

Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\004_GUI_Code\Code\tp_launcher_gui_START.py

```
machines and a whole bunch of other cool stuff.
```

```
#!/usr/bin/env python
```

```
__author__ = 'Trevor Payne'
```

```
__version__ = '1.0'
```

```
import sys
```

```
import Qt
```

```
from Qt import QtWidgets, QtCore, QtGui
```

```
QT_VER = Qt.__binding__
```

```
PY_VER = sys.version[:3]
```

```
#!/usr/bin/env python
```

```
__author__ = 'Trevor Payne'
```

```
__version__ = '1.0'
```

```
import os
```

```
import sys
```

```
import Qt
```

```
from Qt import QtWidgets, QtCore, QtGui
```

```
QT_VER = Qt.__binding__
```

```
PY_VER = sys.version[:3]
```

```
class TP_Launcher_GUI(QtWidgets.QWidget):
```

```
    '''The goal of this tool is to create a GUI that
```

```
        allows the user to quickly create, select and
```

```
        delete machines and add them to a launch
```

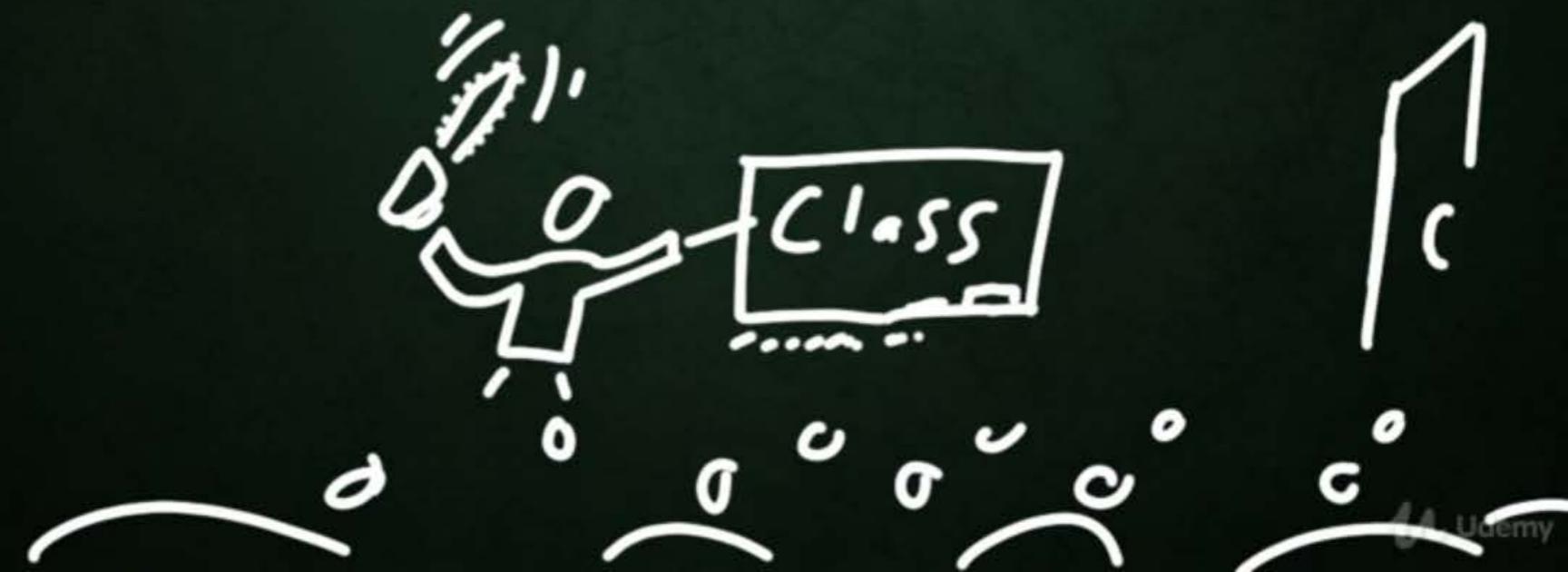
```
Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos |
```

Ln 24 Col 1 Ch 1

Br Pr Ps Ae

IMPORT AND CLASS

- File named ‘`tp_launcher_gui.py`’
- GUI = Graphical User Interface
- Code Compare = Free Program!!
- `import os` = file pathing...
- PEP8 class and member naming
 - `My_Class`, `my_Function`, `my_var`



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\004_GUI_Code\Code\tp_launcher_gui_START.py

```
22 __version__ = '1.0'
23
24 import sys
25 import Qt
26 from Qt import QtWidgets, QtCore, QtGui
27
28 QT_VER = Qt.__binding__
29 PY_VER = sys.version[:3]
30
31
32
33
34
35
36
37 # Copyright (c) 2017 Trevor Payne
38 #
39 # Permission is hereby granted, free of charge, to any person obtaining
40 # a copy of this software and associated documentation files (the "Software"),
41 # to deal in the Software without restriction, including without limitation
42 # the rights to use, copy, modify, merge, publish, distribute, sublicense,
43 # and/or sell copies of the Software, and to permit persons to whom the Software
44 # is furnished to do so, subject to the following conditions:
45 #
46 # The above copyright notice and this permission notice shall be included in all
47 # copies or substantial portions of the Software.
48 #
49 # THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
50 # IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
51 # FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
52 # AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
53 # LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
54 # OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
55 # SOFTWARE.
```

D:\TPX\PTD_01\004_GUI_Code\Code\tp_launcher_gui_END.py

```
35     delete workspaces and add, remove and launch
36     applications within those workspaces.
37     ...
38     def __init__(self, parent=None):
39         super(TP_Launcher_GUI, self).__init__(parent)
40
41         self._icons = QtWidgets.QFileIconProvider()
42         self._my_path = os.path.dirname(os.path.realpath(__file__))
43         images_path = os.path.join(self._my_path, 'images')
44         full_path = os.path.join(images_path, 'TPayne_Launcher')
45         self._tpl_icon = QtGui.QIcon(full_path)
46
47         self._setup()
48
49         #----- SETUP UI -----
50
51     def _setup(self):
52         v_layout = QtWidgets.QVBoxLayout(self)
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 47 Col 22 Ch 22

Br Pr Ps Ae

GUI CONSTRUCTOR

- QFileIconProvider = Provides icons built into operating system!
- Path to tool icon [png image] using relative pathing
- Avoid hardcoding paths!
 - Will be adding more code later
 - Call GUI Setup()



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\004_GUI_Code\Code\tp_launcher_gui_START.py

```
22 __version__ = '1.0'
23
24 import sys
25 import Qt
26 from Qt import QtWidgets, QtCore, QtGui
27
28 QT_VER = Qt.__binding__
29 PY_VER = sys.version[:3]
30
31
32
33
34
35
36
37 # Copyright (c) 2017 Trevor Payne
38 #
39 # Permission is hereby granted, free of charge, to any person obtaining
40 # a copy of this software and associated documentation files (the "Software"),
41 # to deal in the Software without restriction, including without limitation
42 # the rights to use, copy, modify, merge, publish, distribute, sublicense,
43 # and/or sell copies of the Software, and to permit persons to whom the Software
44 # is furnished to do so, subject to the following conditions:
45 #
46 # The above copyright notice and this permission notice shall be included in all
47 # copies or substantial portions of the Software.
48 #
49 # THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
50 # IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
51 # FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
52 # AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
53 # LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
54 # OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
55 # SOFTWARE.
```

D:\TPX\PTD_01\004_GUI_Code\Code\tp_launcher_gui-END.py

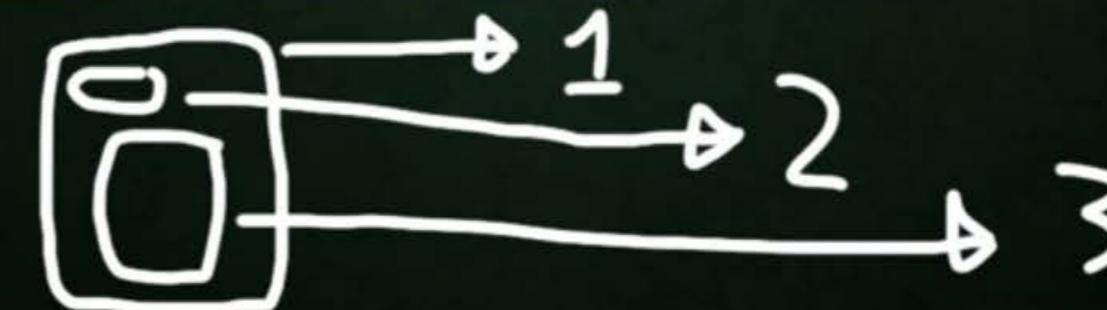
```
47     self._setup()
48
49     #----- SETUP UI -----
50
51     def _setup(self):
52         v_layout = QtWidgets.QVBoxLayout(self)
53
54         v_layout.addLayout(self._setup_header())
55         v_layout.addWidget(self._setup_apps())
56
57         self.setWindowTitle('TPayne\'s Launcher ' + __version__)
58         self.setWindowIcon(self._tpl_icon)
59         flag = QtCore.Qt.WindowCloseButtonHint
60         self.setWindowFlags(QtCore.Qt.Window | flag)
61         self.resize(190, 200)
62
63     def _setup_header(self):
64         h_layout = QtWidgets.QHBoxLayout()
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 61 Col 30 Ch 30

Br Pr Ps Ae

GUI SETUP

- GUI Code broken up into chunks based on parts of tool
- Setup() calls '**setup_Header**' and '**setup_Apps**' (next videos)
 - Easier to navigate!
- Set window **title** and **icon**
- **Qt.WindowCloseButtonHint** =
Removes minimize/max. buttons!
- **Resize** = set window size



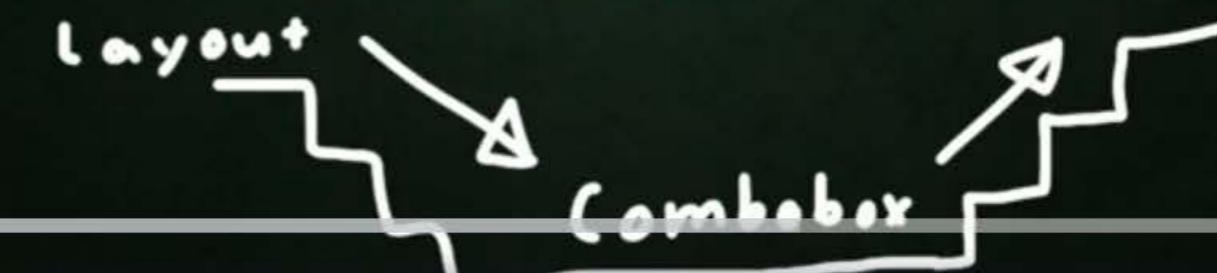
Code Compare - tp_launcher_gui_START.py <> tp_launcher_gui_END.py

12. Workspace Combobox

```
20
21     __author__ = 'Trevor Payne'
22     __version__ = '1.0'
23
24     import sys
25     import Qt
26     from Qt import QtWidgets, QtCore, QtGui
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56         self.setWindowTitle('TPayne\'s Launcher ' + __version__)
57         self.setWindowIcon(self._tpl_icon)
58         flag = QtCore.Qt.WindowCloseButtonHint
59         self.setWindowFlags(QtCore.Qt.Window | flag)
60         self.resize(190, 200)
61
62
63
64
65
66         self._workspace_gb = QtWidgets.QGroupBox('Workspaces')
67         v_layout = QtWidgets.QVBoxLayout(self._workspace_gb)
68
69         self._workspace_cb = QtWidgets.QComboBox()
70
71         v_layout.addWidget(self._workspace_cb)
72         h_layout.addWidget(self._workspace_gb)
73         h_layout.addStretch()
74         return h_layout
75
76     def _setup_apps(self):
77         self._app_lw = QtWidgets.QListWidget()
78         self._app_lw.setAlternatingRowColors(True)
79         flag = QtWidgets.QAbstractItemView.InternalMove
80         self._app_lw.setDragDropMode(flag)
81         return self._app_lw
82
83 if __name__ == '__main__':
84     print (PY_VER)
85     print (QT_VER)
```

WORKSPACE COMBOBOX

- Create groupbox normally
- Then pass groupbox to new layout as argument = **sets groupbox layout!! (parenting)**
QtWidget.QHBoxLayout(my_gb)
- Can parent/set layouts TO widgets, but **not widgets to layout... :(**
- Create and store combobox
- Notice **heirarchical code structure!**



```
PTD_01\004_GUI_Code\Code\tp_launcher_gui-END.py
flag = QtCore.Qt.WindowCloseButtonHint
self.setWindowFlags(QtCore.Qt.Window | flag)
self.resize(190, 200)

def _setup_header(self):
    h_layout = QtWidgets.QHBoxLayout()
    workspace_gb = QtWidgets.QGroupBox('Workspaces')
    v_layout = QtWidgets.QVBoxLayout(workspace_gb)

    self._workspace_cb = QtWidgets.QComboBox()

    v_layout.addWidget(self._workspace_cb)
    h_layout.addWidget(workspace_gb)
    h_layout.addStretch()
    return h_layout

def _setup_apps(self):
    self._app_lw = QtWidgets.QListWidget()
    self._app_lw.setAlternatingRowColors(True)
    flag = QtWidgets.QAbstractItemView.InternalMove
    self._app_lw.setDragDropMode(flag)
    return self._app_lw

if __name__ == '__main__':
    print(PY_VER)
    print(QT_VER)
    app = QtWidgets.QApplication(sys.argv)
    ex = TP_Launcher_GUI()
    ex.show()

    changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 76 Col 33 Ch 33
    Br  Pr  Ps  Ae  
```

