Lab 5 continued:

As you may have realized, there are three possible situations:

1. The days that give the maximum profit are both in the first half of the list
2. The days that give the maximum profit are both in the second half of the list
3. The day to buy is in the first half of the list and the day to sell is in the second half of the list. In this case, the day to buy must be the day with the lowest price in the first half of the list, and the day to sell must be the day with the highest price in the second half of the list

Thus the heart of the algorithm looks something like this:

let LS be the optimal solution in the first half of the list
let RS be the optimal solution in the second half of the list
let CS be the optimal solution with the buy day in the first half and the sell day in the second half
select whichever of {LS, RS, CS} gives the maximum profit

As usual a data file is provided in which the first line contains an integer identifying the number of test cases. The subsequent lines occur in pairs. The first line of each pair contains an integer determining the number of days of data for the next stock. The second line of each pair contains the sequence of integers giving the daily prices of the stock.

Go forth and implement!