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Preguntes Lab 1 Sistemes Operatius

1. Measure and compare the wall-clock time required to read and process the data for both binary and text files using the following buffer sizes: 16, 64, 128 and 1024 bytes. Create a table showing the results.

Time required to read and process the data:

Buffer size (bytes)	Text Files		Binary Files	
	small	big	small	big
16	0.350 total	0.142 total	0.020 total	0.012 total
64	0.005 total	0.062 total	0.006 total	0.007 total
128	0.007 total	0.040 total	0.005 total	0.007 total
1024	0.006 total	0.032 total	0.005 total	0.006 total

2. Compare the first 10 numbers in the text file and the binary file. Are they the same? You may use hexdump to inspect the binary file, or write your own program to do so.

Text:
16807
282475249
1622650073
984943658
1144108930
470211272
101027544
1457850878
1458777923
2007237709

Binary:
16807
282475249
1622650073
984943658
1144108930
470211272
101027544
1457850878
1458777923
2007237709

Com s'observa, els primers 10 números en el fitxer de text i en binari són els mateixos. La diferencia es que el el fitxer txt els números estan guardats en caràcters ASCII separats per comes i en binary estan guardats en binari, en format de enters de 32 bits. Encara que la representació sigui diferent, els valors numèrics son iguals.

3. What is the size of each file?
int_text_big.txt: 1048584
int_text_small.txt: 100
results.txt: 58
test_big.dat: 40000
test_small.dat: 400

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4. What happens if you read a binary file as text?
    It will likely fail because our text logic looks for a comma to know when a number ends and binary files are just bytes, without commas, so the buffer will fill up completely without processing any data. Also, the function atoi() expects ASCII digits, so bytes will result in a value 0.

5. What happens if you read a text file as binary?
    As our binary logic reads blocks of bytes, in a text file it will probably cause an interpretation mismatch. The program won't crush but the result will be an incorrect number because we would be performing mathematical calculations on characters instead of integer numbers.