Pickrunner Documentation

Release 1.0

Colin Kennedy

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User Guide

Maya's pickWalk tool is okay, but it doesn't work well for many common scenarios. In particular, pickWalking is useless for rigs, because rig controllers are rarely grouped so that a user can move between them easily.

For this reason and a few others, Pickrunner was created.

Pickrunner is very simple. You assign how to move between objects in your scene once and then you can use your up/down/left/right keys to move between those objects just like you normally would. If an object doesn't have any Pickrunner data assigned to it, the tool will just use pickWalk, instead. That way, even if Pickrunner is only partially implemented in a scene, it won't interrupt the artist's process.

CHAPTER 1

Installation

1.1 Installing By Module

Download the pickrunner project from online.

```
git clone https://github.com/ColinKennedy/pickrunner.git
```

Pickrunner comes with a .mod file located "modules/pickrunner.mod". Just add the full path to the *modules* folder to the `MAYA_MODULE_PATH` environment variable.

In Windows DOS

```
set MAYA_MODULE_PATH=C:\Path\to\pickrunner\modules:%MAYA_MODULE_PATH%
```

In bash

```
export MAYA_MODULE_PATH=/Path/to/pickrunner/modules:$MAYA_MODULE_PATH
```

In tcsh/csh

```
setenv MAYA_MODULE_PATH /Path/to/pickrunner/modules:$MAYA_MODULE_PATH
```

Now restart Maya and Pickrunner will have installed a brand new shelf with the GUI tool.

Note: All of the paths listed in pickrunner.mod are relative to the main project folder. So if you need to move pickrunner.mod someplace else, make sure to replace the ..\ and ../ parts with the absolute path to wherever you placed the pickrunner project folder.

1.2 Installing Manually

If you're not a fan of adding a whole extra shelf just for a single button, I don't blame you. Pickrunner's installation can be customized but the process is more manual than just setting the module file.

1. Add the "scripts" folder onto your `PYTHONPATH` environment variable.
    - Doing this steup will make Pickrunner's GUI load. otherwise, you'll get an ImportError if you try to run the Pickrunner shelf button.
2. Add the directory to Pickrunner's "userSetup.py" file onto your `PYTHONPATH`.
    - This step will override your hotkeys on Maya's startup so that you can use Pickrunner without the GUI.
3. Add the path to the "pickrunner_icon.png" in the `XBMLANGPATH` environment variable.
    - Only do this if you want to use the Pickrunner icon / shelf button. Note, you'll need to add "%B" to the end of the directory of "pickrunner_icon.png". See Autodesk's documentation on the XBMLANGPATH environment variable for details.
4. Make a new shelf button and add these Python commands onto it.

```
from pickrunner import mayarunner
mayarunner.show()
```

4b. If you want, use the pickrunner_icon.png file for your new shelf button.

And that's it, you're done.

1.3 Examples

1.3.1 Module Example (Windows)

```
set MAYA_MODULE_PATH=C:\Users\korinkite\Dropbox\Private\my_ENV\env_
↪ROOT\python\packages\pickrunner\modules
```

1.3.2 Manual Example (Windows)

```
set XBMLANGPATH=C:\Users\korinkite\Dropbox\Private\my_ENV\env_
↪ROOT\python\packages\pickrunner\icons\%B
set PYTHONPATH=C:\Users\korinkite\Dropbox\Private\my_ENV\env_
↪ROOT\python\packages\pickrunner\scripts;%PYTHONPATH%
set PYTHONPATH=C:\Users\korinkite\Dropbox\Private\my_ENV\env_
↪ROOT\python\packages\pickrunner\integration;%PYTHONPATH%
```

CHAPTER 2

Scene Setup

If you installed Pickrunner through the "pickrunner.mod" file, you should already have a new shelf called "Pickrunner" on-startup. Just click the Pickrunner GUI button.

This button will load the Pickrunner GUI, which comes in two modes, *Assignment Mode* and *Selection Mode*.

2.1 Assignment Mode

This is the default mode that you'll see when you open the Pickrunner GUI. Assignment Mode is exactly as it sounds like. It's the mode that lets you set up Pickrunner-object relationships.