APPS LIST WIDGET

- QtWidgets.QListWidget: no args
 - Could use keyword args, but they're harder to read
- Alternating rows should ALWAYS be on!
- Drop/Drop internal = reordering!



```
66 v_layout = QtWidgets.QVBoxLayout(workspace)
67
68     self._workspace_cb = QtWidgets.QComboBox()
69
70     v_layout.addWidget(self._workspace_cb)
71     h_layout.addWidget(workspace_gb)
72     h_layout.addStretch()
73
74     return h_layout
75
76 def _setup_apps(self):
77     self._app_lw = QtWidgets.QListWidget()
78     self._app_lw.setAlternatingRowColors(True)
79     flag = QtWidgets.QAbstractItemView.InternalSelection
80     self._app_lw.setDragDropMode(flag)
81
82 if __name__ == '__main__':
83     print(PY_VER)
84     print(QT_VER)
85     app = QtWidgets.QApplication(sys.argv)
86     ex = TP_Launcher_GUI()
87     ex.show()
88     sys.exit(app.exec_())
89
90 # Copyright (c) 2017 Trevor Payne
```



RUNNING THE GUI

if __name__ == '__main__':

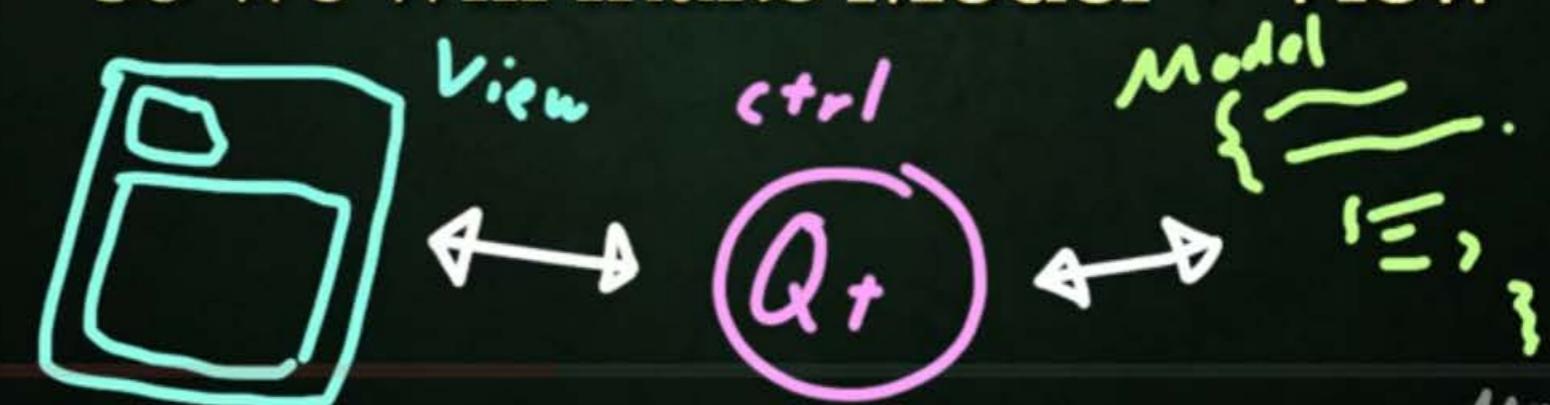
- Run the following code if this file is being run (NOT imported)
- print python/qt binding versions
- instance **QApplication** to run code
- **instance/show** our tool/GUI
- handle running/closing tool



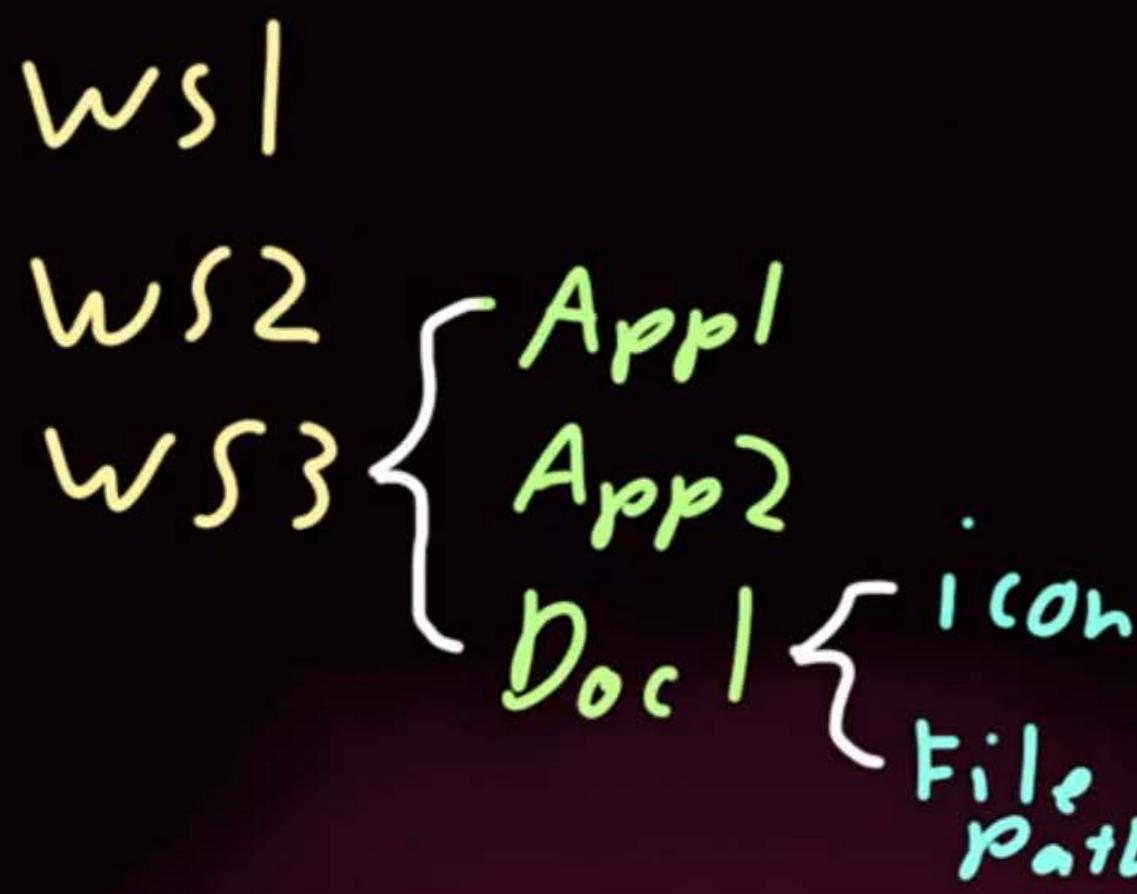


MODEL VIEW CONTROLLER

- Model View Controller aka **MVC** and Model View ViewModel aka **MVVM** are GUI Design Patterns
- They **separate** the raw **data/** functionality from **GUI** and **Connections** between the two
- Qt handles 'Controllers' mostly, so we will make **Model + View**



MODEL FILE PLANNING



- Workspace = Ordered Dictionary
 - { Workspace Name: App Dict }
 - { App Name: List }
 - [iconFile, appFile]
- Ordered Dictionary = Retains order in which originally added!
- Order will be lost later when writing to json file... :(



Code Compare - tp_launcher_model_START.py <-> tp_launcher_model_END.py*

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_START.py

```
1 #!/usr/bin/env python
2
3 from collections import OrderedDict
4 import os
5
6
7 class TP_Launcher_Model:
8     def __init__(self):
9         self._workspaces = OrderedDict()
10
11     ===== WORKSPACES =====
12
13     def add_workspace(self, ws_name):
14         self._workspaces[ws_name] = OrderedDict()
15
16     def get_workspaces(self):
17         return list(self._workspaces.keys()) # Python 3.0+ conve
18
19     def delete_workspace(self, ws_name):
20         del self._workspaces[ws_name]
21
22
23
24 # Copyright (c) 2017 Trevor Payne
25 #
26 # Permission is hereby granted, free of charge, to any person obtaining
27 # a copy of this software and associated documentation files (the "Software"),
28 # in the Software without restriction, including without limitation
29 # to use, copy, modify, merge, publish, distribute, sublicense,
30 # copies of the Software, and to permit persons to whom the Software
31 # is furnished to do so, subject to the following conditions:
32 #
33 # The above copyright notice and this permission notice shall be
34 # included in all copies or substantial portions of the Software.
35 #
36 # THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
```

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_END.py

```
1 #!/usr/bin/env python
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 17 Col 42 Ch 42

Br Pr Ps Ae

MODEL FILE

- Setup Linux/Unix stuff
- import ordered dict
- import os = path manipulation
- workspaces = ordered dict
- we create accessors/mutators =
add, get, delete
- list conversion = Python 3.0+
returns weirdness
- ignore legal stuff



Code Compare - tp_launcher_model_START.py <-> tp_launcher_model-END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_START.py

```
1 #!/usr/bin/env python
2
3 from collections import OrderedDict
4 import os
5
6
7 class TP Launcher Model:
<
```

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model-END.py

```
1 #!/usr/bin/env python
2
3 from collections import OrderedDict, defaultdict
4 import os
5 import platform
6 import subprocess
7 import webbrowser
8
9
10 class TP_Launcher_Model:
11     def __init__(self):
12         self._workspaces = OrderedDict()
13         self._open_doc = defaultdict(lambda: 'open ')
14         self._open_doc['Windows'] = 'start '
15         self._platform = platform.system()
16
17     # ===== WORKSPACES =====
18
19     def add_workspace(self, ws_name):
20         self._workspaces[ws_name] = OrderedDict()
21
22     def get_workspaces(self):
23         return list(self._workspaces.keys()) # Python 3.0+ conve
24
25     def delete_workspace(self, ws_name):
26         del self._workspaces[ws_name]
27
28     # ===== APPS =====
29
30     def get_app_names(self, ws_name):
<
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos |

Ln 3 Col 36 Ch 36

APPS DATA

- Import Changes:

- 1) **defaultdict** = will explain
 - 2) **platform** = tells if you're on Windows, Linux or Unix
 - 3) **subprocess** = launch apps
 - 4) **webbrowser** = open YouTube
(I'm shameless)



Code Compare - tp_launcher_model_START.py <-> tp_launcher_model-END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_START.py

```
1 #!/usr/bin/env python
2
3 from collections import OrderedDict
4 import os
5
6
7 class TP Launcher Model:
```

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model-END.py

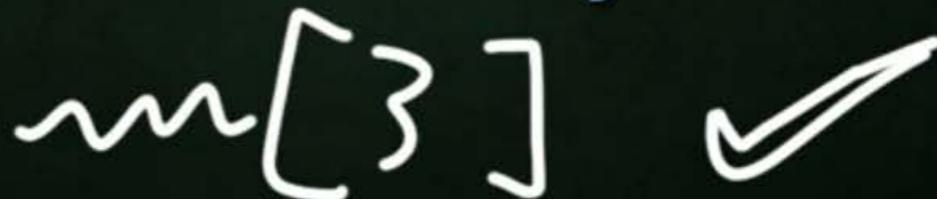
```
1 #!/usr/bin/env python
2
3 from collections import OrderedDict, defaultdict
4 import os
5 import platform
6 import subprocess
7 import webbrowser
8
9
10 class TP_Launcher_Model:
11     def __init__(self):
12         self._workspaces = OrderedDict()
13         self._open_doc = defaultdict(lambda: 'open ')
14         self._open_doc['Windows'] = 'start '
15         self._platform = platform.system()
16
17     # ===== WORKSPACES =====
18
19     def add_workspace(self, ws_name):
20         self._workspaces[ws_name] = OrderedDict()
21
22     def get_workspaces(self):
23         return list(self._workspaces.keys()) # Python 3.0+ conve
24
25     def delete_workspace(self, ws_name):
26         del self._workspaces[ws_name]
27
28     # ===== APPS =====
29
30     def get_app_names(self, ws_name):
```

DEFAULT DICT

- Allows you to set all keys requested to some **default value!**

```
myDict = defaultdict(lambda: 'ham')
print(myDict[34]) # prints 'ham'
print(myDict['food']) # prints 'ham'
myDict[4815162342] = 'lost'
```

```
x = {}          # Regular dictionary  
print(x[34]) ## raises KeyError!!! :(
```



