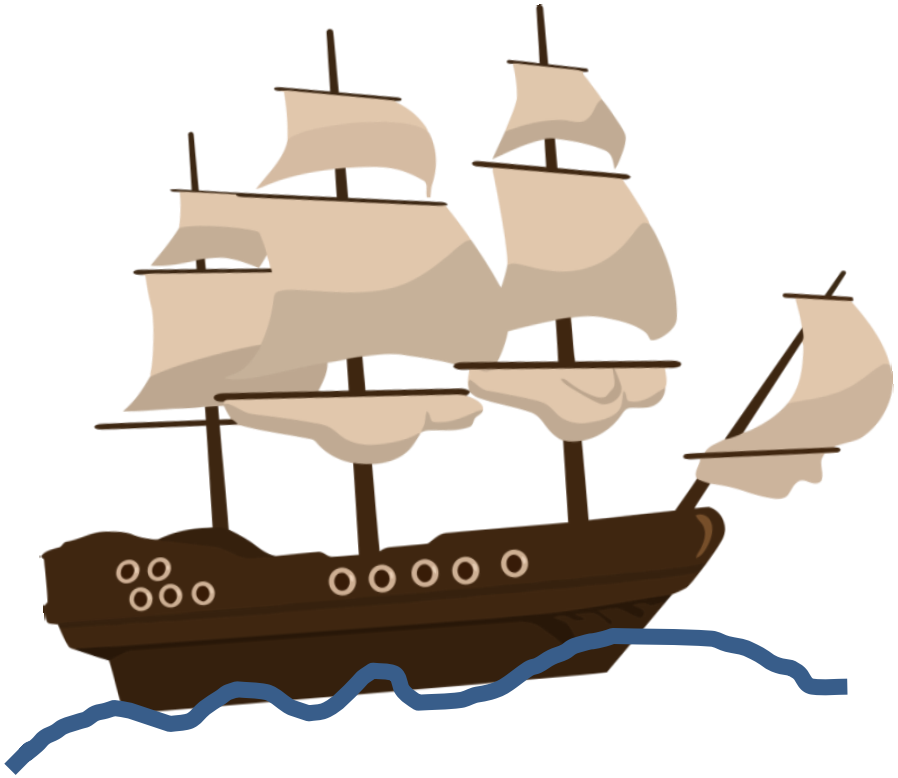
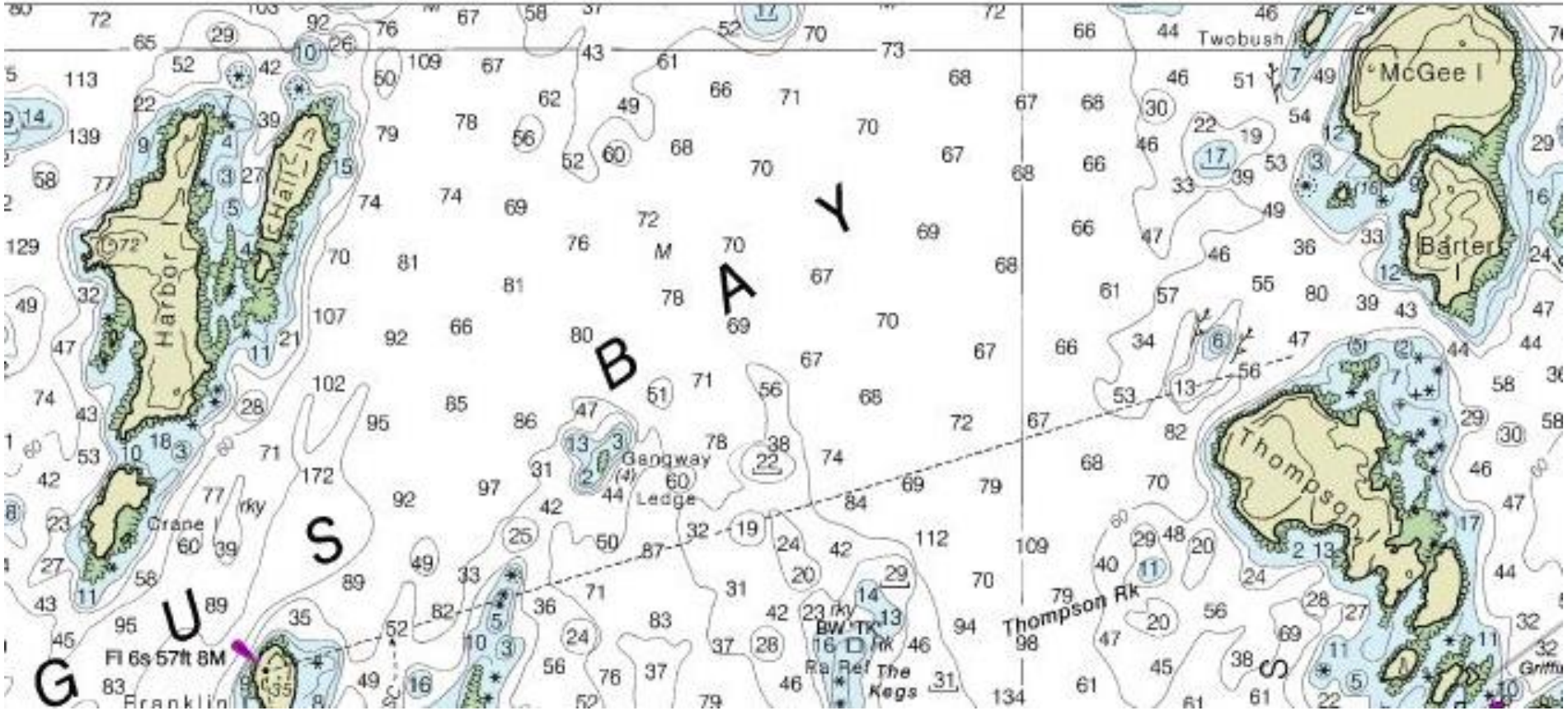
Be a pAIrate!

