

Concept check

The following are conceptual questions meant to be answered in your design document. You won't need to write any code for these questions, but you may need to read and reference some.

- 1 There are 2 optional buffer cache features that you can implement: write-behind and read-ahead. A buffer cache with write-behind will periodically flush dirty blocks to the file system block device, so that if a power outage occurs, the system will not lose as much data. Without write-behind, a write-back cache only needs to write data to disk when (1) the data is dirty and gets evicted from the cache or (2) the system shuts down. A cache with read-ahead will predict which block the system will need next and fetch it in the background. A read-ahead cache can greatly improve the performance of sequential file reads and other easily-predictable file access patterns.

Please discuss a possible implementation strategy for each feature. **You must answer this question regardless of whether you actually decide to implement these features.**