐ Any method that takes an instance of `VIPCustomer` can safely be passed an instance of `Customer`.
- ☒ Any method that takes an instance of `Customer` can safely be passed an instance of `VIPCustomer`.
- ☐ The set of instance variables of a `VIPCustomer` must be the same as the set of instance variables of a `Customer`.
- ☒ If you call a nonexistent method on a `VIPCustomer`, the call will still work if `Customer` implements that method.

QUESTION 2:

Which statement is ALWAYS true when an exception occurs in a modern programming language?

- ☐ The program will immediately stop execution.
- ☒ An immediate change of control flow occurs.
- ☐ An arithmetic operation was performed whose result is outside the range that the computer can represent.

QUESTION 3:

You're asked to write a program whose input is a text document of about 1 million words, and whose output is the number of times each word appears in the document. Which of the following data structures would be most efficient for solving this problem?

- ☐ Array
- ☒ Hash map or hash table
- ☐ Linked list
- ☐ Tree

QUESTION 4:

Performance data from a particular website shows that for 100 sampled requests, 90 were of type A and the remaining 10 were of type B. The 90 type A requests were completed in a total of 8ms. The 10 type B requests were completed in a total of 28ms. Which statement is TRUE regarding this distribution of latencies?

- ☐ The median request latency is higher than the mean request latency.
- ☒ The median request latency is lower than the mean request latency.
- ☐ The site always has lower throughput for type A requests than for type B requests.
- ☐ The site always has lower throughput for type B requests than for type A requests.

QUESTION 5:

Which statements are true about the content of this class? (More than one may be true.)

- ☐ One reason to take the class is to get an official certificate from UC Berkeley
- ☒ You can either do the assignments by downloading Virtual Box and run the environment on your own computer or by using an preinstalled environment on AWS EC2.
- ☒ This class is about principles of software engineering, and will teach how to build a SaaS app using the Agile lifecycle and a modern programming language and framework (Ruby on Rails).
- ☒ In the prior offering, about half of the students spent 1 to 6 hours per week on this class, while the other half typically spent 7 to 12 hours per week.
- ☐ Since assignments are automatically graded, there is little programming in this course.
- ☐ This course uses easier assignments than the on campus UC Berkeley course which it is based on.

QUESTION 6:

Which statements are true about textbooks for this class? (More than one may be true.)

- ☐ You must buy the book "Engineering Long-Lasting Software".
- ☒ The information described in the recommended textbooks are also available for free, with links to resources listed on the course info page.
- ☐ Although the course is free, you must buy at least one book to take this class.
- ☐ To read a Kindle version of a book, you must first buy a hardware Kindle reader.

- ☒ Kindle Book Reader software also runs on Linux systems.

QUESTION 7:

Which statement is NOT part of the Agile Manifesto?

- ☐ We value individuals and interactions over processes and tools.
- ☒ We value self-organizing over managers.
- ☐ We value working software over comprehensive documentation.
- ☐ We value customer collaboration over contract negotiation.
- ☐ We value responding to change over following a plan.

QUESTION 8:

Service Oriented Architecture improves programmer productivity via which of the following?

- ☐ Conciseness.
- ☒ Reuse.
- ☐ Synthesis.
- ☐ Automation and Tools.

QUESTION 9:

Which of the following explanations for Software as a Service's popularity is least accurate?

- ☒ Since the client software is usually deployed in the browser there are no compatibility issues for SaaS client software.
- ☐ SaaS eliminates most installation problems caused by computer hardware capability or operating system version.
- ☐ SaaS eliminates worries about data loss.
- ☐ SaaS makes it easy for groups of people to interact with the same data.
- ☐ If data is large or changes frequently, it is simpler to keep a single copy at central site.
- ☐ A single copy of the software running on the controlled environment of a central computer reduces software development difficulties.
- ☐ A single copy of the software running on the controlled environment of a central computer means upgrades are easier for SaaS developers.
- ☐ A single copy of the software running on the controlled environment of a central computer means no software upgrade requests for SaaS users.

QUESTION 10:

Which statement is NOT true about Cloud Computing?

- ☒ Traditional datacenters are not as cost effective primarily because they buy different types of computers than those found in the cloud computing warehouses.
- ☐ Using many computers for a few hours costs the same amount as using a few computers for many hours.
- ☐ Cloud computing allows anybody to use the equivalent of one the 50 fastest computers in the world for less than \$1000 per hour.
- ☐ Cloud computing is based on clusters of commodity computers connected by commodity Ethernet switches.

QUESTION 11:

Which of the following is the course policy regarding submission of homework assignments after their due date?

- ☒ Homework assignments submitted after the due date but less than seven days late will receive a 25% penalty.
- ☐ There is no late penalty for homework assignments.
- ☐ Homework assignments submitted after the due date will receive zero points.

QUESTION 12:

Which of the following is the course policy for submitting quizzes?

- ☐ Quizzes turned in after the due date will receive a 25% penalty.
- ☐ There is no late penalty for quizzes.
- ☒ Quizzes submitted after the due date will receive zero points.

QUESTION 13:

Many HTML documents can reference the same CSS stylesheet. This best exemplifies which mechanism for enhancing productivity?

- ☐ Clarity via conciseness.
- ☒ Reuse.
- ☐ Automation and tools.
- ☐ Synthesis.

Show Answer

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