EX.no:1 **GETTING STARTED WITH OpenAI GYM**
Date:24/12/2024

AIM:

To install OpenAI gym and list all its environments . Also try the FrozenLake environment with random actions.

PROCEDURE:

- *Install Required Libraries:*
  Ensure gym and its dependencies are installed. Use the following commands:

- *Initialize and Explore the Environment:*
  Import necessary libraries like gym and matplotlib.
  Display the list of all available environments using envs.registry.keys().
  Create the FrozenLake8x8-v1 environment with render_mode set to "human" or "rgb_array" for rendering.

- *Render and Visualize the Environment:*
  Reset the environment and render the initial state.
  Visualize the environment using matplotlib to display rgb_array-rendered frames.

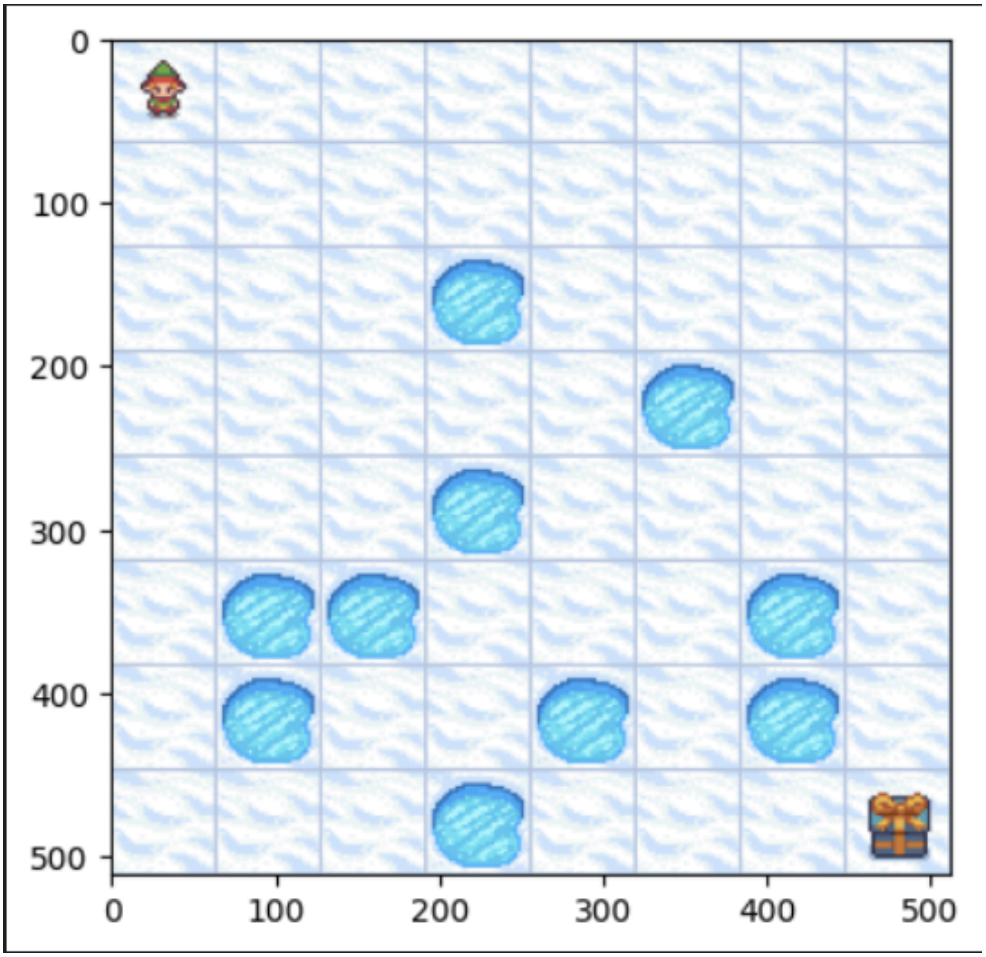
- *Interact with the Environment:*
  Generate random actions using env.action_space.sample().
  Perform steps in the environment using env.step(action) and render the output.
  Display observation and action spaces for better understanding.

- *Simulate and Terminate:*
  Run a loop for multiple iterations to simulate random actions.
  Use time.sleep() to introduce delays for better visualization.
  Break the loop if a terminal state is reached and close the environment with env.close().

INFERENCE:

The code demonstrates the initialization and interaction with the FrozenLake8x8-v1 environment, showcasing state transitions, action spaces, and environment dynamics through random actions. It provides a foundation for visualizing and understanding reinforcement learning in a grid-based setup.

OUTPUT:


0
100
200
300
400
500
0
100
200
300
400
500