Code Compare - tp_launcher_model_START.py <-> tp_launcher_model_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_START.py

```
1 #!/usr/bin/env python
2
3 from collections import OrderedDict
4 import os
5
6
7 class TP Launcher Model:
<
8
9
10 D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_END.py
1 #!/usr/bin/env python
2
3 from collections import OrderedDict, defaultdict
4 import os
5 import platform
6 import subprocess
7 import webbrowser
8
9
10 class TP_Launcher_Model:
11     def __init__(self):
12         self._workspaces = OrderedDict()
13         self._open_doc = defaultdict(lambda: 'open')
14         self._open_doc['Windows'] = 'start'
15         self._platform = platform.system()
16
17     # ===== WORKSPACES =====
18
19     def add_workspace(self, ws_name):
20         self._workspaces[ws_name] = OrderedDict()
21
22     def get_workspaces(self):
23         return list(self._workspaces.keys()) # Python 3.0+ conve
24
25     def delete_workspace(self, ws_name):
26         del self._workspaces[ws_name]
27
28     # ===== APPS =====
29
30     def get_app_names(self, ws_name):
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 13 Col 51 Ch 51

APP DATA (CONT)

- default to 'open' = Linux / Unix terminal command to open file
- 'start' = Windows



Code Compare - tp_launcher_model_START.py <-> tp_launcher_model_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_START.py

```
8 def __init__(self):
9     self._workspaces = OrderedDict()
10
11 # ===== WORKSPACES =====
12
13 def add_workspace(self, ws_name):
14     self._workspaces[ws_name] = OrderedDict()
15
16
17 # ===== APPS =====
18
19 def get_workspaces(self):
20     return list(self._workspaces.keys()) # Python 3.0+ convenience
21
22 def delete_workspace(self, ws_name):
23     del self._workspaces[ws_name]
24
25
26 # ===== APPS =====
27
28 def get_app_names(self, ws_name):
29     return self._workspaces[ws_name].keys()
30
31 def get_app_icon(self, ws_name, app_name):
32     return self._workspaces[ws_name][app_name][1]
33
34 def add_app(self, ws_name, app_path, icon_path):
35     app_name = os.path.splitext(os.path.basename(app_path))[0]
36     self._workspaces[ws_name][app_name] = [app_path, icon_path]
37
38
39 def delete_app(self, ws_name, app_name):
40     del self._workspaces[ws_name][app_name]
41
42
43 def reorder_apps(self, ws_name, app_list):
44     if self._workspaces[ws_name].keys() != app_list:
45         temp = OrderedDict()
46         for name in app_list:
47             temp[name] = self._workspaces[ws_name][name]
48         self._workspaces[ws_name] = temp
49
50
51 def run_app(self, ws_name, app_name):
52     file = self._workspaces[ws_name][app_name][0]
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 31 Col 44 Ch 44

GET, ADD, DEL APPS

- get app names = return a list of app names for our App Listwidget
- get app icon = get icon filepath stored
- add app = store app file and icon file paths based on workspace
- delete app = ... you can guess... :p
- No checking for invalid entry as GUI doesn't lie



Code Compare - tp_launcher_model_START.py <-> tp_launcher_model_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

tp_launcher_model_END.py

D:\TPX\PTD_01\006_App_Model\Code\tp_launcher_model_START.py

```
8     def __init__(self):
9         self._workspaces = OrderedDict()
10
11     # ===== WORKSPACES =====
12
13     def add_workspace(self, ws_name):
14         self._workspaces[ws_name] = OrderedDict()
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37         app_name = os.path.splitext(os.path.basename(app_path))
38         self._workspaces[ws_name][app_name] = [app_path, icon_pa
39
40     def delete_app(self, ws_name, app_name):
41         del self._workspaces[ws_name][app_name]
42
43     def reorder_apps(self, ws_name, app_list):
44         if self._workspaces[ws_name].keys() != app_list:
45             temp = OrderedDict()
46             for name in app_list:
47                 temp[name] = self._workspaces[ws_name][name]
48             self._workspaces[ws_name] = temp
49
50     def run_app(self, ws_name, app_name):
51         _file = self._workspaces[ws_name][app_name][0]
52         if os.path.exists(_file):
53             try:
54                 subprocess.Popen(_file)
55             except:
56                 os.system(self._open_doc[self._platform] + _file
57         else:
58             raise ValueError('Exe file no longer exists')
59
60     def run_youtube(self):
61         webbrowser.open('http://www.youtube.com/TPayneExperience
62
63
64
65 # Copyright (c) 2017 Trevor Payne
66 #
```

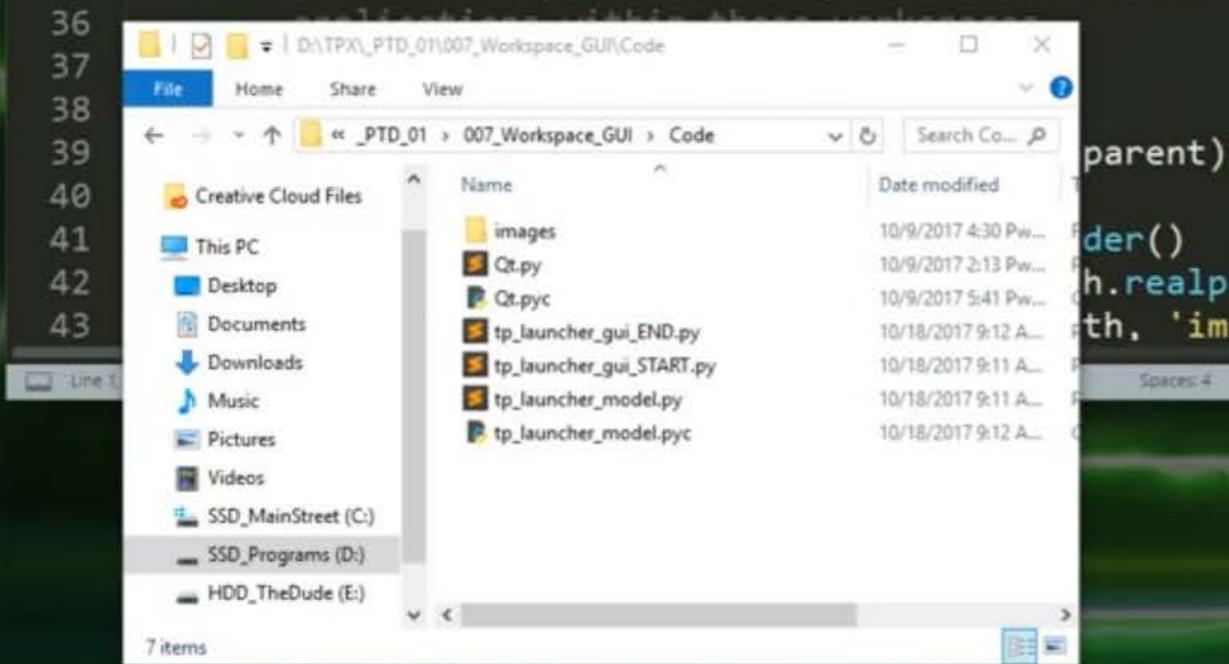
REORDER & RUN APPS

- Reorder apps = handle if order has changed
 - **run app** = attempts to launch application or open file
 - **subprocess** = launch app on separate thread, allows tool to run uninterrupted
 - if that fails, **open** the file
 - run YouTube = implemented in **chapter 16** with Tray

(App?) → (Open?)

21. Instantiating Model

```
18  
19 #!/usr/bin/env python  
20  
21 __author__ = 'Trevor Payne'  
22 __version__ = '1.0'  
23  
24 import os  
25 import sys  
26 import Qt  
27 from Qt import QtWidgets, QtCore, QtGui  
28  
29 QT_VER = Qt.__binding__  
30 PY_VER = sys.version[:3]  
31  
32 class TP_Launcher_GUI(QtWidgets.QWidget):  
33     '''The goal of this tool is to create a GUI that  
34         allows the user to quickly create, select and  
35         delete workspaces and add, remove and launch  
36         workspaces'''  
37  
38  
39  
40  
41  
42  
43
```



INSTANTIATING MODEL

- I prefer 'GUI' vs 'view'...
- import TP_Launcher_Model
- instance in constructor, will hold all of our data
- call to '_testing()' for temp data



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_START.py

```
69
70     v_layout.addWidget(self._workspace_cb)
71     h_layout.addWidget(workspace_gb)
72     h_layout.addStretch()
73     return h_layout
74
75 def _setup_apps(self):
76     self._app_lw = QtWidgets.QListWidget()
77     self._app_lw.setAlternatingRowColors(True)
78     flag = QtWidgets.QAbstractItemView.InternalMove
79
80
81
82     def _setup_connections(self):
83         ws = self._workspace_changed
84         self._workspace_cb.currentIndexChanged.connect(ws)
85
86         #----- DISPLAY -----
87
88         def _populate_workspaces(self):
89             self._workspace_cb.clear()
90             self._workspace_cb.addItem(self._tp_launcher.get_workspaces())
91
92             #----- WORKSPACE + APP -----
93
94             def get_workspace(self):
95                 ''' Returns the currently selected workspace from combobox '''
96
97
98
99
100
101
102
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 89 Col 34 Ch 34

Br Pr Ps Ae

CONNECT WORKSPACE

- 'setup_connections' = will hold (most) all of our **connection between widgets and functions**
- Much better than scattered connections



D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_START.py

```
69     v_layout.addWidget(self._workspace_cb)
70     h_layout.addWidget(workspace_gb)
71     h_layout.addStretch()
72     return h_layout
73
74
75     def _setup_apps(self):
76         self._app_lw = QtWidgets.QListWidget()
77         self._app_lw.setAlternatingRowColors(True)
78         flag = QtWidgets.QAbstractItemView.InternalMove
79
80
81     def _setup_apps(self):
82         self._app_lw = QtWidgets.QListWidget()
83         self._app_lw.setAlternatingRowColors(True)
84         flag = QtWidgets.QAbstractItemView.InternalMove
85         self._app_lw.setDragDropMode(flag)
86         return self._app_lw
87
88
89     def _setup_connections(self):
90         ws = self._workspace_changed
91         self._workspace_cb.currentIndexChanged.connect(ws)
92
93         #----- DISPLAY -----
94
95     def _populate_workspaces(self):
96         self._workspace_cb.clear()
97         self._workspace_cb.addItem(self._tp_launcher.get_works
98
99         #----- WORKSPACE + APP -----
100
101    def get_workspace(self):
102        ''' Returns the currently selection workspace from comb
```

CONNECT WORKSPACE

- 'setup_connections' = will hold (most) all of our **connection between widgets and functions**
 - Much better than scattered connections



```
69     v_layout.addWidget(self._workspace_cb)
70     h_layout.addWidget(workspace_gb)
71     h_layout.addStretch()
72     return h_layout
73
74
75     def _setup_apps(self):
76         self._app_lw = QtWidgets.QListWidget()
77         self._app_lw.setAlternatingRowColors(True)
78         flag = QtWidgets.QAbstractItemView.InternalMove
79
80
81     def _setup_connections(self):
82         ws = self._workspace_changed
83         self._workspace_cb.currentIndexChanged.connect(ws)
84
85         #===== DISPLAY =====
86
87         def _populate_workspaces(self):
88             self._workspace_cb.clear()
89             self._workspace_cb.addItems(self._tp_launcher.get_workspaces())
90
91         #===== WORKSPACE + APP =====
92
93         def get_workspace(self):
94             ''' Returns the currently selected workspace from combobox '''
95             return str(self._workspace_cb.currentText())
96
97         def _workspace_changed(self):
98             print('ham')
99
100        def _testing(self):
101            self._tp_launcher.add_workspace('My_first_workspace')
102            self._tp_launcher.add_workspace('My_second_workspace')
103
104            self._populate_workspaces()
```

POPULATE WORKSPACES

- Clears and repopulates the workspace combobox
 - For me, ‘**populate**’ is a good term for when items added to widget
 - ‘**.addItems()**’ is more efficient than loop with ‘**.addItem()**’, but gives less control



23. Populating Workspaces

```

File Help
New Code Comparison Refresh
D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_START.py
69
70     v_layout.addWidget(self._workspace_cb)
71     h_layout.addWidget(workspace_gb)
72     h_layout.addStretch()
73     return h_layout
74
75 def _setup_apps(self):
76     self._app_lw = QtWidgets.QListWidget()
77     self._app_lw.setAlternatingRowColors(True)
78     flag = QtWidgets.QAbstractItemView.InternalMove
<
D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_END.py
89
90     def _setup_connections(self):
91         ws = self._workspace_changed
92         self._workspace_cb.currentIndexChanged.connect(ws)
93
94         #----- DISPLAY -----
95
96         def _populate_workspaces(self):
97             self._workspace_cb.clear()
98             self._workspace_cb.addItems(self._tp_launcher.get_works
99
100        #----- WORKSPACE + APP -----
101
102        def get_workspace(self):
103            ''' Returns the currently selection workspace from comb
104            return str(self._workspace_cb.currentText())
105
106        def _workspace_changed(self):
107            print('ham')
108
109        def _testing(self):
110            self._tp_launcher.add_workspace('My_first_workspace')
111            self._tp_launcher.add_workspace('My_second_workspace')
112            self._populate_workspaces()
113
114 if __name__ == '__main__':
115     print(PY_VER)

```

POPULATE WORKSPACES

- Clears and repopulates the workspace combobox
- For me, 'populate' is a good term for when items added to widget
- '.addItems()' is more efficient than loop with '.addItem()', but gives less control



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_START.py

