

Operating Systems (1401311-3)

HW #4

Due Date: Sunday, 24.1.1431 H

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1. Consider a file currently consisting of 15 blocks. Assume that the file control block is already in memory. Assume that the index block, in the case of indexed allocation, is not in the memory. Calculate how many disk I/O operations are required for contiguous, linked and Index allocation strategies, if, for three blocks, the following conditions hold. In the contiguous allocation case, assume that there is no room to grow in the beginning, but there is room to grow in the end. Assume that the block information to be added is stored in memory.

- a) The three blocks are added at the beginning.
  - Contiguous =
  - Linked =
  - Index =
  
- b) The three blocks are added at the end.
  - Contiguous =
  - Linked =
  - Index =
  
- c) The three blocks are removed from the beginning.
  - Contiguous =
  - Linked =
  - Index =
  
- d) Blocks number 10, 11 are removed.
  - Contiguous =
  - Linked =
  - Index =
  
- e) The three blocks are removed from the end.
  - Contiguous =
  - Linked =
  - Index =

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Ethics Policy: All assignments are individual and only individual work will be accepted. Detected copies of assignments (written or programming assignments) will result in zeros for the whole group (including the student who actually solved the problem). Remember that if you cheat, you are cheating no one but yourself.