University of Nottingham
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Session 1 Recap

CELEN087

Please check your learning outcomes by working on Lab Worksheet 1 and Homework Exercise Sheet 1.

Learning outcomes:

1. Know the correct syntax of built-in functions for basic computations in MATLAB.
2. Perform the following matrix operations:
   - Matrix product
   - Transposed matrix
   - Determinant
   - Inverse matrix
3. Use the index/indices to pick one/multiple elements from a given vector/matrix.
4. Use the built-in functions for creating special vectors/matrices.
5. Create evenly-spaced vectors.
6. Perform three element-wise operations in arrays.
7. Solve the following vector/matrix application problems:
   - Find roots or product of polynomial functions by using vectors
   - Find solutions of a system of linear equations by using the matrix method

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Open questions (AI tools are allowed/recommended in your learning process):

1. How to generate arrays with integer elements selected from a given interval a to b?

   For example, create a list of 10 integers that are random selected from 15 to 20, representing ages of participants in a survey.
2. What can MATLAB do in your own major?
3. What are the features of MATLAB compared to other programming languages?

The following key words will be used frequently in our teaching. Knowing the meaning of each will help your learning in MATLAB.

Vocabularies:

- built-in function
- random number
- element-wise operation
- pre-defined/reserved variables
- array index
- system of linear equations
- suppress the output
- evenly-spaced vector
- MATLAB documentation