Zachary Weiss

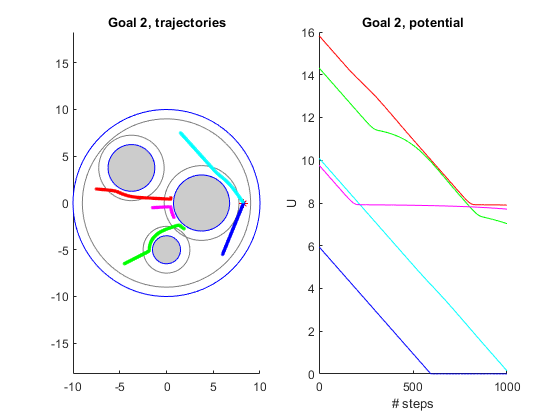
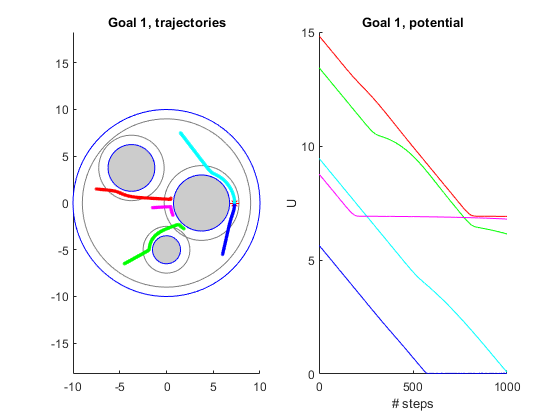
ME570 HW3

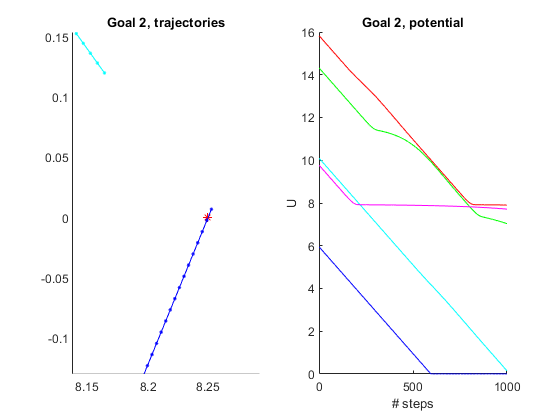
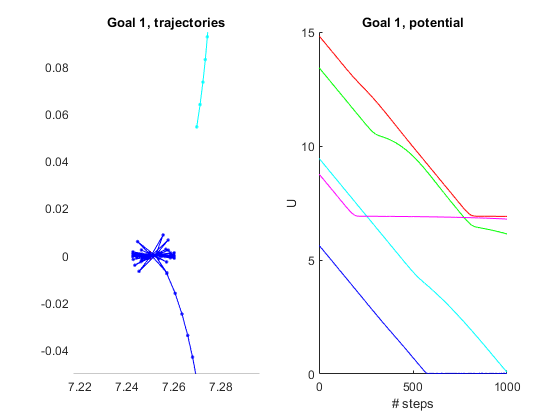
Professor Tron

29 October 2020

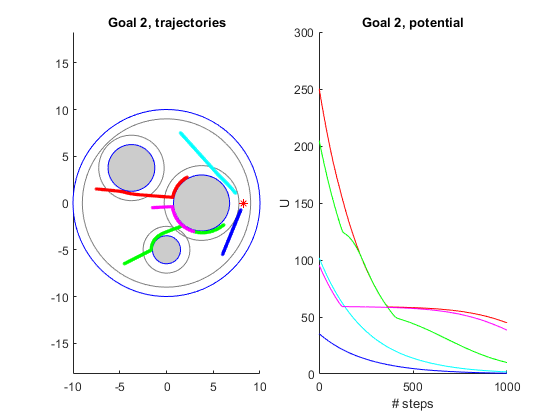
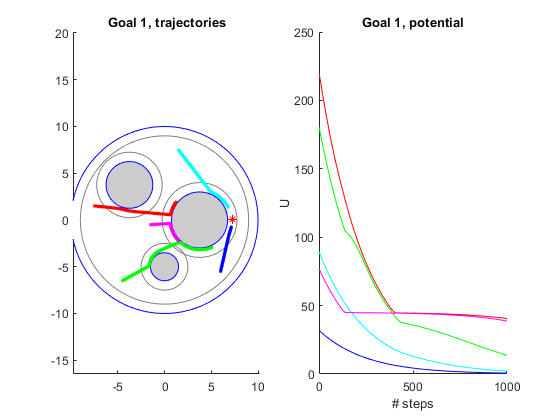
*Q2.1*:

With a conic shape, an epsilon of 1e-2, and a repulsive weight of 5e-2, we get the following results:





Similarly, for a quadratic shape, epsilon of 1e-3, and a repulsive weight of 5e-2, we get:



*Q2.2*:

*Q2.3*:

*Q2.4*:

*Q2.5*:

*Q3.1*:

*Q3.2*:

*Q3.3*:

*Q3.4*:

*Q4.1*:

We know from HW2, Q6.1 that

As such, to find J such that , we simply must factor out the vector, yielding the 2-by-2 matrix:

*Q4.2*:

*Q5.1*: