

1.0 Make a Step

```
1. Setup Mario
```

```
## Install dependencies
!pip install gym_super_mario_bros==7.3.0 nes_py
```

... Requirement already satisfied: gym_super_mario_bros==7.3.0 in c:\users\david\appdata\roaming\python\python38\site-packages (7.3.0)
Requirement already satisfied: nes_py in c:\users\david\appdata\roaming\python\python38\site-packages (8.1.8)
Requirement already satisfied: gym==0.17.2 in c:\users\david\appdata\roaming\python\python38\site-packages (from nes_py) (0.19.0)
Requirement already satisfied: pygame<=1.5.11,>=1.4.0 in c:\users\david\appdata\roaming\python\python38\site-packages (from nes_py) (1.5.11)
Requirement already satisfied: tqdm==4.48.2 in c:\users\david\anaconda3\lib\site-packages (from nes_py) (4.59.0)
Requirement already satisfied: numpy>=1.18.5 in c:\users\david\anaconda3\lib\site-packages (from nes_py) (1.20.1)
Requirement already satisfied: cloudpickle<1.7.0,>=1.2.0 in c:\users\david\appdata\roaming\python\python38\site-packages (from gym==0.17.2->nes_py) (1.6.0)

This is another note about the game.

1.0.1 Make a Step

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1.0.1 Make a Step

This is how to do a step etc.
There are maybe better ways of doing this.

```
Import packages
```

```
Notes:
When working with machine learning models, it is best to try to simplify the environment as much as possible. Here we are simplifying the actions that our mario character can take.
```

```
## Import game
import gym_super_mario_bros

## Import joybad wrapper
from nes_py.wrappers import JoypadSpace

## Import the simplified controls
from gym_super_mario_bros.actions import SIMPLE_MOVEMENT
```

1.0.2 Make a Step

This is how to do a step etc.
There are maybe better ways of doing this.

2.0 Next Major Step

Setup Game Env

Notes: Setting up the env with the specific super mario version

1.0.1. This is another note about the game.

Without setting up the joystick space as simple there are 256 discrete button combinations in the game. This complexity would take the model a long time to train and therefore we have simplified the environment to 7 actions.

```
env.action_space
```

Observations space returns what you will be getting back from the game.

```
env.observation_space.shape
```

```
## Setup the game environment
env = gym_super_mario_bros.make("SuperMarioBros-v0")

## add the joystick to the env
env = JoypadSpace(env, SIMPLE_MOVEMENT)
```

1.0.2. This is another note about the game.

Python

Setup the game

```
## Create a restart flag
done = True

## loop through frames (step)
for step in range(100000):
    ## Initial game start
    if done:
        ## Start the game
        env.reset()
    ## env.step allows us to pass an action to the game (sample a random action)
    ## Returns outputs
    state, reward, done, info = env.step(env.action_space.sample())
    ## Shows the game
    env.render()
## Closes the game
env.close()
```

1.0.3. This is another note about the game.

Python

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