```
69
70     v_layout.addWidget(self._workspace_cb)
71     h_layout.addWidget(workspace_gb)
72     h_layout.addStretch()
73     return h_layout
74
75 def _setup_apps(self):
76     self._app_lw = QtWidgets.QListWidget()
77     self._app_lw.setAlternatingRowColors(True)
78     flag = QtWidgets.QAbstractItemView.InternalMove
79
80
81
82
83
84
85
86
87
88
89     def _setup_connections(self):
90         ws = self._workspace_changed
91         self._workspace_cb.currentIndexChanged.connect(ws)
92
93         #===== DISPLAY =====
94
95         def _populate_workspaces(self):
96             self._workspace_cb.clear()
97             self._workspace_cb.addItems(self._tp_launcher.get_works
98
99         #===== WORKSPACE + APP =====
100
101     def get_workspace(self):
102         ''' Returns the currently selection workspace from comb
103         return str(self._workspace_cb.currentText())
104
105     def _workspace_changed(self):
106         print('ham')
107
108     def _testing(self):
109         self._tp_launcher.add_workspace('My_first_workspace')
110         self._tp_launcher.add_workspace('My_second_workspace')
111         self._populate_workspaces()
112
113 if __name__ == '__main__':
114     print(PY_VER)
```

Files have changes: Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 99 Col 32 Ch 32

Br Pt Ps Ae

TEST WORKSPACES

- `getWorkspace` = returns a string for currently selected workspace
- `workspaceChanged()` = temporarily output ham to ensure everything working
- TEST!



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

22. Connect Workspace

```
D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_START.py
38 def __init__(self, parent=None):
39     super(TP_Launcher_GUI, self).__init__(parent)
40
41     self._icons = QtWidgets.QFileIconProvider()
42     self._my_path = os.path.dirname(os.path.realpath(__file__))
43     images_path = os.path.join(self._my_path, 'images')
44     full_path = os.path.join(images_path, 'TPayne_Launcher.png')
45     self._tpl_icon = QtGui.QIcon(full_path)
46
47     self._setup()
48
D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_END.py
43     self._icons = QtWidgets.QFileIconProvider()
44     self._my_path = os.path.dirname(os.path.realpath(__file__))
45     images_path = os.path.join(self._my_path, 'images')
46     full_path = os.path.join(images_path, 'TPayne_Launcher.png')
47     self._tpl_icon = QtGui.QIcon(full_path)
48
49     self._tp_launcher = tp_launcher_model.TP_Launcher_Model()
50
51     self._setup()
52     self._testing()
53
54     #----- SETUP UI -----
55
56     def _setup(self):
57         v_layout = QtWidgets.QVBoxLayout(self)
58
59         v_layout.addLayout(self._setup_header())
60         v_layout.addWidget(self._setup_apps())
61
62         self._setup_connections()
63
64         self.setWindowTitle('TPayne\'s Launcher ' + __version__)
65         self.setWindowIcon(self._tpl_icon)
66         flag = QtCore.Qt.WindowCloseButtonHint
67         self.setWindowFlags(QtCore.Qt.Window | flag)
68         self.resize(190, 200)
69
69
```

CONNECT WORKSPACE

- 'setup_connections' = will hold (most) all of our connection between widgets and functions
- Much better than scattered connections



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

tp_launcher_gui_END.py x

D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_START.py

```
69
70         v_layout.addWidget(self._workspace_cb)
71         h_layout.addWidget(workspace_gb)
72         h_layout.addStretch()
73         return h_layout
74
75     def _setup_apps(self):
76         self._app_lw = QtWidgets.QListWidget()
77         self._app_lw.setAlternatingRowColors(True)
78         flag = QtWidgets.QAbstractItemView.InternalMove
79
80
81     def _setup_connections(self):
82         ws = self._workspace_changed
83         self._workspace_cb.currentIndexChanged.connect(ws)
84
85         #===== DISPLAY =====
86
87         def _populate_workspaces(self):
88             self._workspace_cb.clear()
89             self._workspace_cb.addItems(self._tp_launcher.get_workspaces())
90
91         #===== WORKSPACE + APP =====
92
93         def get_workspace(self):
94             ''' Returns the currently selection workspace from combobox '''
95             return str(self._workspace_cb.currentText())
96
97         def _workspace_changed(self):
98             print('ham')
99
100        def _testing(self):
101            self._tp_launcher.add_workspace('My_first_workspace')
102            self._tp_launcher.add_workspace('My_second_workspace')
103            self._populate_workspaces()
104
105
106    if __name__ == '__main__':
107        print(PY_VER)
```

POPULATE WORKSPACES

- Clears and repopulates the workspace combobox
 - For me, 'populate' is a good term for when items added to widget
 - '.addItems()' is more efficient than loop with '.addItem()', but gives less control



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\007_Workspace_GUI\Code\tp_launcher_gui_START.py

```
69
70     v_layout.addWidget(self._workspace_cb)
71     h_layout.addWidget(workspace_gb)
72     h_layout.addStretch()
73     return h_layout
74
75 def _setup_apps(self):
76     self._app_lw = QtWidgets.QListWidget()
77     self._app_lw.setAlternatingRowColors(True)
78     flag = QtWidgets.QAbstractItemView.InternalMove
79
80
81
82
83
84
85
86
87
88
89     def _setup_connections(self):
90         ws = self._workspace_changed
91         self._workspace_cb.currentIndexChanged.connect(ws)
92
93         #===== DISPLAY =====
94
95         def _populate_workspaces(self):
96             self._workspace_cb.clear()
97             self._workspace_cb.addItems(self._tp_launcher.get_works
98
99         #===== WORKSPACE + APP =====
100
101     def get_workspace(self):
102         ''' Returns the currently selection workspace from comb
103         return str(self._workspace_cb.currentText())
104
105     def _workspace_changed(self):
106         print('ham')
107
108     def _testing(self):
109         self._tp_launcher.add_workspace('My_first_workspace')
110         self._tp_launcher.add_workspace('My_second_workspace')
111         self._populate_workspaces()
112
113 if __name__ == '__main__':
114     print(PY_VER)
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 108 Col 24 Ch 24

Windows Taskbar icons: File Explorer, File Manager, Mail, Photos, OneDrive, Microsoft Edge, Adobe Photoshop, Adobe After Effects, Adobe Premiere Pro, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Project, Microsoft Visio, Microsoft Access, Microsoft Publisher, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Project, Microsoft Visio, Microsoft Access, Microsoft Publisher.

TEST WORKSPACES

- `getWorkspace` = returns a string for currently selected workspace
- `workspaceChanged()` = temporarily output ham to ensure everything working
- TEST!



WORKSPACE CHANGED

- What do we expect when workspace combobox changed?
- The apps to update accordingly!



```
model
ng_
on[:3]
GUI(Qt
this
user
kspace
is wit
elf,
launcher_GUI, self).__init__
= QtWidgets.QFileIconProv
th = os.path.dirname(os.pa
= os.path.join(self, my_p
```

Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\008_App_GUI\Code\tp_launcher_gui_START.py

```
80     return h_layout
81
82     def _setup_apps(self):
83         self._app_lw = QtWidgets.QListWidget()
84         self._app_lw.setAlternatingRowColors(True)
85         flag = QtWidgets.QAbstractItemView.InternalMove
86         self._app_lw.setDragDropMode(flag)
87         return self._app_lw
88
89     def _setup_connections(self):
90         ws = self._workspace_changed
91         self._workspace_cb.currentIndexChanged.connect(ws)
92
93         self._app_lw.itemClicked.connect(self._run_app) ## TEMP
94
95         #===== DISPLAY =====
96
97         def _populate_workspaces(self):
98             self._workspace_cb.clear()
99             self._workspace_cb.addItems(self._tp_launcher.get_workspaces())
100            self._populate_apps()
101
102        def populate_apps(self):
103            self._app_lw.setListWidget(self._workspace_cb)
104            self._app_lw.setParent(self._workspace_cb)
105            self._app_lw.setAlternatingRowColors(True)
106            self._app_lw.setDragDropMode(QtWidgets.QAbstractItemView.InternalMove)
107            self._app_lw.itemClicked.connect(self._run_app)
```

APP GUI

26 Populate Apps

POPULATE APPS

- Connect app list widget to 'run_app()'
- Add 'populate_apps()' to populate workspaces
- Populate apps = clear, create individual items with icons if icon path provided, and name
- QListWidgetItem = set parent as first arg removes need to setListWidget later

Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\008_App_GUI\Code\tp_launcher_gui_START.py

```
85     flag = QtWidgets.QAbstractItemView.InternalMove
86     self._app_lw.setDragDropMode(flag)
87     return self._app_lw
88
89     def _setup_connections(self):
90         ws = self._workspace_changed
91         self._workspace_cb.currentIndexChanged.connect(ws)
92
93     ===== DISPLAY =====
94
95     def _populate_workspaces(self):
96
97         def _populate_workspaces(self):
98             self._workspace_cb.clear()
99             self._workspace_cb.addItems(self._tp_launcher.get_works
100            self._populate_apps()
101
102            def _populate_apps(self):
103                self._app_lw.clear()
104                ws = self.get_workspace()
105                for app_name in self._tp_launcher.get_app_names(ws):
106                    item = QtWidgets.QListWidgetItem(self._app_lw)
107                    icon = self._tp_launcher.get_app_icon(ws, app_name)
108                    if icon:
109                        item.setIcon(QtGui.QIcon(icon))
110                    else:
111                        item.setIcon(self._icons.icon(self._icons.File))
112                    item.setText(app_name)
113
114    ===== WORKSPACE + APP =====
115
116    def get_workspace(self):
117        ''' Returns the currently selected workspace from comb
118        return str(self._workspace_cb.currentText())
119
120    def _workspace_changed(self):
121        self._populate_apps()
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 112 Col 35 Ch 35

Br Pr Ps Ae

BRANCHING THOUGHTS

- If / Elif / Else statements should be avoided if possible
- leads to more places things can go wrong
- branching logic is harder to track



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\008_App_GUI\Code\tp_launcher_gui_START.py

```
90     ws = self._workspace_changed
91     self._workspace_cb.currentIndexChanged.connect(ws)
92
93     #----- DISPLAY -----
94
95     def _populate_workspaces(self):
96         self._workspace_cb.clear()
97         self._workspace_cb.addItems(self._tp_launcher.get_workspaces())
98
99     #----- WORKSPACE + APP -----
100
101
D:\TPX\PTD_01\008_App_GUI\Code\tp_launcher_gui-END.py
```

```
105     for app_name in self._tp_launcher.get_app_names(ws):
106         item = QtWidgets.QListWidgetItem(self._app_lw)
107         icon = self._tp_launcher.get_app_icon(ws, app_name)
108         if icon:
109             item.setIcon(QtGui.QIcon(icon))
110         else:
111             item.setIcon(self._icons.icon(self._icons.File))
112         item.setText(app_name)
113
114     #----- WORKSPACE + APP -----
115
116     def get_workspace(self):
117         ''' Returns the currently selected workspace from combobox '''
118         return str(self._workspace_cb.currentText())
119
120     def _workspace_changed(self):
121         self._populate_apps()
122
123     def _run_app(self, item):
124         item.setSelected(False)
125         self._tp_launcher.run_app(self.get_workspace(), str(item.text()))
126
127     def _testing(self):
128         ws1 = 'My_first_workspace'
129         ws2 = 'My_second_workspace'
130         ## CHANGE TO YOUR COMPUTER PATHS
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 121 Col 28 Ch 28

Br Pr Ps Ae

RUN APPS

- replace 'print('ham')' with **populate apps()**
- Run App = **deselect item** and **launch app or open file**
 - No need to item to stay **selected**
 - Tool should **stay open** after app/file opened



