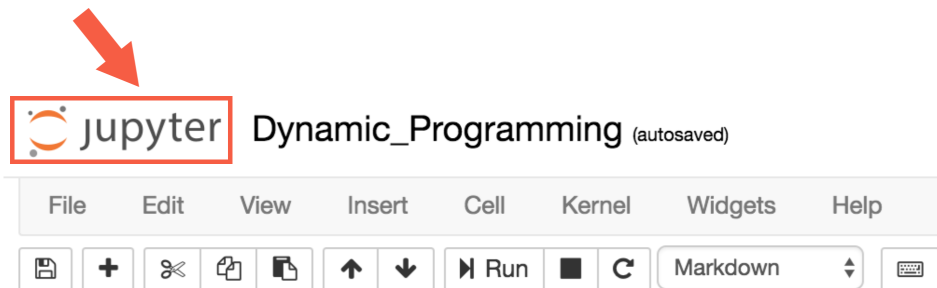


encouraged to open [this sheet](#) in a new window.

Feel free to check your solution by looking at the corresponding sections in

`Dynamic_Programming_Solution.ipynb`. (In order to access this file, you need only click on "jupyter" in the top left corner to return to the Notebook dashboard.)



To find `Dynamic_Programming_Solution.ipynb`, return to the Notebook dashboard.

### (Optional) Additional Note on the Convergence Conditions

To see intuitively *why* the conditions for convergence make sense, consider the case that neither of the conditions are satisfied, so:

- $\gamma = 1$ , and
- there is some state  $s \in \mathcal{S}$  where if the agent starts in that state, it will never encounter a terminal state if it follows policy  $\pi$ .

In this case,

- reward is not discounted, and
- an episode may never finish.

Then, it is possible that iterative policy evaluation will not converge, and this is because the state-value function may not be well-defined! To see this, note that in this case, calculating a state value could involve adding up an infinite number of (expected) rewards, where the sum may not [converge](#).

In case it would help to see a concrete example, consider an MDP with:

- two states  $s_1$  and  $s_2$ , where  $s_2$  is a terminal state
- one action  $a$ . (Note: An MDP with only one action can also be referred to as a [Markov](#)