RBE 500 - HW 8

Implement Bayes filter (available in the lecture slides and the probabilistic robotics book script that is provided in Canvas as additional resource) to iteratively calculate the belief regarding the door state in the problem explained in Slides 30-41. Assume you do not have any prior information about the state of the door. Test your code with the following consecutive action-measurement pairs. Submit your code together with a short report presenting your test results.

IMPORTANT: Calculate the effect of these iterations in a 'while' or 'for' loop. First, write a general implementation of the Bayes Filter that would work for any [action, measurement] pair of this problem. Then place this function in a 'for' or 'while' loop, which will utilize a given array of action and measurement pairs. So, your code should work for any series of [action,measurement] pairs, NOT only for iterations below.

IMPORTANT: This is an individual assignment, NOT a group assignment. Therefore, collaboration with other students while implementing the solution is prohibited. Of course, the TAs and I are here to help in the office hours as always.

Iteration 1:

action: do_nothing, measurement: closed

Iteration 2:

Action: open, measurement: closed

Iteration 3:

Action: do_nothing, measurement: closed

Iteration 4:

Action: open, measurement: open

Iteration 5:

Action: do_nothing, measurement: open