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

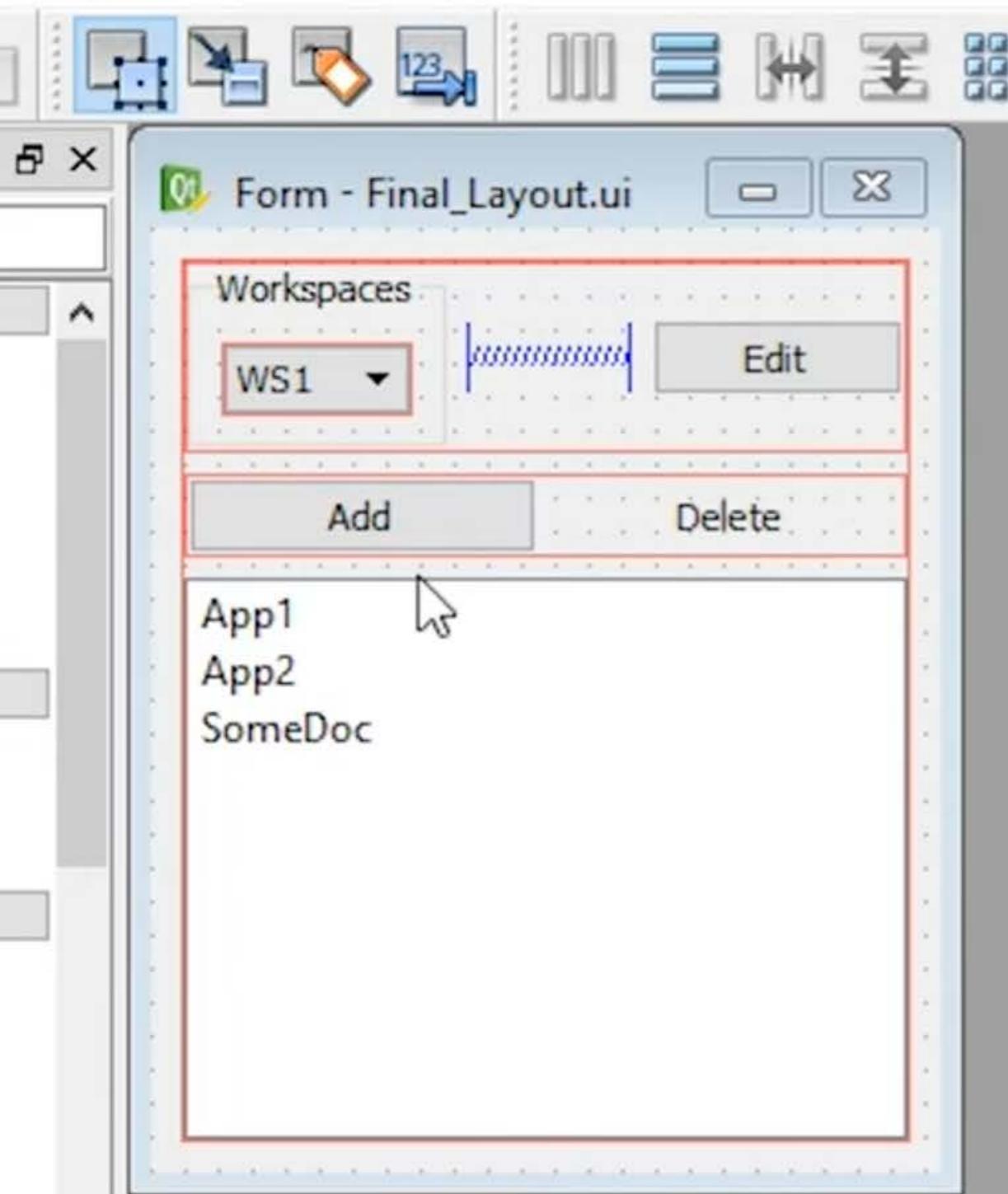
D:\TPX_PTD_01\008_App_GUI\Code\tp_launcher_gui_START.py

```
97         self._workspace_cb.addItems(self._tp_launcher.get_workspaces())
98
99     #===== WORKSPACE + APP =====
100
101    def get_workspace(self):
102        ''' Returns the currently selected workspace from combobox '''
103        return str(self._workspace_cb.currentText())
104
105    def _workspace_changed(self):
106        print('ham')
107
D:\TPX\_PTD_01\008_App_GUI\Code\tp_launcher_gui-END.py
123    def _run_app(self, item):
124        item.setSelected(False)
125        self._tp_launcher.run_app(self.get_workspace(), str(item))
126
127    def _testing(self):
128        ws1 = 'My_first_workspace'
129        ws2 = 'My_second_workspace'
130        ## CHANGE TO YOUR COMPUTER PATHS
131        app1 = r'C:\Program Files (x86)\Google\Chrome\Application'
132        icon1 = r'C:\Program Files (x86)\Google\Chrome\Application\chrome.exe'
133        app2 = r'D:\Program Files (x86)\Mozilla Firefox\firefox.exe'
134        self._tp_launcher.add_workspace(ws1)
135        self._tp_launcher.add_app(ws1, app1, icon1)
136        self._tp_launcher.add_app(ws1, app2, None)
137        self._tp_launcher.add_workspace(ws2)
138        self._tp_launcher.add_app(ws2, app2, None)
139        self._populate_workspaces()
140
141
142 if __name__ == '__main__':
143     print(PY_VER)
144     print(QT_VER)
145     app = QtWidgets.QApplication(sys.argv)
146     ex = TP_Launcher_GUI()
147     ex.show()
148     sys.exit(app.exec_())
```

TESTING APPS

- in `_testing()`:
 - add workspaces
 - then add apps to those workspaces
 - My sample paths are to Firefox
and Chrome
 - TEST!





EDIT BUTTON

- GUI currently **missing** Edit, Add, Delete buttons from original UI mockup
- Add '**setup_edit_options**' in setup function
- Create **simple edit button** in '**setup_header**' function



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\009>Edit_Button_GUI\Code\tp_launcher_gui_START.py

```
73     v_layout = QtWidgets.QVBoxLayout(workspace_gb)
74
75     self._workspace_cb = QtWidgets.QComboBox()
76
77     v_layout.addWidget(self._workspace_cb)
78     h_layout.addWidget(workspace_gb)
79     h_layout.addStretch()
80
81     return h_layout
82
82 def _setup_apps(self):
83     self._app_lw = QtWidgets.QListWidget()
84     self._app_lw.setAlternatingRowColors(True)
85     flag = QtWidgets.QAbstractItemView.InternalMove
86     self._app_lw.setDragDropMode(flag)
87
88     return self._app_lw
89
89 def _setup_connections(self):
90     ws = self._workspace_changed
91     self._workspace_gb.currentIndexChanged.connect(ws)
92
93
94
95
96
97
98
99
100
101
102
```

D:\TPX\PTD_01\009>Edit_Button_GUI\Code\tp_launcher_gui_END.py

```
85     return h_layout
86
87 def setup_edit_options(self):
88     add_del_l = QtWidgets.QHBoxLayout()
89
90     self._add_btn = QtWidgets.QPushButton('Add')
91     self._add_btn.setMaximumSize(QtCore.QSize(60, 23))
92     add_menu = QtWidgets.QMenu(self)
93     add_menu.addAction('Workspace', self._print_ham)
94     add_menu.addAction('App or File', self._print_ham)
95     self._add_btn.setMenu(add_menu)
96
97     self._del_btn = QtWidgets.QPushButton()
98     self._del_btn.setText('Delete')
99     self._del_btn.setAcceptDrops(True)
100    self._del_btn.setIcon(self._icons.icon(self._icons.Trash))
101    self._del_btn.setIconSize(QtCore.QSize(32, 32))
102    self._del_btn.setFlat(True)
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 87 Col 9 Ch 9

Br Pr Ps Ae

EDIT OPTIONS

'setup_edit_options()'

- Create **add button**, then **QMenu** for our menu popup!
- QMenu will hold add '**workspace**' and '**app or file**' options
 - Connected to '**print_ham()**' **temporarily**
- **delete button** set to be **flat**, **accept drops**, and have **32x32 trash icon**
- TEST!!!



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

tp_launcher_gui...ncer_gui_END.py

D:\TPX\PTD_01\010>Edit_Toggle\Code\tp_launcher_gui_START.py

```
38     applications within those workspaces.  
39  
40     def __init__(self, parent=None):  
41         super(TP_Launcher_GUI, self).__init__(parent)  
42  
43         self._icons = QtWidgets.QFileIconProvider()  
44         self._my_path = os.path.dirname(os.path.realpath(__file__)).  
45         images_path = os.path.join(self._my_path, 'images')  
46         full_path = os.path.join(images_path, 'TPayne_Launcher.  
47         self._tpl_icon = QtGui.QIcon(full_path)  
  
D:\TPX\PTD_01\010>Edit_Toggle\Code\tp_launcher_gui_END.py
```

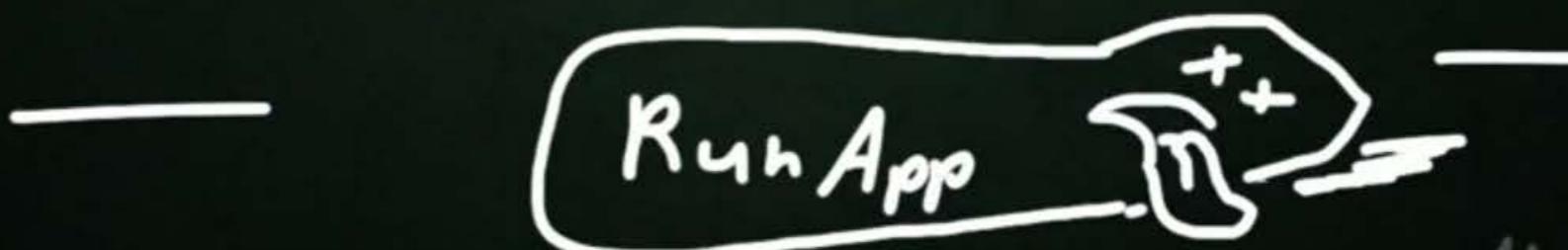
```
43             self._icons = QtWidgets.QFileIconProvider()  
44             self._my_path = os.path.dirname(os.path.realpath(__file__)).  
45             images_path = os.path.join(self._my_path, 'images')  
46             full_path = os.path.join(images_path, 'TPayne_Launcher.  
47             self._tpl_icon = QtGui.QIcon(full_path)  
48  
49             self._tp_launcher = tp_launcher_model.TP_Launcher_Model()  
50  
51             self._edit_op = {  
52                 True: self._edit_on,  
53                 False: self._edit_off  
54             }  
55  
56             self._setup()  
57             self._testing()  
58             self._edit_toggle()  
59  
60             ===== SETUP UI =====  
61  
62             def _setup(self):  
63                 v_layout = QtWidgets.QVBoxLayout(self)  
64  
65                 v_layout.addLayout(self._setup_header())  
66                 v_layout.addLayout(self._setup_edit_options())  
67                 v_layout.addWidget(self._setup_apps())  
68  
69                 self._setup_connections()
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 147 Col 30 Ch 30

Br Pr Ps Ae

EDIT BUTTON CHECKABLE

- QPushButton has 'checkable' feature!
- Acts like **toggleable button**
- Create '**edit_op**' dict to hold logic for which function to call
- Add **edit toggle** call to **setup** stuff
- In setup connections, **kill app_lw connection** and **add edit button connection**



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\010>Edit_Toggle\Code\tp_launcher_gui_START.py

```
145
146     def _workspace_changed(self):
147         self._populate_apps()
148
149     def _run_app(self, item):
150         item.setSelected(False)
151         self._tp_launcher.run_app(self.get_workspace(), str(item))
152
153     def _testing(self):
154         wsl = 'My_first_workspace'
155         ws2 = 'My_second_workspace'
156         ## CHANGE TO YOUR COMPUTER PATHS
157         appl = r'C:\Program Files (x86)\Google\Chrome\Application'
158         icon1 = r'C:\Program Files (x86)\Google\Chrome\Application\chrome.exe'
159         app2 = r'D:\Program Files (x86)\Mozilla Firefox\firefox.exe'
160         self._tp_launcher.add_workspace(wsl)
161         self._tp_launcher.add_app(wsl, appl, icon1)
162         self._tp_launcher.add_app(wsl, app2, None)
163         self._tp_launcher.add_workspace(ws2)
```

D:\TPX\PTD_01\010>Edit_Toggle\Code\tp_launcher_gui_END.py

```
151
152     def _workspace_changed(self):
153         self._populate_apps()
154
155     def _run_app(self, item):
156         item.setSelected(False)
157         self._tp_launcher.run_app(self.get_workspace(), str(item))
158
159     ===== EDIT MODE =====
160
161     def _edit_toggle(self):
162         self._edit_op[self._edit_btn.isChecked()]()
163         self._app_lw.setDragEnabled(self._edit_btn.isChecked())
164         self._add_btn.setVisible(self._edit_btn.isChecked())
165         self._del_btn.setVisible(self._edit_btn.isChecked())
166
167     def _edit_on(self):
168         self._app_lw.itemClicked.disconnect(self._run_app)
```

