Home task 4: Dynamics

Task:

- Derive dynamic model for your robot model using the Euler-Lagrange approach.

$$M(q)\,\ddot{q} + C(q, \dot{q})\,\dot{q} + g(q) = \tau$$

You can use the symbolic toolbox in Matlab or Symby in python but it is not obligatory

- Implement this in code calculating matrices $M(q)$, $C(q, \dot{q})$, $g(q)$

References:

You can find useful information about matrix approach in chapter 7 about dynamics in "1) B. Siciliano, L. Sciavicco, L. Villani, G.Oriolo, "Robotics: Modelling, Planning and Control", 3rd Edition, Springer, 2009".

Submission:

- A report containing your full derivation of the dynamic model
- Code implementation for calculating $M(q)$, $C(q, \dot{q})$, $g(q)$

Bonus:

- Write your report using Latex or in Colab using the text markdown
- For latex, you can use Overleaf.
- If it is your first time, these links will be helpful:
  - Cheatsheet for math symbols
  - Matrix format