

Midterm Written Answers

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Question 5

Distinguish between buffered and unbuffered I/O in Java with example programs. Explain the difference between the two.

Answer

Buffered

Buffered input streams read and write data from a memory area known as a buffer.

- Great for small data
- Great for lots of files
- More efficient

Example

BufferedInputStream/BufferedOutputStream

Unbuffered

This means each read or write request is handled directly by the underlying OS.

- Great for large files
- Great when you need files written in sequence
- Great when you can't afford a delay in writing

Unbuffered Streams

- FileInputStream/FileOutputStream*
- InputStreamReader/OutputStreamWriter
- FileReader/FileWriter*

Buffered Streams

- PrintStream
- PrintWriter
- BufferedInputStream/BufferedOutputStream*
- BufferedReader/BufferedWriter

** code answer in MidtermQuiz.java and Buffers.java

Question 18

What is the importance of finally block in exception handling? Explain with an example program.

A finally block is used at the end of the try statement. It runs regardless of whether the try errors out or is successful. This is useful for closing streams for files, among other things where a class or function relies on something external that may or may not exist etc.

```
buffersExample.bufferedCopy();
```

Contains a finally to close the streams

```
buffersExample.unbufferedCopy();
```

Doesn't contain a finally to close the streams

** code answer in MidtermQuiz.java and Buffers.java