

# p4_tracking_q5_approximate_inference_time_elapse

## Question 5 (4 points): Approximate Inference with Time Elapse

Implement the `elapseTime` function for the `ParticleFilter` class in `inference.py`. When complete, you should be able to track ghosts nearly as effectively as with exact inference.

Note that in this question, we will test both the `elapseTime` function in isolation, as well as the full implementation of the particle filter combining `elapseTime` and `observe`.

To run the autograder for this question and visualize the output:

```
python autograder.py -q q5
```

For the tests in this question we will sometimes use a ghost with random movements and other times we will use the GoSouthGhost. This ghost tends to move south so over time, and without any observations, Pacman's belief distribution should begin to focus around the bottom of the board. To see which ghost is used for each test case you can look in the .test files. As an example, you can run

```
python autograder.py -t test_cases/q5/2-ParticleElapse
```

and observe that the distribution becomes concentrated at the bottom of the board.