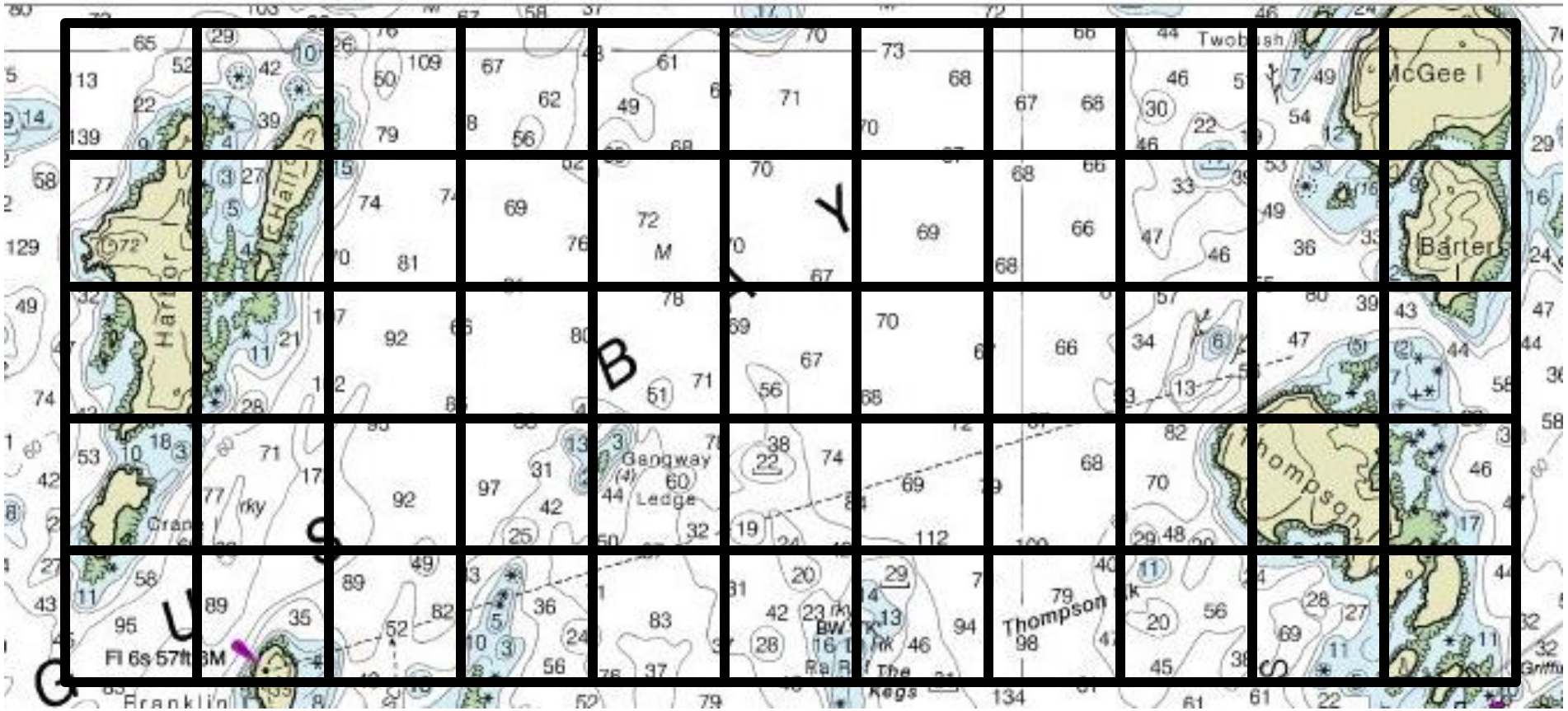


Nautical Charts



- Shallow Depth is dangerous
- Some areas are good, some are bad, etc

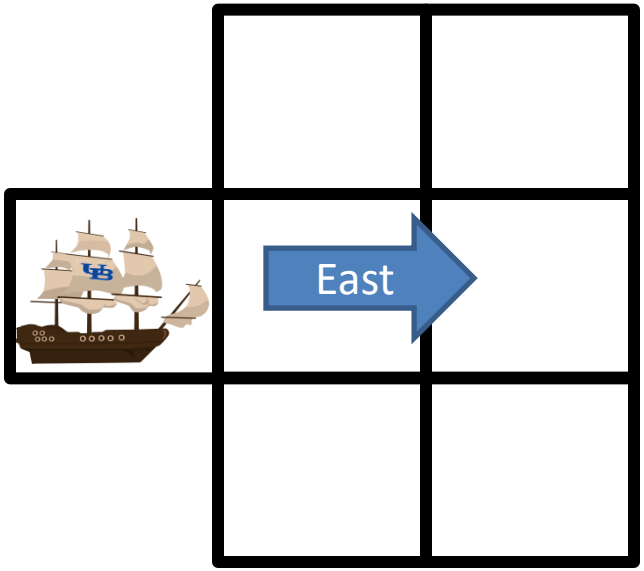
Nautical Charts

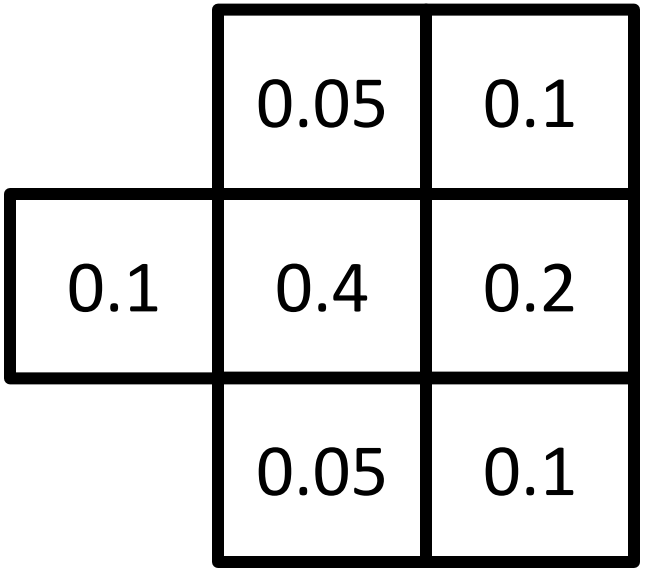


