

ME1 Computing- Session 2: Lists, Introduction to Loops and Maths and Plotting functions

Learning outcomes:

- Being familiar with the concept of list
- Being able to operate and manage lists
- Understand the basic concepts of loop by traversing a list

Please provide feedback at: www.menti.com with code 44 88 7

Before you start

In your H drive create a folder `H:\ME1MCP\Session2` and work within it.

Task A: Creating Lists

1. Create manually two arrays *A* and *B*, with integer values from 10 to 20 and from 20 to 30, respectively.
2. Sum up the third and the fourth element of *A* and assign it to the fifth element of *B*. Double the sixth element of *B*.
3. Swap the first and the last elements of *A*.
4. Set the two variables *i* and *j* to 3 and 5, respectively. Swap the *i*-index element of *B* with the *j*-index element of *A*.

Answer Question 1

Task B: Generating lists

1. Generate a list *A* of $N = 100$ elements, containing the integer numbers from 1 to 100.
2. Create a second list *B* that contains the squared values of the elements of *A*.
3. Sum up the two lists together into a new list *C*.

A	1	2	3	4	5	6	7	- - -	99	100
B	1	4	9	16	25	36	49	- - -	9801	10000
C	2	6	12	20	30	42	56	- - -	9900	10100

Answer Question 2

Task C: Managing lists

1. Starting from list A in Task B, set to zero the values in every third element.

A

1	2	3	4	5	6	7
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99	0
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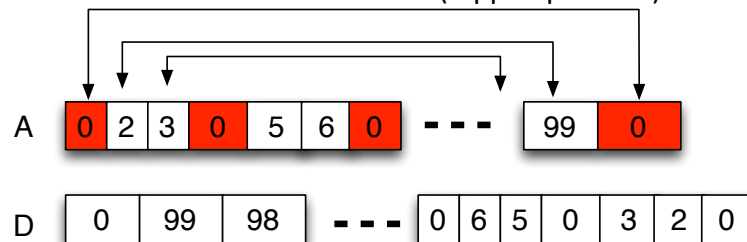
A

0	2	3	0	5	6	0
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99	0
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2. Then create a new list D that is the reverse (flipped position) of list A.



Answer Question 3

Task D: Maths and plotting functions

1. Set a list x with integer values from 1 to 100 in steps of 5.
2. Compute $y = \log_{10}(x)$.
3. Plot y vs x.

Answer Question 4