

Dev Task

Design and implement a simple Java program to find specific strings in a large text. The program should be composed of the following modules:

1. The main module - reads a large text file in parts (e.g. 1000 lines in each part) and sends each part (as string) to a matcher. After all matchers completed, it calls the aggregator to combine and print the results
2. The matcher - gets a text string as input and searches for matches of a given set of strings. The result is a map from a word to its location(s) in the text
3. The aggregator - aggregates the results from all the matchers and prints the results.

For this task, please use the text at <http://norvig.com/big.txt>, and the strings to find should be the 50 most common English first names:

James, John, Robert, Michael, William, David, Richard, Charles, Joseph, Thomas, Christopher, Daniel, Paul, Mark, Donald, George, Kenneth, Steven, Edward, Brian, Ronald, Anthony, Kevin, Jason, Matthew, Gary, Timothy, Jose, Larry, Jeffrey, Frank, Scott, Eric, Stephen, Andrew, Raymond, Gregory, Joshua, Jerry, Dennis, Walter, Patrick, Peter, Harold, Douglas, Henry, Carl, Arthur, Ryan, Roger

Example of one line from the program output based on the input above:

Timothy --> [[lineOffset=13000, charOffset=19775], [lineOffset=13000, charOffset=42023]]

There should be several concurrent matchers (i.e each matcher should run in a separate thread).

The results should be printed (in no particular order) after all text pieces have been processed.

Please provide a main method that executes a sample run.

You can make use of any written or web resource you find, incl. 3rd party libraries).

The code should work, and be as clean and efficient as you think necessary.