- Shallow Depth is dangerous
- Some areas are good, some are bad, etc

What you can do

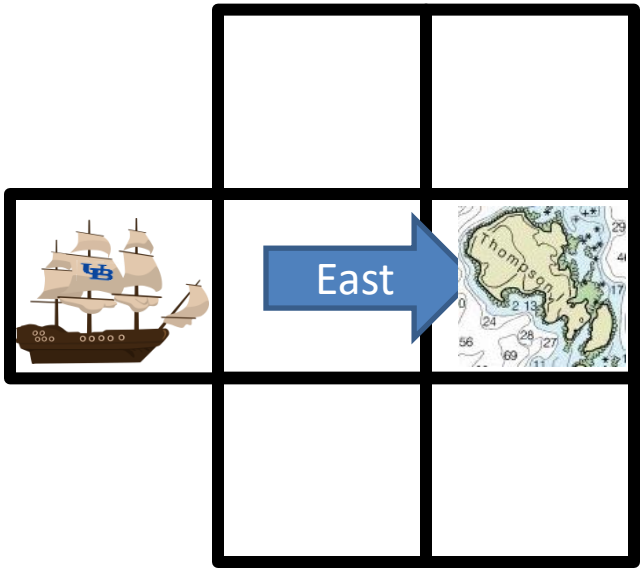
- ACTIONS = (‘N’,’E’,’S’,’W’,’A’)
  - Sail: North, East, South, West
  - Anchor
  - And action is an element from the ACTIONS list

