**Important Notes:**

1. Please read the assignment instructions carefully and complete your answers thoroughly.
2. We expect that the assignment should not take more than four hours to complete. We do understand that this time may be a slight inconvenience, however, we place a good degree of emphasis on this assignment during the recruiting process.
3. The assignment consists of a core problem statement and we expect your response to be thorough and accurate in the way you solve the problem and your results.
4. We also place a great deal of emphasis on the structure / architecture of your solution and encourage you to give sufficient thought to this aspect.
5. We also encourage you to give some thought to the presentation layer of your solution and feel that it is an opportunity to showcase your overall solution.
6. Flexibility and adaptability of your solution will also be assessed.
7. The use and adherence of conventions and standards will be assessed too.

**Technical Assessment**

*Complete your details below:*

| **Name** | Maxwell Phiri |
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| **Email Address** | makiep@gmail.com |
| **Role** | Senior Software Engineer |
| **Mobile Number** | 078 866 7473 |
| **Date** | 2021/07/07 |

General Questions

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| --- |
| *Describe what you enjoy about programming? Give examples:*  Programming is like an art, where you create something from nothing. It is a discipline that brings together some of the best skills such as creativity, analytics, logical thinking in solving a problem and among other things improve users’ experience.  Your Curata solution for instance solves is a creative solution that solves problems with fraud while providing an easy and secure way for user authentication. |
| *Describe the process you follow when writing code from requirements to delivery:*   * Ensure that I understand the requirements and be aligned with the product owner. * Breakdown requirements into small pieces of work with clearly defined inputs and outputs. * Identify which part of the project needs to be changed. Create a working branch. * Follow the correct coding style defined by the team. Preferably, TDD. * Follow the coding style adding more functionality in an iterative process. * Deploy to branch with each iteration. * Test the full set of requirements and add more tests if needed. * Create a pull request and have colleagues feedback on the change * Release to testing environment. |
| *Describe why you believe you are the best candidate for the role at Comcorp? Also list the particular skills and attributes that you believe make you the best candidate:*  I have the experience, qualities and qualifications needed to deliver quality solutions as part of a team or as an individual to meet business requirements.   * Experienced and Certified in C# and Microsoft stack * Have good problem solving and analytical skills. * Committed and hard working * Experienced in delivering solutions within timeline. * Willing to learn and improve. * Experienced in Leading teams. |

Assignment:

Build an application to read the novel “War and Peace” written by Leo Tolstoy and produce a ranking of the count of the number of times each word is used in the entire book.

1. Sort the list in descending order of word count and supply the top 50 words by count;
2. Supply the top 50 words by count where the word length is longer than 6 characters;
3. The application should record and display the duration it takes to execute.
4. Structure your solution to be as generic as possible and describe what aspects make it generic and flexible;
5. Build your application in C#;
6. Comment on how the application could be improved, and possibly made more efficient;

* Add caching to avoid reading the source file on every request.
* Add error logging and appropriate handling.
* More unit tests.
* Add options to return counts per Book or Chapter.
* Add option to remove Stop Words and symbols
* Add UI
* Make Split settings more generic and allow users to upload different files.
* Add option to search for specific words.

1. Comment on what testing could be done to validate the accuracy of your solution;

* Use tools like Word or www.countwordsfree.com to compare solution’s output.
* Use file with fewer paragraphs to compare.
* Run unit tests.

1. Comment on how you would improve the performance (speed) of the application?

* Add caching.

1. Describe how the application could be turned into a cloud-based service;

Platform as a Service is good approach for this solution.

* Add authentication to secure the application.
* Add production app settings.
* Create App Service Resource in Azure (Use ARM template)
* Publish the application targeting the created App Service.

1. Supply all your source code, together with your written responses to the above.

NOTES:

1. A copy of “War and Peace” may be freely downloaded here: <http://www.gutenberg.org/ebooks/2600> and <http://www.gutenberg.org/files/2600/>