KAIST ME553 Robot Dynamics

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Exercise 4

Download the latest code here: https://github.com/jhwangbo/ME553_2022. If you already have the project, simply pull the changes (using git).

The goal of this Exercise is to derive the equation of the motion (EOM) of a cart-pole system and use it to simulate the system. You can find the system description in "resource/cartPole/cartpole.urdf". **You should use the Euler-Lagrange equation for this exercise. Follow the steps similar to the double pendulum example in the lecture. Write down the expression for the potential and kinetic energy of the system then use the Euler-Lagrange equation. No other methods are allowed**.

Deliverable:

1. **A scanned copy of a hand-written derivation of the EOM**
2. A single header file named "exercise4_STUDENTID.hpp" which outputs the generalized acceleration of the system (written based on your EOM). Use the provided template. You should replace "STUDENTID" with your real student id number. Submit it on KLMS.

Deadline: 5pm, 30th of April