

LAB 1: Coding exercise

A (Entry)

1. Create the vector $x = [1 \ 3 \ 5 \ 7 \ 9 \ 11 \ 13 \ 15 \ 17 \ 19]$.
2. Calculate the vector $y = \sin(x)$.
3. Sort the vector y in descending order.
4. Apply the same sorting to vector x .
5. Reverse the order of entries in vector y .
6. ... and plot x vs. y .

B (logical and linear indexing)

1. Create two row vectors:
 $A = [1 \ 4 \ 6 \ 3 \ 7 \ 8 \ 10 \ 1]$
 $B = [1 \ 1 \ 2 \ 10 \ 9 \ 4 \ 5 \ 6 \ 2 \ 5]$
2. Find elements in A that also occur in B .
3. Extract elements in B using A as linear index.
4. Extract elements in B that do not occur in A .
5. Extract every second element in B and every third element in A and concatenate them in a new column vector C .

C (matrix manipulation)

1. Create a 5×10 matrix with random values uniformly distributed between 0 and 1
2. Filter the matrix with a 3×3 running average
3. Transpose the matrix and
4. reshape it to a matrix with 25 rows.