

Implement a function `infer_states()` that takes arguments:

1. `obs` - the observations [list of ints]
2. `pi` - the initial state probabilities [list of floats]
3. `A` - the state transition probability matrix [2D numpy array]
4. `B` - the observation probability matrix [2D numpy array]

and returns:

1. `states` - the inferred state sequence
2. `p_star` - the probability of this state sequence given the observations

Following the approach described by Rabiner, this can be done in ≤ 13 lines of Python/numpy.

Put your function in a file titled `hw08_solution.py`.

Run `hw08_evaluate.py`, making sure that your solution file is on the Python path. If you're unsure whether the result is satisfactory, ask the instructor or TA.