

Lab 1: Mountain Car Problem

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In [ ]: import gym
env = gym.make("MountainCar-v0", render_mode="human")
```

```
In [ ]: obs_space = env.observation_space
action_space = env.action_space
print("The observation space: {}".format(obs_space))
print("The action space: {}".format(action_space))
```

The observation space: Box([-1.2 -0.07], [0.6 0.07], (2,), float32)
The action space: Discrete(3)

```
In [ ]: pip install pygame
```

Requirement already satisfied: pygame in c:\users\mrinal bhan\anaconda3\envs\gym\lib\site-packages (2.1.0)
Note: you may need to restart the kernel to use updated packages.

```
In [ ]: import matplotlib.pyplot as plt

# reset the environment and see the initial observation
obs = env.reset()
print("The initial observation is {}".format(obs))

# Sample a random action from the entire action space
random_action = env.action_space.sample()

# # Take the action and get the new observation space
new_obs, reward, done, info, k = env.step(random_action)
print("The new observation is {}".format(new_obs))
```

The initial observation is (array([-0.44677672, 0.], dtype=float32), {})
The new observation is [-0.4473478 -0.00057108]

```
In [ ]: import time
num_steps = 1500
obs = env.reset()
for step in range(num_steps):
    action = env.action_space.sample()
    obs, reward, done, info, k = env.step(action)
    env.render()
    #time.sleep(0.001)
    if done:
        env.reset()

# Close the env
env.close()
```

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In [ ]: pip install gym[all] --user
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In [ ]: pip install git+https://github.com/openai/mujoco-py --user
```