FIT100 Review Questions

In general the answers to these questions can be found in the textbook and/or the lecture notes. The point of the questions is to encourage you to recall material treated in the class.

1. List the five fundamental operations on database tables.
2. Give a database schema (table declaration) for the following table instance

ID	Last	First	Hire	Addr
1	Davolino	Nancy	01 May 1992	507 20th Ave E
2	Fuller	Andrew	14 Aug 1992	908 W. Capital Way
3	Wooster	Berton	01 Apr 1993	722 Moss Bay Blvd
4	Peacock	Margaret	03 May 1993	4110 Old Redmond Rd
5	Buchanan	Steven	17 Oct 1994	13 Garrett Hill
6	Sullimani	Okan	12 Dec 1994	Coventry House

Example : Table

3. Every column of the DB in (2) is unique; does this mean any column can be the key? Explain
4. For the DB in (2) write a select command to pick out the row for Wooster.
5. For the DB in (2) write a project command for a 2 column table of last name and first day on the job.
6. When is it OK for two tables to be unioned together?
7. Is the condition of (6) also required for (a) difference? (b) product? and (c) join?
8. Suppose A has 4 columns and 70 rows, and B has 6 columns and 100 rows. How man columns and rows does A×B have?
9. Using the five fundamental operations write the join of A and B when fields A.name and B.team are to match. Use product, select and project rather than join.
10. What is "redundancy" in a database and why is it bad?
11. In the SLAMA DB there are addresses in the Suspects table and addresses in the Officer table. Since it is possible for a police officer to be arrested, is this an example of redundancy? Explain.
12. Explain the difference between the physical and logical databases.
13. What kind of relationship (e.g. 1-1) is the relationship of hometowns to people?
14. What kind of relationship is the relationship of eye color to FIT100 students?
15. Rewrite (4) in SQL.
16. Rewrite (5) in SQL.
17. List the tables in your SLAMA database and say which are physical tables and which are logical tables. [Remember, your forms use tables.]
18. In the SLAMA DB what was the purpose of the tracking number?
19. T/F: Virus protection software is useless because viruses are always new. Explain.
20. Using the "password guidelines" of Chapter 12, develop a good password; explain the steps you go through.
21. Give two rules of "netiquette" and explain why they are good rules to follow.
22. What is risky about opening email attachments you receive from unknown senders?
23. T/F: Even though all of the materials on the FIT100 web site are copyrighted, it is OK for you to have a personal copy of them. Explain.
24. What is "Fair Use" in copyright, and does it allow you to use copyrighted material as long as you don't try to sell it?
25. Define privacy. [This is a good definition to memorize.]
26. What are "Fair Information Practices?" (You don't have to list them.)
27. Explain what Opt-In/Opt-Out mean in the context of privacy.
28. What does it mean to say "clients and servers have only a brief relationship"?
29. What is a cookie and why is it needed?
30. Describe the Turing test.
31. When you infer a rule from a fable, are you abstracting or generalizing?

32. How does the placeholder technique work?
33. When trying out a new application for the first time, you should "click around" and "blaze away". What are these two activities, and why do them?
34. In the URL

    `http://www.cs.washington.edu/education/courses/100/04wi/index.htm`

    find the following components: domain, extension, file name, path, protocol, server name.
35. Show the HTML tags to link the words "Fluency Class" to the URL of (34).
36. Searching software such as Google is made up of what two basic parts?
37. What query would one write to find all of the pages on which Iraq appears, but no WMDs are found.
38. Give the six guidelines for debugging. [This is a good list to memorize.]
39. Compare the tags used to encode the OED with the tags used for HTML; how are they similar and how are they different?
40. Information technology associates certain physical phenomena with what logical phenomena?
41. Give five ways to encode information using silverware.
42. Joe decided to encode information using towels: a wet towel meant 1, a dry towel meant 0. Why was this a poor encoding?
43. What does "integrated" mean in electronics?
44. Give the five steps of the fetch/execute cycle in order.
45. The fetch/execute cycle is hardwired into what part of a computer?
46. A memory location can store how many bits?
47. What does the program counter (PC) of a computer do?
48. In addition to specifying the inputs and the outputs, what are the other three properties required of an algorithm?
49. What was the point of studying the Beta-sweep and the Alpha-sweep parts of Alphabetize CDs?
50. What is the decimal value of the binary number 1001 0111?
51. Convert 2004 into binary using the algorithm given in the book.
52. Add in binary the number from (50) to the number in (51).
53. What decimal number corresponds to the binary number: 1 0001 0000.
54. What is the binary representation of the decimal number 99?
55. Add together the binary numbers: 0010 1100 + 1010 0100
56. Write an If-statement to check if the variable `term` has the value `"book"` and the variable language has the value `"French"`, and if so change the value of term to `"livre"`.
57. Write a statement to declare the variables in (56).
58. Define radio buttons so a user can choose one of Larry, Moe or Curly. Record the choice in the variable `stooge`.
59. Write a function named `day()` that takes one parameter, `pick`, that has an integer value from 1 through 7, and using an if-statement returns the letter string for the day of the week. For example `day(1)` returns `'Monday'`.
60. Write a WFI that loops 10 times and uses `alert()` to count down from 10 to 1. After the loop, print out `'0 blast off'` using another `alert()`.
61. What does it mean, "bits are a universal medium"?
62. What does it mean, "bits are bias-free"?
63. Which takes longer to run, a program that runs "in time proportional to n" or a computation that runs "in time proportional to n^2"? What is "n" in this case?
64. Has a computer ever beaten a grand-master in chess?
65. Has a computer ever composed music?
66. Give the three steps for animating GIFs and explain what each does.
67. Explain the sentence, "Once a page is loaded, nothing happens until an event occurs."
68. In RGB representation when all of the intensities are the same, e.g. (128,128,128), what color is produced? What color is (0,0,128)?
69. What are two key advantages of digital encodings?

70. Give an example of "computing on a representation".
71. Use a Caesar Cipher to encode the phrase, "And you too Brutus"
72. Explain the sentence, "It's intelligent behavior, until it's known to be algorithmic."
73. For an HTML file called `page.html`, show the image tag to place a picture `photo.jpg` if the photo is in the directory "above" the directory containing `page.html`.
74. Give the HTML for a one row, three column table containing the information, Time, Life, Fortune.
75. Write an assignment statement to add one to a variable, but if doing so makes it greater than 9 it should be 0. That is, the variable should only be a one-digit number.
76. Show a declaration for an array with 3 elements, and assign each element an initial value of, in order, "alpha", "bravo", "charlie".
77. What is the name for the point where indexing begins?
78. Write a query to find Web pages containing at least two of the last three letters NATO alphabet (X-ray, Yankee, Zulu).
79. Write a function that has one parameter, a distance in miles, and computes that distance in yards, i.e. it multiplies by 5,280 and divides the result by 3.
80. "Normal Year". We will define a year to be a leap year if it is divisible by 4, but not divisible by 100. Write a function that takes a parameter, year, and returns yes/no depending on whether the year is a Normal Year.
81. Write an `if`-statement that assigns the Boolean variable `Octogenarian` the value "yes" if the variable `Age` is in the interval 80-89, and "no" otherwise.
82. Draw a diagram of the structure of a public key cryptosystem.
83. What is weird about this email. [Hint: See Chapter 12.]

```
From:  "Sue Marie Acker" <smacker@thermalmail.com>
Subject: Re: Topic of most recent mailing to this list
To:  Mondo_list

Remove me from this list, please.
```

84. How many samples per second does digital audio use?
85. Which word is more unusual, *algorithm* or *byte*?