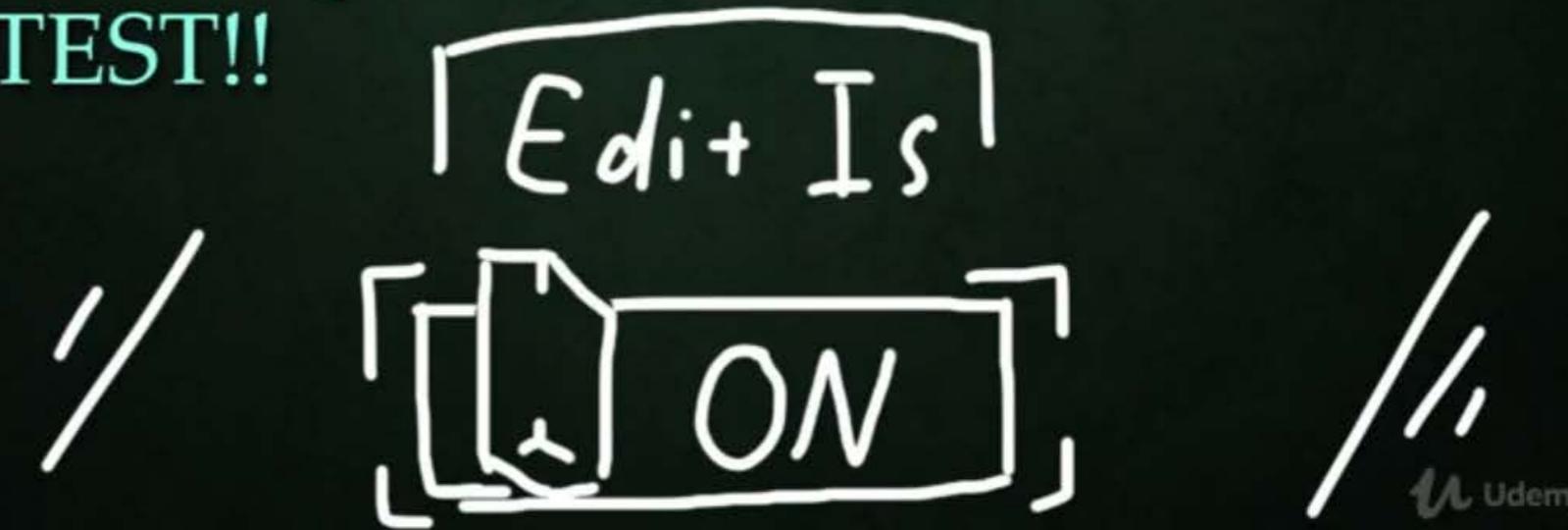
Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 159 Col 56 Ch 56

Br Pr Ps Ae

EDIT FUNCTIONS

'edit_toggle()' called when edit button clicked:

- Call `edit_op` function below
- `app_lw` items set if **draggable**
- set **add/delete** button **visibility**
- `edit_on/off` = set if **can run apps** and **update** edit button **text**
- TEST!!



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\011_Add_App_Workspace\Code\tp_launcher_gui_START.py

```
15 copy distinct settings and files to the clients  
16 machines and a whole bunch of other cool stuff.  
17 ''  
18  
19 #!/usr/bin/env python  
20  
21 __author__ = 'Trevor Payne'  
22 __version__ = '1.0'  
23  
24 import os  
25 import sys  
26  
27 import Qt  
28 from Qt import QtWidgets, QtCore, QtGui  
29 import tp_launcher_model  
30  
31 QT_VER = Qt.__binding__  
32 PY_VER = sys.version[:3]  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
409  
410  
411  
412  
413  
414  
415  
416  
417  
418  
419  
419  
420  
421  
422  
423  
424  
425  
426  
427  
428  
429  
429  
430  
431  
432  
433  
434  
435  
436  
437  
438  
439  
439  
440  
441  
442  
443  
444  
445  
446  
447  
448  
449  
449  
450  
451  
452  
453  
454  
455  
456  
457  
458  
459  
459  
460  
461  
462  
463  
464  
465  
466  
467  
468  
469  
469  
470  
471  
472  
473  
474  
475  
476  
477  
478  
479  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
549  
550  
551  
552  
553  
554  
555  
556  
557  
558  
559  
559  
560  
561  
562  
563  
564  
565  
566  
567  
568  
569  
569  
570  
571  
572  
573  
574  
575  
576  
577  
578  
579  
579  
580  
581  
582  
583  
584  
585  
586  
587  
588  
589  
589  
590  
591  
592  
593  
594  
595  
596  
597  
598  
599  
599  
600  
601  
602  
603  
604  
605  
606  
607  
608  
609  
609  
610  
611  
612  
613  
614  
615  
616  
617  
618  
619  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
629  
630  
631  
632  
633  
634  
635  
636  
637  
638  
639  
639  
640  
641  
642  
643  
644  
645  
646  
647  
648  
649  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
679  
680  
681  
682  
683  
684  
685  
686  
687  
688  
689  
689  
690  
691  
692  
693  
694  
695  
696  
697  
698  
698  
699  
700  
701  
702  
703  
704  
705  
706  
707  
708  
709  
709  
710  
711  
712  
713  
714  
715  
716  
717  
718  
719  
719  
720  
721  
722  
723  
724  
725  
726  
727  
728  
729  
729  
730  
731  
732  
733  
734  
735  
736  
737  
738  
739  
739  
740  
741  
742  
743  
744  
745  
746  
747  
748  
749  
749  
750  
751  
752  
753  
754  
755  
756  
757  
758  
759  
759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
769  
770  
771  
772  
773  
774  
775  
776  
777  
778  
779  
779  
780  
781  
782  
783  
784  
785  
786  
787  
788  
789  
789  
790  
791  
792  
793  
794  
795  
796  
797  
798  
798  
799  
800  
801  
802  
803  
804  
805  
806  
807  
808  
809  
809  
810  
811  
812  
813  
814  
815  
816  
817  
818  
819  
819  
820  
821  
822  
823  
824  
825  
826  
827  
828  
829  
829  
830  
831  
832  
833  
834  
835  
836  
837  
838  
839  
839  
840  
841  
842  
843  
844  
845  
846  
847  
848  
849  
849  
850  
851  
852  
853  
854  
855  
856  
857  
858  
859  
859  
860  
861  
862  
863  
864  
865  
866  
867  
868  
869  
869  
870  
871  
872  
873  
874  
875  
876  
877  
878  
879  
879  
880  
881  
882  
883  
884  
885  
886  
887  
888  
889  
889  
890  
891  
892  
893  
894  
895  
896  
897  
898  
898  
899  
900  
901  
902  
903  
904  
905  
906  
907  
908  
909  
909  
910  
911  
912  
913  
914  
915  
916  
917  
918  
919  
919  
920  
921  
922  
923  
924  
925  
926  
927  
928  
929  
929  
930  
931  
932  
933  
934  
935  
936  
937  
938  
939  
939  
940  
941  
942  
943  
944  
945  
946  
947  
948  
949  
949  
950  
951  
952  
953  
954  
955  
956  
957  
958  
959  
959  
960  
961  
962  
963  
964  
965  
966  
967  
968  
969  
969  
970  
971  
972  
973  
974  
975  
976  
977  
978  
979  
979  
980  
981  
982  
983  
984  
985  
986  
987  
988  
989  
989  
990  
991  
992  
993  
994  
995  
996  
997  
998  
998  
999  
999  
1000  
1000
```

ADDING AND PYQT4

- import defaultdict
- app instructions bool = show instructions once to user in message box
- File dialog dictionary because PyQt4's dialogs different than PySide and PyQt5
- Replace print ham with functions
- dis/connect workspace signal to prevent empty value passed to model file dictionary

Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

tp_launcher_gui_END.py

```
D:\TPX\PTD_01\011_Add_App_Workspace\Code\tp_launcher_gui_START.py
163     self._app_lw.setDragEnabled(self._edit_btn.isChecked())
164     self._add_btn.setVisible(self._edit_btn.isChecked())
165     self._del_btn.setVisible(self._edit_btn.isChecked())
166
167     def _edit_on(self):
168         self._app_lw.itemClicked.disconnect(self._run_app)
169         self._edit_btn.setText('Done')
170
171     def _edit_off(self):
172         self._app_lw.itemClicked.connect(self._run_app)
173         self._edit_btn.setText('Edit')
174

D:\TPX\PTD_01\011_Add_App_Workspace\Code\tp_launcher_gui_END.py
177         self._edit_btn.setText('Done')
178
179     def _edit_off(self):
180         self._app_lw.itemClicked.connect(self._run_app)
181         self._edit_btn.setText('Edit')
182
183     ===== ADD =====
184
185     def _add_workspace(self):
186         ws = 'New WORKSPACE'
187         msg = 'What would you like to title the new WORKSPACE?'
188         text = QtWidgets.QInputDialog.getText(self, ws, msg)[0]
189         if text:
190             self._tp_launcher.add_workspace(str(text))
191             self._populate_workspaces()
192             index = self._workspace_cb.findText(text)
193             self._workspace_cb.setCurrentIndex(index)
194
195     def _add_app(self):
196         if self._app_instruction:
```

35 | ADD APP WORKSPACE

Add Workspace

APP WORKSPACE

BAD:

temp = 'haaaaaaaaammm'
some_function(temp)



GOOD:

some_function(
'haaaaaaaaammm'
)



- Get user text through **input dialog**
- Add to model class
- Populate combobox and select!

Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

tp_launcher_gui...ncher_gui-END.py

D:\TPX\PTD_01\011_Add_App_Workspace\Code\tp_launcher_gui_START.py

```
163     self._app_lw.setDragEnabled(self._edit_btn.isChecked())
164     self._add_btn.setVisible(self._edit_btn.isChecked())
165     self._del_btn.setVisible(self._edit_btn.isChecked())
166
167     def _edit_on(self):
168         self._app_lw.itemClicked.disconnect(self._run_app)
169         self._edit_btn.setText('Done')
170
171     def _edit_off(self):
172         self._app_lw.itemClicked.connect(self._run_app)
173         self._edit_btn.setText('Edit')
174
```

D:\TPX\PTD_01\011_Add_App_Workspace\Code\tp_launcher_gui-END.py

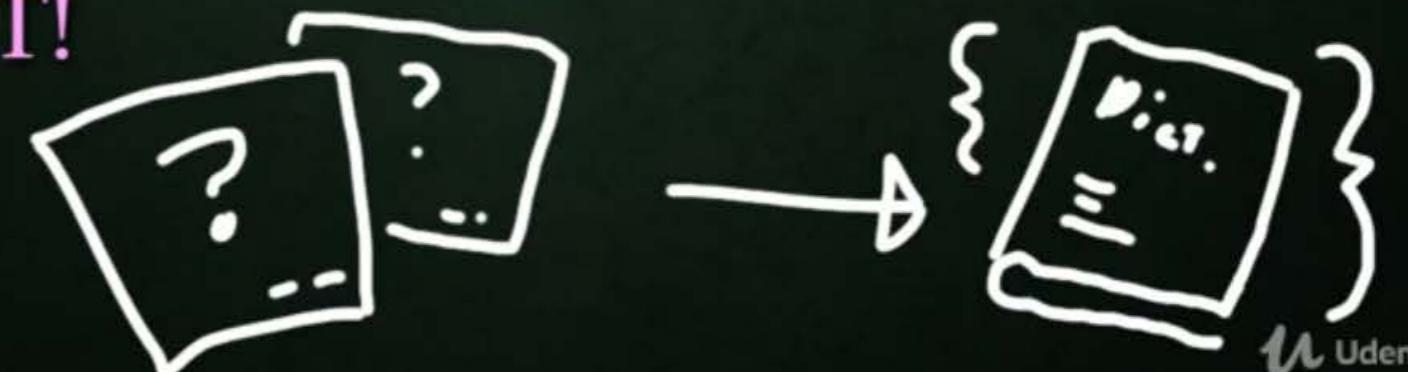
```
192         index = self._workspace_cb.findText(text)
193         self._workspace_cb.setCurrentIndex(index)
194
195     def _add_app(self):
196         if self._app_instruction:
197             msg = '1) Select the application file\n'
198             msg += '2) Select a app icon image (Optional)'
199             QtWidgets.QMessageBox.information(self, 'Add App',
200             self._app_instruction = False
201             sel = 'Select APP file'
202             app = self._file_dialogs[QT_VER](sel, self._my_path)
203             if app:
204                 path = os.path.split(app)[0]
205                 msg = 'Select ICON file (optional)'
206                 icon = self._file_dialogs[QT_VER](msg, path)
207                 self._tp_launcher.add_app(self.get_workspace(), app)
208                 self._populate_apps()
209
210     def _file_dialog(self, msg, path):
211         return QtWidgets.QFileDialog.getOpenFileName(self, msg,
212
213     def _file_dialog_pyqt4(self, msg, path):
214         fd = QtWidgets.QFileDialog.getOpenFileName(self, msg, p
215         return str(fd)
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 195 Col 34 Ch 34

Windows Taskbar icons: File Explorer, File Manager, Mail, Photos, OneDrive, Edge, Google Chrome, Adobe Photoshop, Adobe After Effects, Adobe Premiere Pro, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Project, Microsoft Visio, Microsoft Access, Microsoft Publisher, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Project, Microsoft Visio, Microsoft Access, Microsoft Publisher.

ADD APP

- Instructions message box shown once per session
- Challenge your skills by adding a do not show again checkbox!
- File dialogs for application file and icon file
- Add to model file instance
- Repopulate app list widget!
- TEST!



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\012_Custom_Delete_Button\Code\tp_launcher_gui_START.py

