Computers & The Cloud Questions

1. A system is a \_\_ of \_\_\_\_\_ \_\_\_\_\_\_ together as \_\_\_\_ of an \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_. It’s a \_\_\_\_\_\_ \_\_\_\_\_.
2. What is abstraction?
3. How is abstraction linked to the concept of encapsulation?
4. What is the purpose of the command line?
5. What is the purpose of graphical user interfaces?
6. What is a protocol?
7. What is the need for protocols?
8. Protocols can \_\_\_\_ to form protocol \_\_\_\_
9. Name some protocols
10. What is XMPP?
11. What level of protocol is XMPP and why is it classed as this?
12. What is IP?
13. What level of protocol is IP and why is it classed as this?
14. What is the cloud software stack?
15. Why don’t software developers think in terms of hardware?
16. The principles of the von neumann architecture are: \_\_\_\_\_ are stored in \_\_\_\_\_\_ with d\_\_\_, \_\_\_ interfaces, \_\_\_\_, \_\_\_\_\_\_, \_\_\_\_\_\_ carry \_\_\_\_ around.
17. How does the CPU run programs in a computer?
18. What are compilers?
19. What is the operating system?
20. The OS runs in \_\_\_\_ mode.
21. What is \_\_\_\_ mode?
22. Other software runs in \_\_\_\_ mode.
23. Shell is a computer program that \_\_\_\_\_\_ an \_\_\_\_\_ \_\_\_\_\_\_ services to a \_\_\_\_ \_\_\_\_ or \_\_\_\_\_\_ of \_\_\_\_\_\_\_. It’s commonly a \_\_\_\_\_\_ \_\_\_ \_\_\_\_\_\_
24. What does POSIX stand for?
25. What is POSIX?
26. What is the benefit of POSIX?
27. System calls are \_\_\_\_\_ calls at the boundary between \_\_\_\_ mode and \_\_\_\_ \_\_\_\_. \_\_\_\_\_\_ programs make \_\_\_\_\_\_ calls, which \_\_\_\_\_\_ the \_\_\_\_\_\_ \_\_\_\_\_ and call its \_\_\_\_\_. POSIX \_\_\_\_\_ \_\_\_\_\_ calls, and some of the \_\_\_\_\_\_ c \_\_\_\_\_\_.
28. What are the benefits of the OS turning the CPU to a \_\_\_\_-\_\_\_\_ interface?
29. How does the OS turn memory to a high level interface?
30. What is a process?
31. What are the components of a process?
32. What is a thread?
33. What is the need for threads?
34. What are the pros and cons of threads and processes?
35. What is middleware?
36. A packet is a \_\_\_\_ \_\_\_\_ of \_\_\_\_\_\_\_\_ that is part of a \_\_\_\_\_\_ \_\_\_\_\_\_\_. It has a \_\_\_\_\_\_\_ \_\_\_\_\_ and \_\_\_\_\_/\_\_\_\_\_\_\_ a\_\_\_\_\_\_\_.
37. How are packets transmitted across a network?
38. What are the characteristics of packet switching?
39. What is the hop limit of a packet?
40. What is the OSI model?
41. What are the layers of the OSI model?
42. What happens on sending and receiving?
43. Internet protocol enables \_\_\_\_\_ between \_\_\_\_\_\_. \_\_\_\_\_\_ pa\_\_\_\_\_.
44. What are the 2 types of internet protocol?
45. What’s in a typical IP packet (header)?
46. What’s the difference between TCP and UDP?
47. What does port number do?
48. HTTP uses port \_\_. HTTPS uses port \_\_\_\_\_
49. Explain how the TCP three way handshake works
50. What is latency?
51. What is the formula for latency?
52. What is HTTP?
53. What is the need for VMs and containers?
54. What is a container?
55. How do containers work?
56. How do virtual machines work?
57. What are characteristics of VMMs?
58. What are the two types of hypervisor
59. What are the pros and cons of virtual machines and containers
60. Docker is a \_\_\_\_\_ \_\_\_\_\_\_
61. A dockerfile is a list of \_\_\_\_\_\_\_\_ on how to \_\_\_\_\_\_ an \_\_\_\_\_\_
62. What is cloud computing?
63. What are the 4 types of cloud service?
64. Explain how each type of cloud service works?
65. What are the 4 cloud deployment models?
66. What does GDPR stand for?
67. Who is the data subject of GDPR regulations?
68. Name some GDPR regulations
69. What does CIA stand for?
70. What are considerations of cloud computing?
71. A distributed system is a \_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ that are c\_\_\_\_\_\_ through a \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_. Users of a \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ perceive the \_\_\_\_\_\_\_ as a \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ facility.
72. What is middleware in terms of distributed systems?
73. What is the most common running environment for distributed systems?
74. How is the computer and network hardware configured in a distributed system?
75. How is the OS configured in a distributed system?
76. How is middleware configured in a distributed system?
77. What are the characteristics of a distributed system?
78. What are the challenges of distribution / distributed systems?
79. What are the 3 types of system architecture?
80. What is the 2 generals problem?
81. What 4 questions are used to analyse distributed systems?
82. What are the characteristics of the congest model?
83. What problems arise from the congest model?
84. How does the wave algorithm work?
85. What algorithm solves the single source shortest path problem and how does it work?
86. How does all pairs shortest path algorithm work?
87. What are the steps of a depth first search?
88. What are the 2 types of failure and what is the difference between them?
89. Why do we only assume one type of failure in distributed systems?
90. What are the principles of PAXOS?
91. What is the abstraction for long term data storage?
92. The file system is the component of the \_\_\_\_\_\_ \_\_\_\_\_\_ that manages \_\_\_\_\_. They provide an \_\_\_\_\_ \_\_\_\_\_ above \_\_\_ \_\_\_\_\_\_.
93. What is a file?
94. What are the components of a file?
95. Name ways file systems can be implemented
96. Distributed file systems like google file system allow the 6 common file operations but also what?
97. 2 types of file system consistency are what?
98. What is the structure of files on gfs?
99. The purpose of distributing computation is \_\_\_\_\_ and saved \_\_\_\_, but the \_\_\_\_\_\_\_ result must still be \_\_\_\_\_\_.
100. What are the conditions for parallelising programs?
101. Inter-iteration dependency means what?