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**Java Developers Test**

Thank you for your interest in Brickendon and for taking the time to sit this test.

I hope the test will not only test your abilities but also give you a little glimpse into some of the tasks we carry out. Please do bear in mind that this is a simplified and somewhat abstract series of problems that you wouldn’t normally approach with the same restrictions imposed below.

You are welcome to use any resources that would be available to you during the course of a normal day: e.g. Google is permitted, as are textbooks, however use of existing code libraries you have developed anywhere else would not be allowed. You may include code taken from the internet including JARs that are freely downloadable and have no restrictions on usage. In other words, they must be licensed for commercial use without restriction. It is your responsibility to check and I will double check so please ensure you check the licensing carefully.

You should clearly identify and attribute sources within your code and tell me where I can download any required JARs and any steps I need to take to use them.

I would like you to time your work on each section of this and report back to me the time taken and any resources used. I will not penalise you based upon the time it has taken you to complete the task and would rather see an honest admittance that it took you longer than expected, with a valid reason explaining why, as opposed to hearing an unrealistic time.

I personally completed this test on my home PC in 45 minutes and referred to Google twice to find Java Docs for classes I used.

One final word of warning – at this client site, you will regularly gather your own requirements directly from a trader or receive vague details by email. Sometimes it is not possible to get a very detailed specification simply because the user doesn’t know or isn’t available. When this happens you have to use your initiative and work things out for yourself. This test has several ambiguities and vague definitions. It is up to you to make reasonable and valid assumptions.

And one final tip: KISS – Keep It Short and Simple. Don’t overcomplicate it, make it simple, efficient, easy to maintain and easy for the user to use.

**Introduction to the Problem**

A large part of the role is data gathering from websites. Although the BBC is not one of our sources this test will use the BBC News website to test your abilities. The BBC News website can be found at: http://www.bbc.co.uk/news/

I recommend you read all 3 parts of the test before starting development.

If you can’t complete any part in a reasonable time please explain why and detail your approach in the *Submission Details* document (see below).

**Part 1**

The frontpage of the BBC News website has a main headline with a brief summary underneath. The task is to write a class to extract the main headline, the summary text and the URL linking to the main article from the frontpage.

Write an additional class that is executable from the command line and uses your class to display the headline, summary and URL. Include an example of the command I need to enter at the command prompt in order to run your code.

**Part 2**

Enhance your original class to add functions that can count the number of times a given word or words appear on the frontpage of the BBC News site and extract the entire paragraph in which the word or words appear. For example, I may supply you with the single word “European” or a list including “Euro”, “European” and “Europe”. In the latter case a paragraph containing both “Euro” and “European” must only appear once in your output and a paragraph containing none of those words but including the word “Europa” would be ignored.

Enhance your executable class to demonstrate the above enhancements and allow me to specify the single word or list of words I wish to search for from the command line.

**Part 3**

Ensure your code is threadsafe so that I can create a multi-threaded application that could use your class to read the main headline details (Part 1) and find the words (Part 2) simultaneously using only one connection to the website.

Include comments explaining how you have ensured thread safety and any assumptions made.

**How to submit your work**

Upon completion please create a document containing all the following *Submission Details* information and enclose this in a zip file along with the Java source files (do not include compiledfiles) that you have created.

**Submission Details**

This document will help me understand how you approached the problems. Please be honest with your responses. Honest answers will not count against you, however the opposite will be obvious upon closer inspection and will discredit your efforts.

In the *Submission Details* document include the following information:

Your name

For each Part of the test above include:

Time taken

Resources used

Any problems encountered

Any other information

**Many thanks for taking the time to complete the test.**