```
26 import sys
27
28 import Qt
29 from Qt import QtWidgets, QtCore, QtGui
30 import tp_launcher_model
31
32 QT_VER = Qt.__binding__
33 PY_VER = sys.version[:3]
34
35 class TP_Launcher_GUI(QtWidgets.QWidget):
36     '''The goal of this tool is to create a GUI that
37     allows the user to quickly create, select and
38     delete workspaces and add, remove and launch
39     applications within those workspaces.
40     '''
41     def __init__(self, parent=None):
42         super(TP_Launcher_GUI, self).__init__(parent)
43
44         self.icons = QtWidgets.QFileIconProvider()
45
46
47
48
D:\TPX\PTD_01\012_Custom_Delete_Button\Code\tp_launcher_gui-END.py
```

31
32 QT_VER = Qt.__binding__
33 PY_VER = sys.version[:3]
34
35
36 class Delete_Btn(QtWidgets.QPushButton):
37 ''' Custom button that Triggers parent's 'delete_item' function
38 def __init__(self, parent=None):
39 super(Delete_Btn, self).__init__(parent)
40
41 class TP_Launcher_GUI(QtWidgets.QWidget):
42 '''The goal of this tool is to create a GUI that
43 allows the user to quickly create, select and
44 delete workspaces and add, remove and launch
45 applications within those workspaces.
46 '''
47 def __init__(self, parent=None):
48 super(TP_Launcher_GUI, self).__init__(parent)

Files have changes: Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 33 Col 25 Ch 25

Br Pr Ps Ae

CUSTOM BUTTON CLASS

- Custom delete button that will be handling dropping/deleting apps/workspaces
- Inherits from QPushButton
- Just a dummy class right now



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\012_Custom_Delete_Button\Code\tp_launcher_gui_START.py

```
49
50     self._tp_launcher = tp_launcher_model.TP_Launcher_Model
51
52     self._edit_op = {
53         True: self._edit_on,
54         False: self._edit_off
55     }
56     self._app_instruction = True
57     self._file_dialogs = defaultdict(lambda: self._file_dialog)
58     self._file_dialogs['PyQt4'] = self._file_dialog_pyqt4
59
60     self._setup()
61     self._testing()
62     self._edit_toggle()
63
64     ----- SETUP UI -----
65
66     def _setup(self):
67         layout = QtWidgets.QVBoxLayout(self)
```

D:\TPX\PTD_01\012_Custom_Delete_Button\Code\tp_launcher_gui-END.py

```
55
56     self._tp_launcher = tp_launcher_model.TP_Launcher_Model
57
58     self._edit_op = {
59         True: self._edit_on,
60         False: self._edit_off
61     }
62     self._app_instruction = True
63     self._file_dialogs = defaultdict(lambda: self._file_dialog)
64     self._file_dialogs['PyQt4'] = self._file_dialog_pyqt4
65     self._dragging = None
66     self._delete_op = {
67         'workspace': self._delete_workspace,
68         'application': self._delete_app
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
```

#38 CUSTOM DELETE BUTTON
Instance Custom Button

INSTANCE CUSTOM BUTTON

- Create 'dragging' var for storing future drag / drop info
- Create dictionary for handling logic of deleting stuff
- Instance our new custom button class



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\012_Custom_Delete_Button\Code\tp_launcher_gui_START.py

```
179     self._app_lw.itemClicked.connect(self._run_app)
180     self._edit_btn.setText('Edit')
181
182     #----- ADD -----
183
184     def _add_workspace(self):
185         ws = 'New WORKSPACE'
186         msg = 'What would you like to title the new WORKSPACE?'
187         text = QtWidgets.QInputDialog.getText(self, ws, msg)[0]
188         if text:
189             self._tp_launcher.add_workspace(str(text))
190             self._populate_workspaces()
191             index = self._workspace_cb.findText(text)
192             self._workspace_cb.setCurrentIndex(index)
193
194     def _add_app(self):
195         if self._app_instruction:
196             msg = '1) Select the application file\n'
197             msg += '2) Select a app icon image (Optional)'
198
199
200     self._app_lw.itemClicked.connect(self._run_app)
201     self._edit_btn.setText('Edit')
202
203     #----- ADD -----
204
205     def _add_workspace(self):
206         ws = 'New WORKSPACE'
207         msg = 'What would you like to title the new WORKSPACE?'
208         text = QtWidgets.QInputDialog.getText(self, ws, msg)[0]
209         if text:
210             self._tp_launcher.add_workspace(str(text))
211             self._populate_workspaces()
212             index = self._workspace_cb.findText(text)
213             self._workspace_cb.setCurrentIndex(index)
214
215     def _add_app(self):
216         if self._app_instruction:
217             msg = '1) Select the application file\n'
218             msg += '2) Select a app icon image (Optional)'
```

Files have changes. Encodings: ANSI, Win/Dos | ANSI, Win/Dos | Ln 192 Col 1 Ch 1

Windows icons: File, Copy, Paste, Find, Refresh, Print, Save, Open, Exit, etc.

DELETE APP & WORKSPACE

- Delete app/workspace pass info to **tp_launcher instance functions**
- Delete item: will **delete item dropped** based on what it is
- **public** so custom button can access function
- get info from '**dragging**' var
- **warning confirmation box**



File 40. Delete Button Drag and Drop

```
QT_VER = Qt.__binding__
PY_VER = sys.version[:3]

class Delete_Btn(QtWidgets.QPushButton):
    ''' Custom button that Triggers parent's 'delete_item' function '''
    def __init__(self, parent=None):
        super(Delete_Btn, self).__init__(parent)

class TP_Launcher_GUI(QtWidgets.QWidget):
    '''The goal of this tool is to create a GUI that
       allows the user to quickly create, select and
       delete workspaces and add, remove and launch
       applications within those workspaces'''

D:\TPX\PTD_01\013_Drag_Drop\Code\tp_launcher_gui_END.py

class Delete_Btn(QtWidgets.QPushButton):
    ''' Custom button that Triggers parent's 'delete_item' function '''
    def __init__(self, parent=None):
        super(Delete_Btn, self).__init__(parent)
        self._my_parent = parent
        self._type = 'application/x-qabstractitemmodeldatalist'

    def dragEnterEvent(self, e):
        if e.mimeData().hasFormat(self._type):
            e.accept()
        else:
            e.ignore()

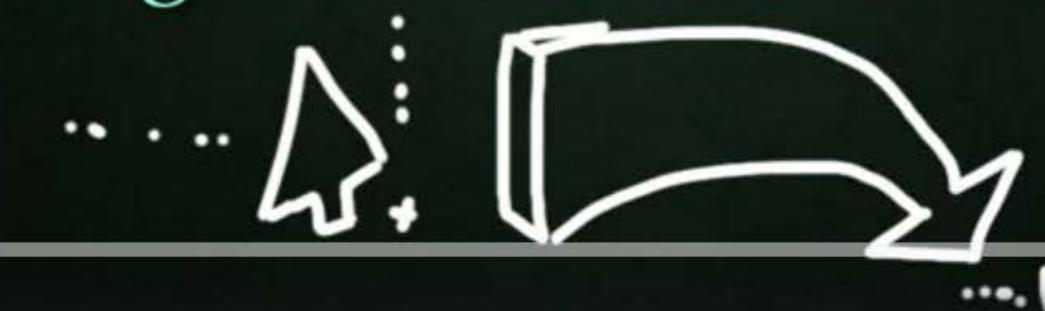
    def dropEvent(self, e):
        if e.mimeData().hasFormat(self._type):
            self._my_parent.delete_item()
            e.accept()
        else:
            e.ignore()

class TP_Launcher_GUI(QtWidgets.QWidget):
    '''The goal of this tool is to create a GUI that
       allows the user to quickly create, select and
       delete workspaces and add, remove and launch
       applications within those workspaces'''
```

DELETE BUTTON DRAG DROP

Delete Button Class:

- Store weird string to validate data being dropped
- Store parent in constructor
- Override 'dragEnterEvent' and 'dropEvent'
 - in dropEvent, call parent's 'delete_item()'
- dragEnter needed to accept drop



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\013_Drag_Drop\Code\tp_launcher_gui_START.py

```
86     self.setWindowTitle('TPayne\'s Launcher ' + _version)
87     self.setWindowIcon(self._tpl_icon)
88     flag = QtCore.Qt.WindowCloseButtonHint
89     self.setWindowFlags(QtCore.Qt.Window | flag)
90     self.resize(190, 200)

91     def _setup_header(self):
92         h_layout = QtWidgets.QHBoxLayout()
93         workspace_gb = QtWidgets.QGroupBox('Workspaces')
94         v_layout = QtWidgets.QVBoxLayout(workspace_gb)

95         self._workspace_cb = QtWidgets.QComboBox()

96         self._edit_btn = QtWidgets.QPushButton('Edit')
97         self._edit_btn.setMaximumSize(QtCore.QSize(40, 23))

D:\TPX\PTD_01\013_Drag_Drop\Code\tp_launcher_gui_END.py
```

```
101    self.setWindowTitle('TPayne\'s Launcher ' + _version)
102    self.setWindowIcon(self._tpl_icon)
103    flag = QtCore.Qt.WindowCloseButtonHint
104    self.setWindowFlags(QtCore.Qt.Window | flag)
105    self.resize(190, 200)

106    def _setup_header(self):
107        h_layout = QtWidgets.QHBoxLayout()
108        workspace_gb = QtWidgets.QGroupBox('Workspaces')
109        v_layout = QtWidgets.QVBoxLayout(workspace_gb)

110        self._workspace_cb = QtWidgets.QComboBox()
111        flag = QtWidgets.QAbstractItemView.DragOnly
112        self._workspace_cb.view().setDragDropMode(flag)

113        self._edit_btn = QtWidgets.QPushButton('Edit')
114        self._edit_btn.setMaximumSize(QtCore.QSize(40, 23))
115        self._edit_btn.setCheckable(True)

116        v_layout.addWidget(self._workspace_cb)
117        h_layout.addWidget(workspace_gb)
118        h_layout.addStretch()
119        h_layout.addWidget(self._edit_btn)

120        v_layout.addStretch()
121        h_layout.addStretch()
122        h_layout.addWidget(self._edit_btn)
```

Files have changes: Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 113 Col 38 Ch 38

Br Pr Ps Ae

DRAG PROP FUNCTIONALITY

- connect combobox's 'view.pressed' signal to 'dragging_workspace()'
- connect apps 'pressed' signal to 'dragging_app'
 - each of these stores info in 'dragging' var as tuple
- QMimeData + custom widgets = **Avoided because way more code**



Code Compare - tp_launcher_model_START.py <-> tp_launcher_model-END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\014_Save_Settings\Code\tp_launcher_model_START.py

```
1 #!/usr/bin/env python
2
3 from collections import OrderedDict, defaultdict
4 import os
5 import platform
6 import subprocess
7 import webbrowser
8
9
10 class TP_Launcher_Model:
11     def __init__(self):
12         self._workspaces = OrderedDict()
13         self._open_doc = defaultdict(lambda: 'open ')
14         self._open_doc['Windows'] = 'start '
15         self._platform = platform.system()
16
17     # ===== WORKSPACES =====
18
19     def add_workspace(self, ws_name):
20
21 D:\TPX\PTD_01\014_Save_Settings\Code\tp_launcher_model-END.py
```

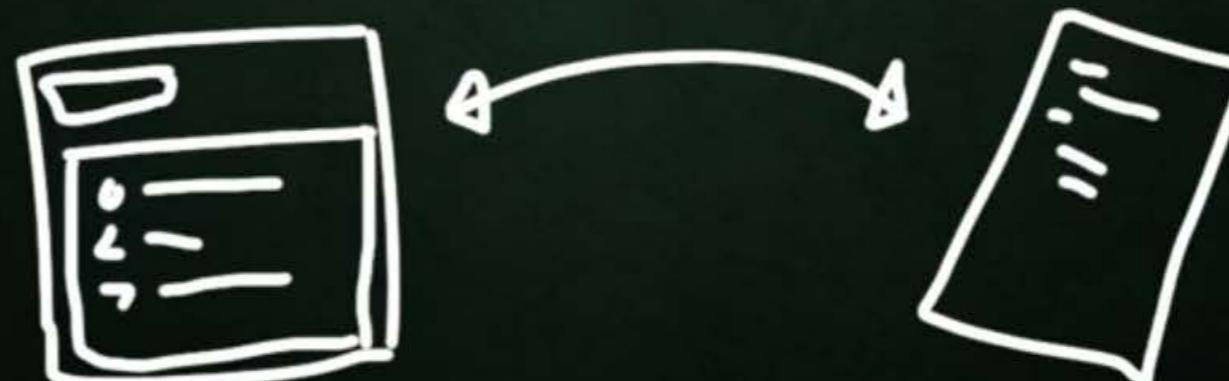
1 #!/usr/bin/env python
2
3 from collections import OrderedDict, defaultdict
4 import json
5 import os
6 import platform
7 import subprocess
8 import webbrowser
9
10
11 class TP_Launcher_Model:
12 def __init__(self):
13 self._workspaces = OrderedDict()
14 self._open_doc = defaultdict(lambda: 'open ')
15 self._open_doc['Windows'] = 'start '
16 self._platform = platform.system()
17
18 # ===== WORKSPACES =====

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos |

Ln 4 Col 1 Ch 1

SAVE A LOAD WSON

- import json
 - **read/write_json_file()**
 - use 'with' to open file, handles closing automatically!
 - dump ordered dict
 - tool **data** is separated from user settings to allow multiple users to **read** from it!



QSETTINGS

- User preferences will be *saved* with QtCore.QSettings(org, app)
 - Also, store json file path
 - Add ‘`save_settings()`’ calls at:
 - `workspaces_changed()`
 - `edit_toggle()`
 - `add_workspace()`, `add_app()`
 - `delete_item()`



File Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\014_Save_Settings\Code\tp_launcher_gu_START.py