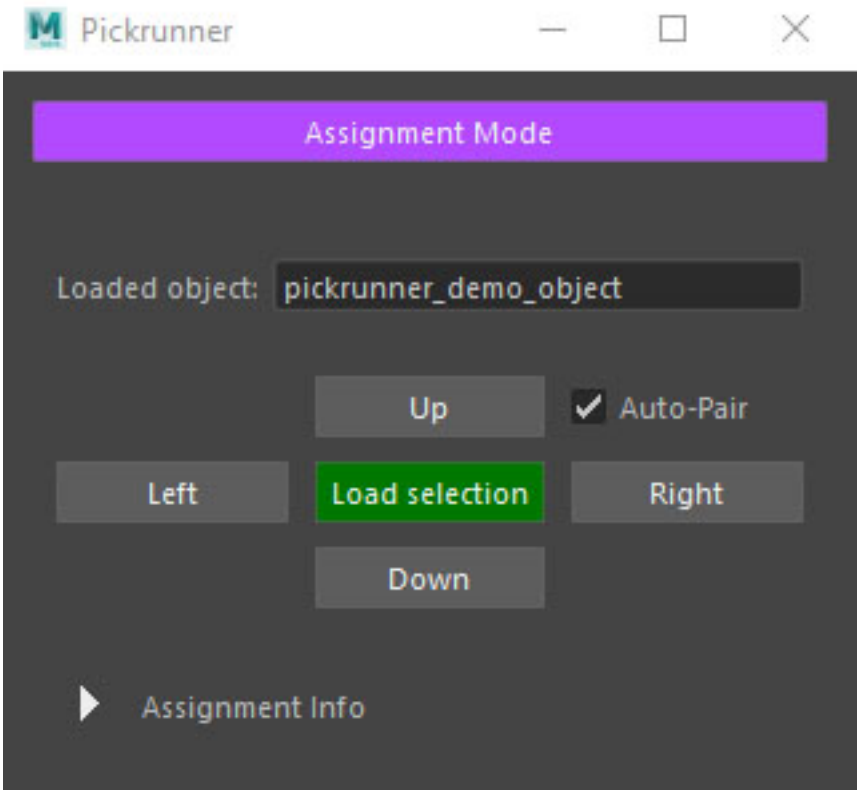
While in Assignment Mode, you should see 4 direction buttons and a button labelled "Load Selection".

Select an object, for example objectA, and then click "Load Selection". objectA is now being editted by Pickrunner.

Select another object, for example objectB, and click any of the up, down, left, or right buttons.

Note: If you've got "Auto-Pair" enabled, Pickrunner will reflect objects. So when you assign objectB as the "left" direction to objectA, "Auto-Pair" will also set objectA as the "right" direction to objectB. It's just a timesaver. Turn it off if you don't want it to do that.

Assuming you've done all of the connections you wanted, you're ready to start using Pickrunner. If you have the direction hotkeys set up correctly, you should be able to press up/down/left/right to move between objects or use Pickrunner's "Selection Mode".



2.2 Selection Mode

This is a good mode to test your Pickrunner connections with. Select objects in the scene that have Pickrunner data and press the direction keys. Your selection should move from object to object.

CHAPTER 3

Drawback To Pickrunner

Pickrunner is implemented using node UUIDs, which means you can go from any node to any node, even if the nodes are shading nodes (DG nodes).

The downside to using UUIDs though is that if you export your objects and import them into another scene, Pickrunner won't work. Referencing your nodes will still work though, and in practice that's usually good enough.

CHAPTER 4

Final Notes

If you're looking to contribute, please check out this page, first.

4.1 API Documentation

4.1.1 Setting Up For Development

Make sure to grab the requirements.txt file before trying to build the docs

```
pip -r docs/requirements.txt
```

There are some modules used by Pickrunner that are not mentioned in the requirements.txt file. Namely shiboken, pymel, and maya.cmds. All of these are provided by Maya so we just ignore them for building documentation.

4.1.2 Building The Documentation

Here are the steps to rebuild this documentation:

1. Make sure that the scripts folder is visible in the `PYTHONPATH`.
2. Run `make html` while cd'ed into the `docs` folder, or make.bat if you're on Windows
3. Alternatively, run `sphinx-build -b html docs/source docs/build`
4. If new Python modules are added, make sure to rebuild their pages, using `docs/regenerate.sh` or `docs/regenerate.bat` if you're on Windows.

4.1.3 Python Documentation

Most (all?) of the documentation is just for the Pickrunner GUI so mileage will vary. The main class of-interest are *pickrunner.gui.BehaviorControl*. For an example of how it's implemented, check out *pickrunner.mayarunner.MayaBehaviorControl*.

pickrunner.gui module

The Pickrunner base interface.

