CS182 – Foundations of Computer Science

PSO sessions 1 and 2, week of February 17, 2020

PSO 1

Problem 1. Compute the sum $\sum_{j=1}^{9} \sum_{i=1}^{n} ij$.

Problem 2. Compute the sum $\sum_{i=1}^{20}((-2)^i - 2^i)$.

Problem 3. Rewrite $\sum_{i=-3}^{100}(i^2+1)$ so that the index of summation has lower limit zero and upper limit 103. Compute the sum.

Task 1. Use any remaining time as office hours.

PSO 2

Problem 1. Describe an algorithm that takes a list of n integers ($n \geq 1$) and finds the location of the last even integer in the list, and returns zero if there are no even integers in the list.

Problem 2. Describe an algorithm that takes a list of n integers ($n \geq 1$) and finds the average of the largest and smallest integers in the list.

Problem 3. Express a brute-force algorithm that finds the largest product of two numbers in a list $a_1, a_2, \ldots, a_n$, with $n \geq 2$.

Task 1. Use any remaining time as office hours.