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The WindyGridworldEnv Environment

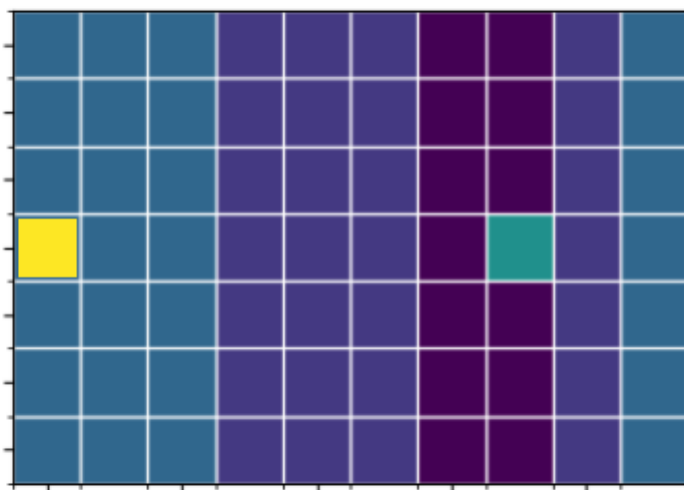
The WindyGridworldEnv Environment

In this exercise, you will examine another implementation of a grid world type environment, with a different reward structure.

Make sure that you have completed the setup requirements as described in the Set Up Lab Environments section.

Credit to [Denny Britz](#) for the implementation of the WindyGridworldEnv Environment

The WindyGridworld environment is a simple environment of a 7x10 tiles, which has “winds” that forced state transitions in certain state, irregardless to which action was taken.



Examine the **windy_gridworld.py** file under the **lib\envs** folder. Specifically, take a look at the **WindyGridworldEnv** class. Similar to the **CliffWalkingEnv** class, the **WindyGridworldEnv** class implements the **DiscreteEnv** class from open AI's `gym.envs.toy_text.discrete`.

Take some time to study the implementation of this environment. Start by examining how the states are represented in this environment. Unlike the `CliffWalkingEnv` class, the `WindyGridworldEnv` class does not override the `reset()` and `step()` function from the `DiscreteEnv` class.

Once you are familiar with the code, answer the following questions.

Lab Question

1/1 point (graded)

How many unique states does the `WindyGridworldEnv` environment has?

☐ 16

☐ 48

☒ 70 ✓

☐ 256

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

Lab Question

1/1 point (graded)

How many unique actions can an agent perform in the `WindyGridworldEnv` environment?

☐ 0

☐ 1

☐ 2

☒ 4 ✓

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

Lab Question

1/1 point (graded)

How are the states represented in the WindyGridworldEnv environment?

- ☐ Using an integer between zero and the number of unique states
- ☒ Using an integer between zero and the number of unique states minus 1 ✓
- ☐ Using a sets of X, Y coordinates
- ☐ Using arrays of one-hot encoding

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

Lab Question

1/1 point (graded)

In the WindyGridworldEnv environment, what is the reward given to the agent for each step taken, when the goal is not yet reached?

- ☐ -100
- ☐ -50

☒ -1 ✓☐ 0☐ 1☐ 50☐ 100

You have used 1 of 2 attempts

✓ Correct (1/1 point)

Lab Question

1/1 point (graded)

In the WindyGridworldEnv environment, what is the reward given to the agent, when the goal is reached?

☐ -100☐ -50☒ -1 ✓☐ 0☐ 1☐ 50☐ 100

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

Lab Question

1/1 point (graded)

When will an episode ends in the WindyGridworldEnv environment (when will the environment reset)?

- ☐ When the agent has taken 5 steps
- ☐ When the agent has taken 50 steps
- ☐ When the agent hits a wall
- ☐ When the agent moves to one of the cliffs
- ☒ When the agent has reached the goal ✓
- ☐ When the agent has reached the goal 5 times
- ☐ When the agent has reached the goal 50 times

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

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