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February 20, 2020

Reinforcement Learning Penguins (Part 1/4) | Unity ML-Agents

Updated to ML-Agents v0.14 as of February 20, 2020

GETTING HELP

Need general help with ML-Agents? I'm happy to help, but I'm only one person. Did you know there's an Official Unity ML-Agents forum? That may be the quickest way to get help. 😃

UNITY PROJECT SETUP AND ASSET IMPORT

In this tutorial, you will set up your Unity project with ML-Agents and import several 3d Mesh Assets that will be used later in the tutorial.

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We've split off general Unity ML-Agents into a separate tutorial so that we can re-use it for other projects.

Follow the instructions here and then come back when you're done:

[Unity ML-Agents Setup Tutorial](#)
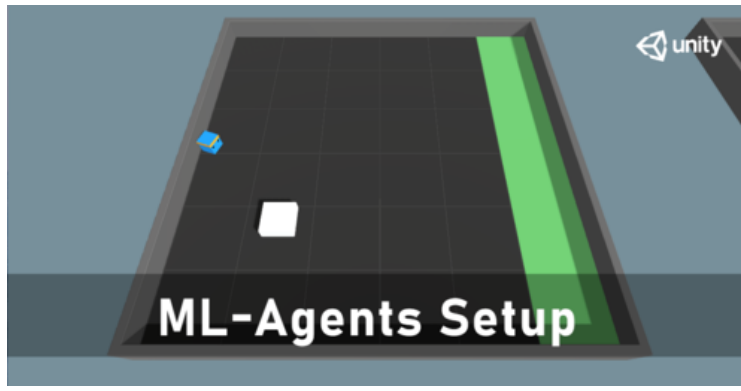
IMPORT ASSETS

In this section, you'll download, import, and set up 3D Meshes for the tutorial.

- Download the free resources for this tutorial: https://gumroad.com/l/TZNBD 👈 $0+ on Gumroad means you can get them *completely for free* by typing in a 0, no account required, just an email address.

Now we'll import these assets to our project.

- Create a new folder in Unity called *Penguin* inside Assets.
- Create another folder called *Meshes* inside *Assets\Penguin*.
- Import the .fbx files (3d Meshes) to the *Meshes* folder.

Figure 01: The Meshes folder should look like this after all .fbx files have been imported

- Drag each of the Meshes into the Scene, one at a time **(Figure 02)**. It's okay if they overlap.
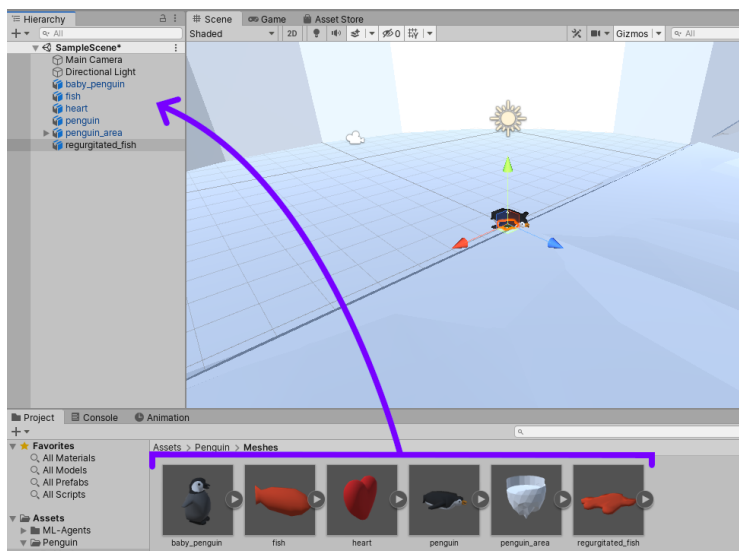

Figure 02: Each Mesh should be dragged up to the Scene hierarchy individually.

- Rename each item as follows:
  - baby_penguin > BabyPenguin
  - fish > Fish
  - heart > Heart
  - penguin > Penguin
  - penguin_area > PenguinArea
  - regurgitated_fish > RegurgitatedFish
- Create a new folder called *Prefabs* inside *Assets\Penguin*.
- Drag each renamed object down into the *Prefabs* folder, one at a time **(Figure 03)**
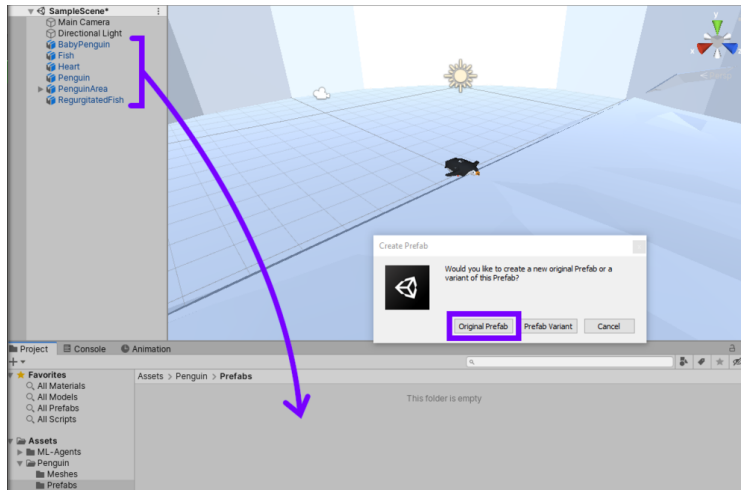
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Figure 03: Drag each object into the Prefabs folder and choose Original Prefab.

- Delete all of the Prefabs from the Scene except PenguinArea.
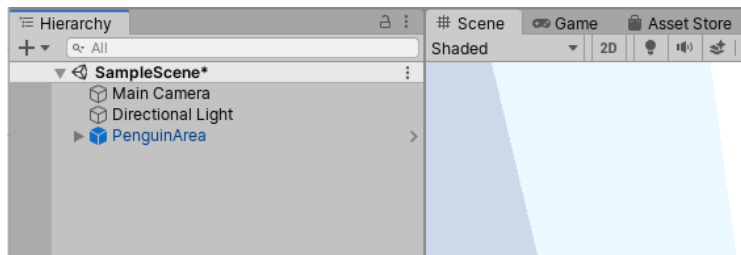

Figure 04: The Scene Hierarchy after all but PenguinArea has been removed.

CONCLUSION

You should now have a Unity project containing the ML-Agents directory and several 3d Mesh files. This is the standard way to set up a new ML-Agents project. You've also created Prefabs for each of the Meshes that will be used in subsequent tutorials.

TUTORIAL PARTS

Reinforcement Learning Penguins (Part 1/4)

Reinforcement Learning Penguins (Part 2/4)

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Ted Barnett A month ago ·

0 Likes

The latest ML-Agents release is now 0.15.0. This
breaks compilation of the Penguin tutorial since
"Agent.CollectObservations now takes a
VectorSensor argument. (#3352, #3389)" which
throws an error against PenquinAgents.cs.

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3 weeks ago · 0 Likes

Thanks, I was aware, but haven't had a
chance to update it yet.

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