## Data Structure and Complexity 1.What is the expected running time of the following C# code? Explain why. Assume the array's size is n.

The expected running time of the following C# code is Ѳ(). Assume that the current array has n elements. Then for each element will execute n-times the while loop because he always starts and ends from the same position – starting from 0 and finish to arr.Length – 1, which is exactly the size of the array n.

## 2. What is the expected running time of the following C# code? Explain why. Assume the input matrix has size of n \* m.

The first for loop for rows will execute n-times. The if statement for even rows will execute n/2 times. The for loop for cols will execute just (n \* m) / 2 times. We ignore the constants and the average case is Ѳ(n\*m).

## 3.\* What is the expected running time of the following C# code? Explain why. Assume the input matrix has size of n \* m.

If we replace the if-statement in the first loop with another for loop that interate through each of the cols, we will receive quadratic average-case complexity which Ѳ(n \* m).

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