Advance Operating System

Final Project

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# Detailed Analysis

The creates a 2GB text file and uses linear search to find a particular phrase. It uses multiprocessing to speed up the search by dividing the file into 4 blocks and searching each block in a separate process.

The code starts by including the necessary header files. It then defines a search function which takes the filename and the phrase to be searched as input. It opens the file and reads it in blocks of 4MB. For each block, it searches for the phrase and exits if it is found. If the phrase is not found, the code lseek()s to the next block and repeats the process.

Once all the child processes have terminated, the code measures the time taken for the search and prints the result.

The master process coordinates the slave processes by creating 4 processes, each of which searches for the phrase in a different block of the file. The master process waits for all the slave processes to terminate before measuring the time taken for the search and printing the result.