Why an assignment for job applicants?

We believe that the code you write will tell us more than any CV or covering letter could about yourself as a developer, and will tell us about how you think and how you learn. So as a shortlisted candidate we would like you to spend some time working on the following problem.

You should not spend too long on this exercise – we have allowed up to 5 days for you to complete it. You do not need to provide full data validation or handle all error conditions. We will test your solution with the same data files that are available to you – we won't try to catch you out that way. We are more interested in the data ingest and processing part of this system rather than the look and feel of the output that you provide. Bells and whistles are not required there.

We'd like you to write a small election scoreboard application, in any language you like, and with any sort of user interface - console, web or whatever you prefer. The specification is as follows:

An election scoreboard application

Your application will receive and process a series of XML files containing election results from a UK general election. A full set of 650 results is provided for you to use.

We suggest your application simply reads these files from a folder locally, one at a time, at the click of a key or based on a fixed time schedule. If you want to use a different method to get them into your application then please feel free to surprise us.

Your application should maintain a scoreboard of results, keeping tally of the number of seats won and share of the vote, for each party.

The scoreboard should only display totals for the top 3 parties by number of seats, with a fourth total for all other parties. The displayed totals should be sorted by number of seats, highest first, but 'others' should always be in last place.

As each file is processed, your application should update the scoreboard, and make it visible to the user.

When any party gets enough seats to win a majority in parliament, then the application should flag this up in some highly visible manner - changing colour, flashing or whatever you like and feel is appropriate to your design, while continuing to process files.

An initial set of system behaviours are also provided. Please provide a small number of further behaviours and include them with your solution.

You should send us your assignment as a zip file containing the source code, any tests or test artefacts and any supporting documents, including your set of behaviours. We would prefer to be able to compile and run your software but if we can't run it because you've used an obscure version of an obscure language for an obscure platform, we can at least read your code. If you do that though we'd expect to see a reasoned justification for your choice.

Behaviours

Given that the election has begun
When a new is delivered to the application
Then it should be detected, ingested and processed

Given that a new file has been detected
When that file is ingested
And the file is found to be invalid
Then it should be flagged as such
And it should be disregarded from future processing
And a system supervisor notified

Given that a new file has been detected
When that file is ingested
And the file is found to be valid
Then processing of the file content should continue

Given that the election is under way
When a file is ingested
And when the file has been validated
Then a scoreboard should be output
And the scoreboard should display the latest number of seats held by the top 3 parties
And the scoreboard should display the current vote share for the top 3 parties
And the scoreboard should display aggregate seats and vote share for the remaining parties