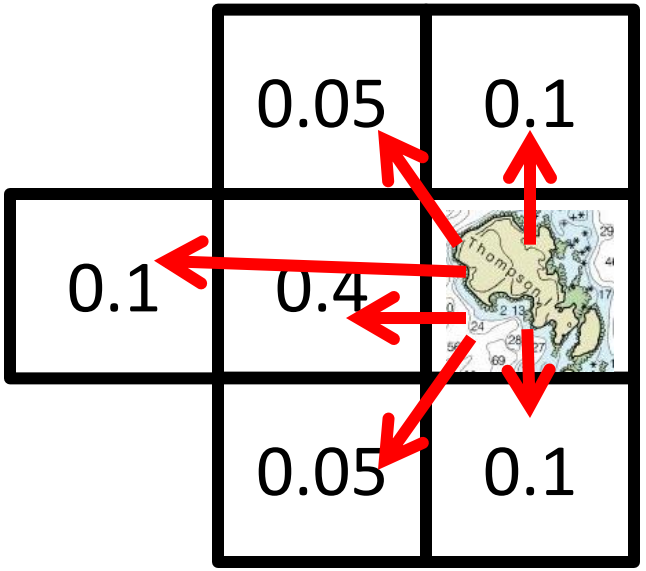




What you can do

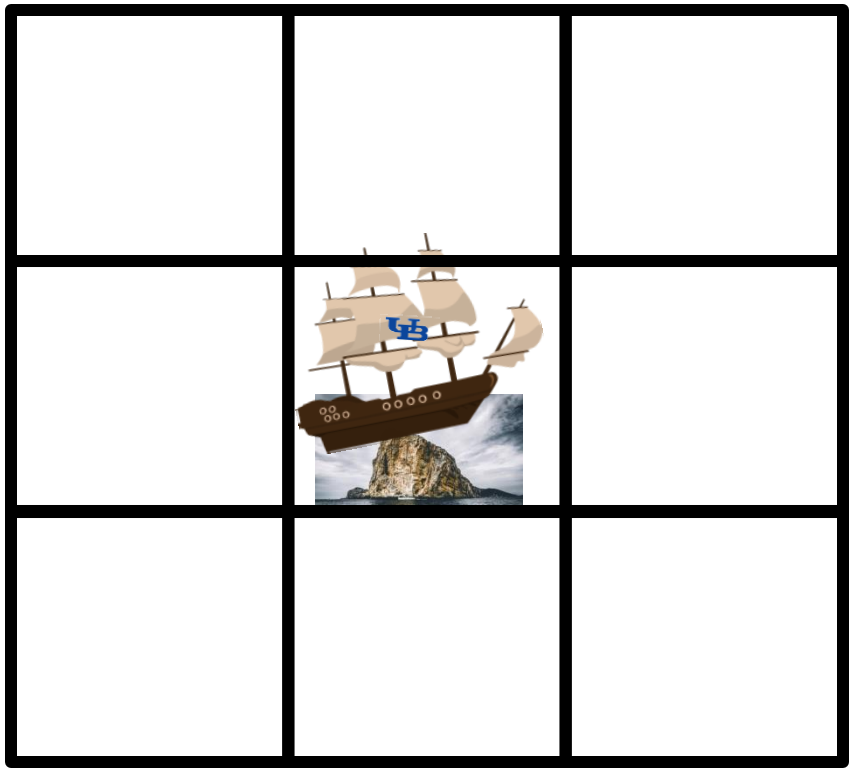
- ACTIONS = (‘N’,’E’,’S’,’W’,’A’)
  - Sail: North, East, South, West
  - Anchor
  - If place is land, redistribute to other locations proportionally, (zero out land and normalize)





What you can do

- States that put the ship on land, means that it can’t move no matter the action.

