NAME: Misty Baragar CS466-001

CHAPTER: 11

LAB: Lab 11 Ex 1

ANIMATED FLASHCARDS

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2. Binary file

3. Direct file access

4. Directory

5. Directory tree

6. Disk scheduling

7. File

8. File extension

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BOOK EXERCISES

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13. A

14. A

15. B

16. B

17. C

18. A

19. E

20. D

21. B

22. A

23. C

28. Text files: Files that contain text. Each byte is an ASCII character or

each 2 types is a Unicode character.

Binary files: The bytes in a binary file do not necessarily contain characters. These files require a special interpretation.

29. All files ultimately are just a collection of bits, so why call one file type

“binary?” In a binary file, the bits are not interpreted at text. A binary

file would just be a stream of uninterpreted bits unless there is an

interpretation provided. If a binary file is printed without interpretation, it looks like garbage.

30. A file type is a description of the information contained in the file. A

file extension is a part of the file name that follows a dot and identifies

the file type.

31. It depends on what application program you use to open the file. If

you use a program that expects an image file, you would get an error.

If you use a program that expects a text file, there would be no

problem.

34. Operating systems keep a table of currently open files. The open operation enters the file into this table and places the file pointer at the

beginning of the file. The close operation removes the file from the

table of open files.

35. Truncating a file means that all the information on the file is erased

but the administrative entries remain in the file tables. Occasionally,

the truncate operation removes the information from the file pointer

to the end.

36. Both sequential and direct file access find and access a record. In

sequential access, the file pointer begins at the beginning of the file and

can only move in one direction. Thus sequential access is linear: The

only record that can be accessed is the first or the one immediately

following the last one accessed. In direct access, the file pointer can be

moved to any specific record and the data accessed from that place.

37. a. How could you implement sequential access on a disk?

Sequential access always accesses the next record. You implement

sequential access on a disk by not giving the user an access

command that takes a record address as a parameter.

b. How could you implement direct access on a magnetic tape?

Each record on a magnetic tape is conceptually numbered from the

first to the last. Keep a counter of which record was read last.

When a user gives an access command to read a specific record, if

the record number is beyond the last record read, then records are

read and skipped until the correct record is found. If the record

number comes before the last record read, the tape is rewound and

records are read and skipped until the correct record is found.

38. A file protection mechanism is one that an operating system implements that ensures that only valid users can access a particular file.

39. Unix implements file protection by associating with each file a 3x3

table in which the rows are Owner, Group, and World, and the

columns are Read, Write/Delete, and Execute. The contents of each

cell in the table are boolean values meaning yes and no. For example,

a yes in the cell (Owner, Execute) means that the owner of the file can execute it. A no in the cell (World, Write/Delete) means that permission to write or delete a file is not granted to anyone that is not the owner of the file or within a specified group. (Group is a list of those

considered part of the group.)

40.

a. Who can read the file?

Anyone can read the file.

b. Who can write or delete the file?

The owner and members of the group can write or delete the file.

c. Who can execute the file?

Only the owner can execute the file.

d. What do you know about the content of the file?

Because the owner has permission to execute the file, it must

contain an executable program

41. A directory must contain the file name, the file type, the address on

disk where the file is stored, the current size of the file, and permission

information.

44. working directory

45. A path is a text string that specifies the location of a file or subdirectory.

46. An absolute path is a path that begins at the root directory and

includes all successive subdirectories. A relative path is a path that

begins at the current working directory and includes all successive subdirectories.

51. Transferring data to and from secondary memory is the worst bottleneck.

52. Seek time (the time to find the right cylinder) is more time consuming

than locating which track or which sector, so seek time is the time to

minimize.

53. First-come, first-serve (FCSC): The requests are handled in the order

in which they are generated.

Shortest-seek-time-first (SSTF): The request closest to the read/write

heads is handled next.

SCAN: The read/write heads move back and forth handling the

closest in the direction in which they are moving.