New York University

CSCI-UA.0202-003: Operating Systems (Undergrad): Spring 2025

Quiz 7

- Write your full name on both:
  - the bubble sheet in the "Name" field
  - the quiz booklet
- Write your NYU NetID on the quiz booklet and the bubble sheet in the "ID" field
- Use a #2 pencil to fill in your answers on the bubble sheet
- This quiz contains 6 questions only. Each question has choices from A to D
- Fill the bubbles completely by darkening the entire circle, as shown in the example
- Only mark answers for questions 1-6. Do not mark any bubbles beyond question 6
- Choose only one answer per question
- Submit your bubble sheet together with your exam booklet

Name:

NetId:

1. What is a disk block?
   (a) The smallest addressable unit on a disk, typically 512 bytes
   (b) A physical component of the hard drive
   (c) A logical unit of storage allocation used by file systems, typically 4-16 KB
   (d) A container for storing multiple files

2. What is the "commit point" in a transaction?
   (a) When file data is first written to disk
   (b) When the transaction is first logged
   (c) The point after which there is no turning back
   (d) The point when a transaction is considered complete

3. What is the difference between hard links and soft links?
   (a) Hard links point to inodes, soft links contain the target file's path
   (b) Hard links are faster, soft links are slower
   (c) Hard links work across file systems, soft links don't
   (d) Hard links are only for directories, soft links are for regular files

4. What is the primary purpose of directories in a file system?
   (a) To store file content
   (b) To map human-readable names to file blocks on disk
   (c) To improve file system performance
   (d) To compress files

5. In a Copy-on-Write file system, what block is the only one ever modified in-place?
   (a) Root directory
   (b) Uberblock
   (c) Inode blocks
   (d) Data blocks

6. In a journaling file system, what is the **primary** purpose of a transaction?
   (a) To improve performance by grouping operations
   (b) To provide a mechanism for rolling back unwanted changes
   (c) To ensure file system operations are completed fully or not at all
   (d) To track which users made which changes