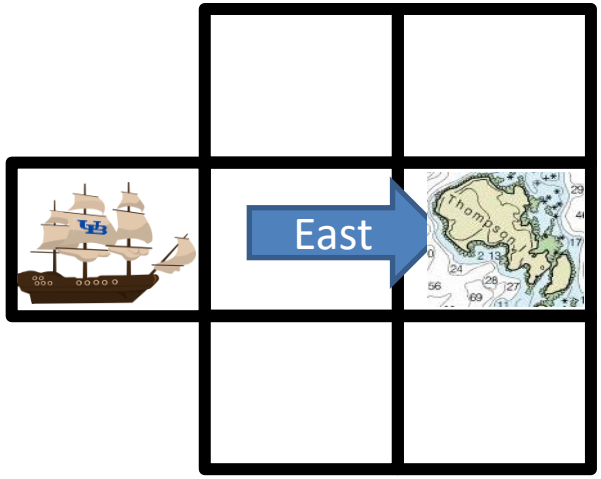


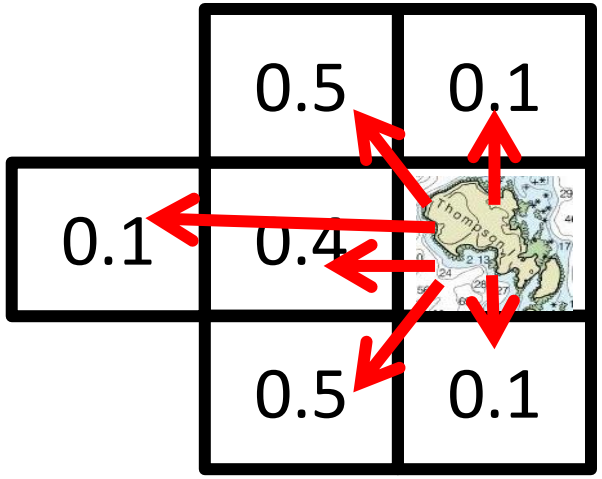
The world is round and the left, right and top, bottom edges are connected.

Steps

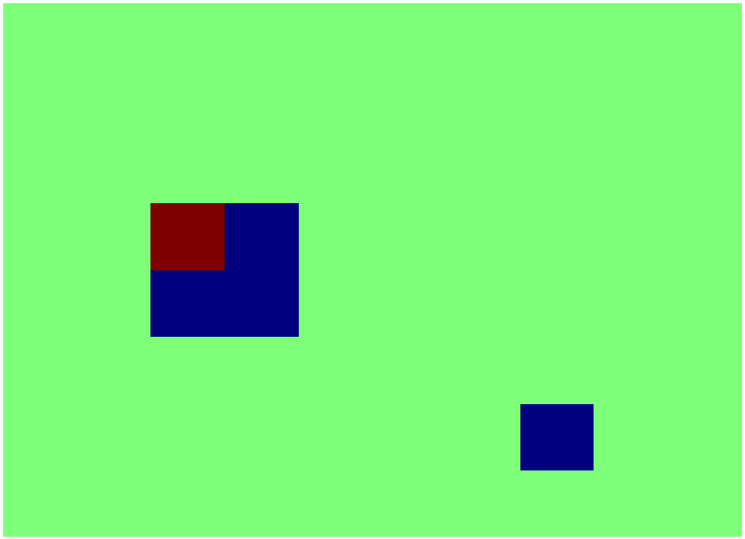
Use saveData() and submit the data.json file. See code for details.

- Make transition matrices (40pts)
- How long before you get lost? (10pts)
- How many islands are there in the ocean map? (10pts)
- Solve MDP problem using Value iteration
  - Implement 'valIter' to perform value iteration (20pts)
  - Implement 'computePolicy' which takes the current Value function and computes the policy. (10pt)
  - What is the optimal sailing policy? (10pts)

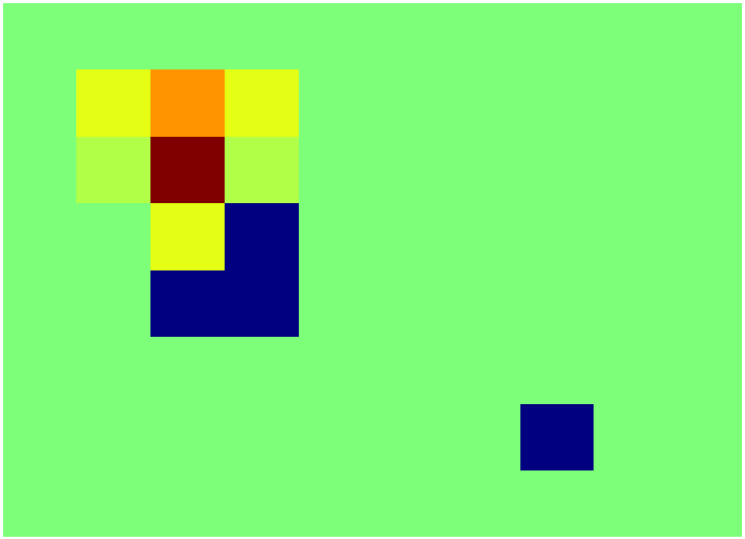




Example Figures



Probability of starting in harbor



Probability after sailing north

NOTE: Before you implement _makeActions(), the before and after picture will
Be the same, since the transition matrix for sailing is not properly defined. Instead it will
Be initialized to the identity matrix.