

First Quarter Exam

Data Structures and Algorithms by Larry David

Date: 2023-08-29

Identifier: ST001

1. Which programming language was created by Guido van Rossum? A. Java B. Python C. C++ D. Ruby E. Perl
2. C++ is an interpreted programming language. ☐ True ☐ False
3. Discuss the advantages of using version control systems in software development.
4. Write a Python function to find the square root of a number using the Newton-Raphson method.
5. Write a Python function to calculate the factorial of a non-negative integer without using recursion.
6. Polymorphism is a feature that allows a class to inherit attributes and behaviors from multiple other classes. ☐ True ☐ False
7. Which of the following are benefits of using a version control system? A. ☐ History tracking B. ☐ Collaboration C. ☐ Automatic bug fixes D. ☐ Code review E. ☐ Backup
8. Inheritance allows a subclass to inherit attributes and behaviors from multiple superclasses. ☐ True ☐ False
9. Which of the following are commonly used version control systems? A. ☐ Git B. ☐ Mercurial C. ☐ Subversion D. ☐ Perforce E. ☐ ClearCase
10. Explain the role of an operating system in a computer system.
11. What are the characteristics of a well-designed RESTful API?
12. What is the output of the following code?
13. Explain the concept of database normalization and its importance.
14. Which of the following are benefits of using a version control system? A. ☐ Tracking changes B. ☐ Managing code conflicts C. ☐ Automating unit tests D. ☐ Enhancing user experience E. ☐ Storing large binary files
15. Object-oriented programming supports encapsulation, inheritance, and polymorphism. ☐ True ☐ False
16. Which of the following are key aspects of agile software development? A. ☐ Heavy documentation B. ☐ Predictive planning C. ☐ Adaptive planning D. ☐ Rigidity E. ☐ Collaborative teams

