Vending Machine Test – C# Developer

Thank you for your application. The exercise below forms part of Ars Ingenii recruitment and selection process for this vacancy.

The Task:

For this problem the candidate should consider the design of a solution and provide code that represents a 'first draft' or 'prototype' solution. Consideration should be made as to a suitable level of generality as well as considering other factors such as (but not necessarily limited to):

• Performance

• Flexibility

• Maintainability

• Error conditions

Where the problem is unclear the candidate should make any assumptions that they think appropriate. Along with the code the candidate should provide documentation (which can simply consist of comments in the code) to assist the developer reviewing to understand the solution, and any assumptions or limitations. When evaluating the solution the following factors (amongst others and in no particular order) will be taken into account:

• Correctness and efficiency of algorithms

• Class and method structure

• Data modelling

• Appropriateness of data types and structures used

• Clarity and maintainability of code

• Trade-off between quality and quantity of code delivered

• Appropriateness of assumptions

• Flexibility of design There is no time-limit but it is not expected that the task should take more than a couple of hours.

Exercise

A vending machine sells items for various prices and can give change. At the start of the day it is loaded with a certain number of coins of various denominations e.g. 100 x 1ct, 50 x 5ct, 50 x 10ct etc. When an item is requested a certain number of coins are provided. Write code that models the vending machine and calculates the change to be given when an item is purchased (e.g. 2 x 20ct used to purchase an item costing 25ct might return 1 x 10ct and 1 x 5ct).

Please send your solution without any executables or binaries to priemimas@arsingenii.lt.