Homework
Week 3

Bogazici Airbenders UAV Team

Problem 1. As an employee of a company, your CEO comes to you and asks you to pick the second most expensive product from a given list of product prices. You decide to automate this process by writing a function in C++. Write a function that takes an array of numbers (integers or not.) and returns the second largest element. If all are equal return one.

Include: Use templates to cover integers and floats.

Problem 2. Write a program that asks for rows and columns and creates two matrices (a vector consisting of integer vectors). The program should then prompt the user to enter values for coordinates consecutively for both matrices as follows,

Enter value for $(1, 1)$: $\cdots$

Enter value for $(1, 2)$: $\cdots$

$\cdots$

for all coordinates on the matrix, you may want to write a function to read values for coordinates on the matrix as well. Write functions to add and subtract matrices and write a function to print the matrix.

Matrices are just 2-D vectors, essentially vectors of vectors. Matrix addition and subtraction is just pairwise element adding and subtracting.

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} + \begin{pmatrix} 1 & 0 \\ 0 & 5 \end{pmatrix} = \begin{pmatrix} 2 & 2 \\ 3 & 9 \end{pmatrix}$$

similar for subtraction.