This module contains an abstract controller that is used to implement different DCC environments, such as Maya, and a GUI that the controller can be used for.

class pickrunner.gui.**BehaviorControl**
Bases: object

An abstract controller that must be implemented in subclasses.

This controller is used to interface with Pickrunner.

classmethod assign(*from_object*, *direction*, *to_object*, *settings=None*)
Set an object to be remapped to another object, given some direction.

Parameters

- **from_object** – The object that will have the direction and to_object stored onto.
- **direction** – Some unique key to store onto from_object. This direction should always point towards to_object. (How direction points to to_object is up to the developer to implement).
- **to_object** – The object to remap to when direction and from_object are given to *BehaviorControl.do_motion()*.

classmethod do_motion(*direction*, *obj*)
Move the object to a given direction.

How exactly it should "move" must be implemented in subclasses. For example, in Maya, this method will select a node that is associated with the given node-direction pair.

Parameters

- **direction** – The direction to move to.
- **obj** – The object to move from.

static get_object_name(*obj*)
str: Find the unique-name of the given object.

static get_selection()
list: The selected objects in the Maya scene.

classmethod get_settings(*obj*)
dict: Any information stored in the given object that can be used.

pickrunner.mayarunner module

A Maya implementation for Pickrunner.

The user, usually an animator or rigger, can use this GUI to assign object-to-object relationships. Once those relationships are defined, they can use the arrow-keys on their keyboard to move between those objects.

Functionally, this is exactly the same as Maya's built-in pickWalk command. The difference here however is that pickWalk is notoriously useless because it relies on Maya's DAG hierarchy, which doesn't always make navigation easy.

Pickrunner doesn't care about hierarchy. It can even be used for DG nodes. Take that, pickWalk!

class pickrunner.mayarunner.**MayaBehaviorControl**
Bases: *pickrunner.gui.BehaviorControl*

A controller that implements Maya-specific functions to Pickrunner.

classmethod assign(*from_object*, *direction*, *to_object*, *settings=None*)
Set an object to be remapped to another object, given some direction.

Once an object is remapped to another object, we can use that to move Maya's selection around whenever the user asks to.

Parameters

- **from_object** – The object that will have the direction and to_object stored onto.
- **direction** – Some unique key to store onto from_object. This direction should always point towards to_object. (How direction points to to_object is up to the developer to implement).
- **to_object** – The object to remap to when direction and from_object are given to `BehaviorControl.do_motion()`.

classmethod do_motion(*direction*, *obj*)
Change selection to an associated node of obj, given some direction.

Parameters

- **direction** (*str*) – The direction to move to.
- **obj** (*<pm.general.PyNode>*) – The object to get the associated object from.

static get_object_name(*obj*)
str: Find the unique-name of the given object.

static get_selection()
list[<pm.general.PyNode>]: The selected objects in the Maya scene.

classmethod get_settings(*node*)
dict[str]: Get the settings for the given node, if any.

reserved_attribute_name = '__mayarunner_info'

pickrunner.mayarunner.**do_pickrun_motion**(*direction*)
Try to pickrun in a given direction. Otherwise, pickWalk.

Parameters **direction** (*str*) – The direction to walk. Options are: ("up", "down", "left", "right").

pickrunner.mayarunner.**get_uuid**(*node*)
str: Get the UUID of the given node, if the node exists.

pickrunner.mui module

Maya-UI functions.

pickrunner.mui.**delete_ui_if_exists**(**uis*)
Delete UIs using a function wrapper to delete Maya UIs, if they exist.

Parameters ***uis** (*list[str]*) – The UI names to delete.

Returns The wrapped function.

Return type callable

pickrunner.mui.**delete_ui_if_exists_qt**(*uis*)
Delete UIs using a function wrapper to delete Maya UIs, if they exist.

Parameters ***uis** (*list[str]*) – The UI names to delete.

Returns The wrapped function.

Return type callable

pickrunner.mui.**get_main_menu_bar**()
<QtWidgets.QMenuBar> or NoneType: The top bar.

pickrunner.mui.**get_main_shelf_name**()
Get Maya's main shelf widget.

This is just a convenience method for querying $gShelfTopLevel.

Example

```
>>> pm.shelfLayout('some_shelf', parent=get_main_shelf_name()).
```

Returns The name/path to the main Maya shelf.

Return type str

pickrunner.mui.**get_main_window**()
<QtWidgets.QWidget> or NoneType: Cast Maya's window to widget.

pickrunner.visibility_widget module

A set of small widgets that are meant to show/hide themselves.

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