Assignment 1: Introduction to Systems Programming

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1 Mathematical Analysis

2 Theoretical Correctness

3 Testing

4 Experimental Analysis

5 Extrapolation and Interpretation

6 Code

6.1 Algorthm 1

```
/*
 * Enumeration
 * Loop over each pair of indices i; j and compute the sum from k=i to j of a[k].
 * Keep the best sum you have found so far.
 */
```

6.2 Algorthm 2

```
/*
 * Better Enumeration
 * Notice that in the previous algorithm, the same sum is computed many times.
 * In particular, notice that sum from k=i to j of a[k] can be computed from sum f
 * Write a new version of the frst algorithm that takes advantage of this observat
 */
```

6.3 Algorthm 3

```
/*
 * Divide and Conquer
 * If we split the array into two halves, we know that the maximum subarray will
 *      * contained entirely in the frst half,
```

```
*       * contained entirely in the second half, or
*       * made of a suffix of the frst half of maximum sum and a prefix of the sec
* The frst two cases can be found recursively. The last case can be found in line
*/
```