Thanks for your interest in **compare**the**market**.com.  I have sent you two options – we only need you to complete **ONE** test.  Please look at them both and decide which option to choose.

I would ask if you can keep the details of this test confidential and if you have any questions please do get in touch. When you have completed the test please send it back to me and I will forward it on to colleagues.

**Technical Test**

**Option One**

The test is as follows:

Given a book in a text file (<http://www.loyalbooks.com/download/text/Railway-Children-by-E-Nesbit.txt> for example)

1.                   Write an application that outputs the individual words that appear in the book, and how many times that word appears in the text file.

2.                   The second part is to also output whether the number of times each word appears is a prime number.

The following assumptions can be made:

-          Ignore punctuation and capitalisation

**Option Two**

BOWLING

Write a program to score a game of Ten-Pin Bowling.

Input: string (described below) representing a bowling game

Ouput: integer score

The scoring rules:

Each game, or "line" of bowling, includes ten turns, or "frames" for the bowler.

In each frame, the bowler gets up to two tries to knock down all ten pins.

If the first ball in a frame knocks down all ten pins, this is called a "strike". The frame is over. The score

for the frame is ten plus the total of the pins knocked down in the next two balls.

If the second ball in a frame knocks down all ten pins, this is called a "spare". The frame is over. The score

for the frame is ten plus the number of pins knocked down in the next ball.

If, after both balls, there is still at least one of the ten pins standing the score for that frame is simply the total number of pins knocked down in those two balls.

If you get a spare in the last (10th) frame you get one more bonus ball. If you get a strike in the last (10th)

frame you get two more bonus balls.

These bonus throws are taken as part of the same turn. If a bonus ball knocks down all the pins, the process

does not repeat. The bonus balls are only used to calculate the score of the final frame.

The game score is the total of all frame scores.

Examples:

X indicates a strike

/ indicates a spare

- indicates a miss

| indicates a frame boundary

The characters after the || indicate bonus balls

X|X|X|X|X|X|X|X|X|X||XX

Ten strikes on the first ball of all ten frames.

Two bonus balls, both strikes.

Score for each frame == 10 + score for next two

balls == 10 + 10 + 10 == 30

Total score == 10 frames x 30 == 300

9-|9-|9-|9-|9-|9-|9-|9-|9-|9-||

Nine pins hit on the first ball of all ten frames.

Second ball of each frame misses last remaining pin.

No bonus balls.

Score for each frame == 9

Total score == 10 frames x 9 == 90

5/|5/|5/|5/|5/|5/|5/|5/|5/|5/||5

Five pins on the first ball of all ten frames.

Second ball of each frame hits all five remaining

pins, a spare.

One bonus ball, hits five pins.

Score for each frame == 10 + score for next one

ball == 10 + 5 == 15

Total score == 10 frames x 15 == 150

X|7/|9-|X|-8|8/|-6|X|X|X||81

Total score == 167

It would be beneficial to:

-          come up with more than one solution and be able to talk about the pro’s and con’s to each

-          ensure the application scales and performs optimally

-          Use TDD in the approach to writing the application

-          Thought to performance, TDD and OO would be of benefit