```
75     False: self._edit_off
76 }
77 self._app_instruction = True
78 self._file_dialogs = defaultdict(lambda: self._file_dialog)
79 self._file_dialogs['PyQt4'] = self._file_dialog_pyqt4
80 self._dragging = None
81 self._delete_op = {
82     'workspace': self._delete_workspace,
83     'application':self._delete_app
84 }
```

D:\TPX\PTD_01\014_Save_Settings\Code\tp_launcher_gu_END.py

```
81 self._delete_op = {
82     'workspace': self._delete_workspace,
83     'application':self._delete_app
84 }
85
86 txt = 'TPayne_Experience'+QT_VER
87 self._settings = QtCore.QSettings(txt, 'TPayne\'s_Launcher')
88 name = '{}_{}_data.json'.format(PY_VER, QT_VER)
89 path = os.path.join(self._my_path, 'data')
90 self._json_file = os.path.join(path, name)
91
92 self._setup()
93 self._testing()
94 self._edit_toggle()
95
96 #===== SETUP UI =====
97
98 def _setup(self):
99     v_layout = QtWidgets.QVBoxLayout(self)
100
101     v_layout.addLayout(self._setup_header())
102     v_layout.addLayout(self._setup_edit_options())
103     v_layout.addWidget(self._setup_apps())
104
105     self._setup_connections()
106
107     self.setWindowTitle('TPayne\'s Launcher ' + __version__)
108     self.setWindowIcon(self._tpl_icon)
```

QSETTINGS

- User preferences will be *saved* with QtCore.QSettings(org, app)
 - Also, store json file path
 - Add ‘`save_settings()`’ calls at:
 - `workspaces_changed()`
 - `edit_toggle()`
 - `add_workspace(), add_app()`
 - `delete_item()`



```
File Edit View Insert Tools Window Help
New Code Comparison Refresh Ptp_launcher_gui_END.py
D:\TPX\PTD_01\014_Save_Settings\Code\tp_launcher_gui_START.py
75     False: self._edit_off
76 }
77 self._app_instruction = True
78 self._file_dialogs = defaultdict(lambda: self._file_dialog)
79 self._file_dialogs['PyQt4'] = self._file_dialog_pyqt4
80 self._dragging = None
81 self._delete_op = {
82     'workspace': self._delete_workspace,
83     'application':self._delete_app
84 }
85
86 txt = 'TPayne_Experience'+QT_VER
87 self._settings = QtCore.QSettings(txt, 'TPayne\'s_Launcher')
88 name = '{}_{}_data.json'.format(PY_VER, QT_VER)
89 path = os.path.join(self._my_path, 'data')
90 self._json_file = os.path.join(path, name)
91
92 self._setup()
93 self._testing()
94 self._edit_toggle()
95
96 #===== SETUP UI =====
97
98 def _setup(self):
99     v_layout = QtWidgets.QVBoxLayout(self)
100
101     v_layout.addLayout(self._setup_header())
102     v_layout.addLayout(self._setup_edit_options())
103     v_layout.addWidget(self._setup_apps())
104
105     self._setup_connections()
106
107     self.setWindowTitle('TPayne\'s Launcher ' + __version__)
108     self.setWindowIcon(self._tpl_icon)
```

Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\014_Save_Settings\Code\tp_launcher_gui_START.py

```
261     self._tp_launcher.delete_workspace(ws_name)
262     self._populate_workspaces()
263
264     def delete_item(self):
265         ''' Delete the item dragged onto Delete button '''
266         typ = self._dragging[0]
267         name = self._dragging[1]
268         title = 'Delete {}?'.format(typ)
269         msg = 'Are you sure you want to delete {} "{}"?'.format(typ, name)
270
271         if msg == QMessageBox.Yes:
272             self._delete_op[typ](name)
273             self._save_settings()
274
275             #----- SETTINGS -----
276
277             def _save_settings(self):
278                 c = self._app_lw.count()
279                 names = [self._app_lw.item(i).text() for i in range(c)]
280                 ws = self.get_workspace()
281                 self._tp_launcher.reorder_apps(ws, names)
282                 self._settings.setValue('CurrentWorkspace', ws)
283                 self._tp_launcher.write_json_file(self._json_file)
284                 self._settings.setValue('PosX', int(self.x()))
285                 self._settings.setValue('PosY', int(self.y()))
286
287             #----- TEST CODE -----
288
289             def _testing(self):
290                 ws1 = 'My_first_workspace'
291                 ws2 = 'My_second_workspace'
292                 ## CHANGE TO YOUR COMPUTER PATHS
293                 appl = r'C:\Program Files (x86)\Google\Chrome\Application'
294                 icon1 = r'C:\Program Files (x86)\Google\Chrome\Application\chrome.exe'
295                 app2 = r'D:\Program Files (x86)\Mozilla Firefox\firefox.exe'
296                 self._tp_launcher.add_workspace(ws1)
297                 self._tp_launcher.add_app(ws1, appl, icon1)
```

File has no changes. Clicking right mouse button will refresh.

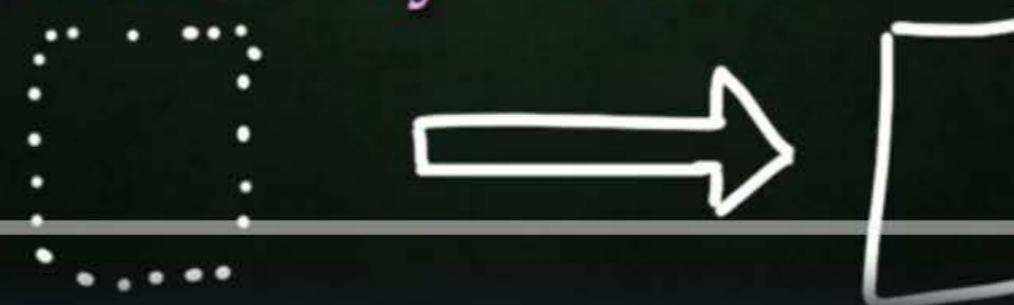
1x 0:26 / 1:25

Br Pr Ae

SAVE SETTINGS

GOAL = **save** all important **data**!

- Reorder dictionary if apps order changed
- Save current workspace selected
- Save json file data
- Save tool's x, y screenspace position
 - When tool reopened, tool is where they closed it



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\015_Load_Settings\Code\tp_launcher_gui_START.py

```
83     'application':self._delete_app
84 }
85
86 txt = 'TPayne_Experience'+QT_VER
87 self._settings = QtCore.QSettings(txt, 'TPayne\'s_Launcher')
88 name = '{}_{}_data.json'.format(PY_VER, QT_VER)
89 path = os.path.join(self._my_path, 'data')
90 self._json_file = os.path.join(path, name)
91
92 self._setup()
93 self._testing()
94 self._edit_toggle()
95
96 ===== SETUP UI =====
97
98 def _setup(self):
99     v_layout = QtWidgets.QVBoxLayout(self)
100
101     # layout.addWidget(self._setup_header())
102
103
D:\TPX\PTD_01\015_Load_Settings\Code\tp_launcher_gui_END.py
```

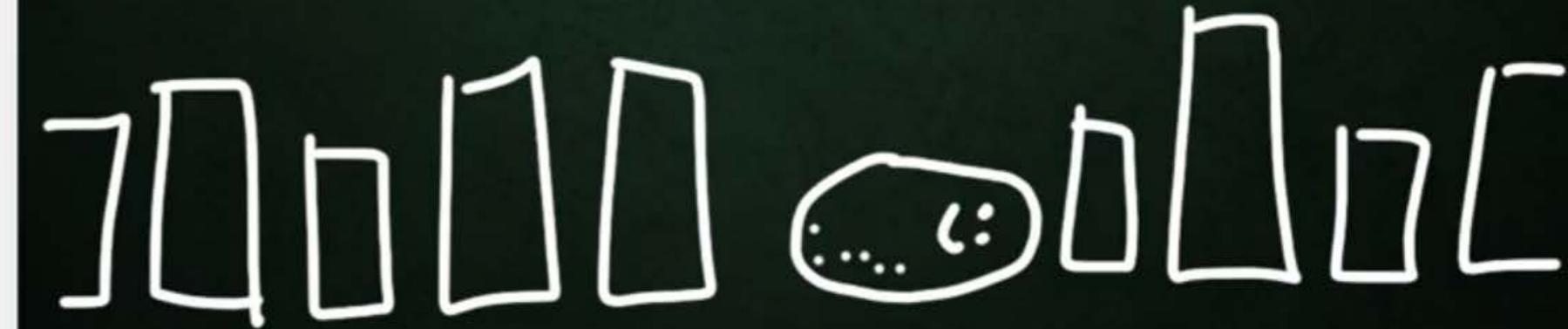
83 'application':self._delete_app
84 }
85
86 txt = 'TPayne_Experience'+QT_VER
87 self._settings = QtCore.QSettings(txt, 'TPayne\'s_Launcher')
88 name = '{}_{}_data.json'.format(PY_VER, QT_VER)
89 path = os.path.join(self._my_path, 'data')
90 self._json_file = os.path.join(path, name)
91
92 d = defaultdict(lambda: self._get_settings)
93 self._settings_op = defaultdict(lambda: d)
94 self._settings_op['2.7']['PyQt4'] = self._get_settings_
95
96 self._setup()
97 self._load_settings()
98 self._edit_toggle()
99
100 ===== SETUP UI =====

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 90 Col 51 Ch 51

Br Pr Ps Ae

LOADING PYQT4 ISSUES

- QSettings acts the same with all version of python **except Python 2.7 + PyQt4**
- Create default dictionary to handle **reading settings**
- Then create an exception based on **Py and Qt versions**



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\015_Load_Settings\Code\tp_launcher_gui_START.py

```
286
287     #===== SETTINGS =====
288
289     def _save_settings(self):
290         c = self._app_lw.count()
291         names = [self._app_lw.item(i).text() for i in range(c)]
292         ws = self.get_workspace()
293         self._tp_launcher.reorder_apps(ws, names)
294         self._settings.setValue('CurrentWorkspace', ws)
295         self._tp_launcher.write_json_file(self._json_file)
296
297
298
299
300
301     self._settings.setValue('PosY', int(self.y()))
302
303     def _load_settings(self):
304         if 'CurrentWorkspace' in self._settings.allKeys() and \
305             os.path.exists(self._json_file):
306             x, y, cws = self._settings_op[PY_VER][QT_VER]()
307             self._tp_launcher.read_json_file(self._json_file)
308             self._populate_workspaces()
309             index = self._workspace_cb.findText(cws)
310             self._workspace_cb.setCurrentIndex(index)
311             self.move(x, y)
312         else:
313             self._tp_launcher.add_workspace('Default_WS')
314             self._populate_workspaces()
315
316     def _get_settings(self):
317         x = int(self._settings.value('PosX')) #PyQt5 conversion
318         y = int(self._settings.value('PosY'))
319         cws = str(self._settings.value('CurrentWorkspace'))
320         return x, y, cws
321
322     def _get_settings_27_pyqt4(self):
323         x = self._settings.value('PosX').toInt()[0]
324         y = self._settings.value('PosY').toInt()[0]
325         cws = str(self._settings.value('CurrentWorkspace'))
326         return x, y, cws
327
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 97 Col 10 Ch 10

Windows Taskbar icons: File Explorer, File Manager, Mail, Photos, OneDrive, Microsoft Edge, Adobe Photoshop, Adobe Premiere Pro, Adobe After Effects, Adobe Bridge, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Project, Microsoft Visio, Microsoft Access, Microsoft Publisher, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Project, Microsoft Visio, Microsoft Access, Microsoft Publisher.

LOAD SETTINGS

GOAL: Read in user settings
and data

- Check if user settings currently exist and json file exists
- Load x/y position, current workspace and json data
- Load data to model, select workspace and move tool



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\015_Load_Settings\Code\tp_launcher_gui_START.py

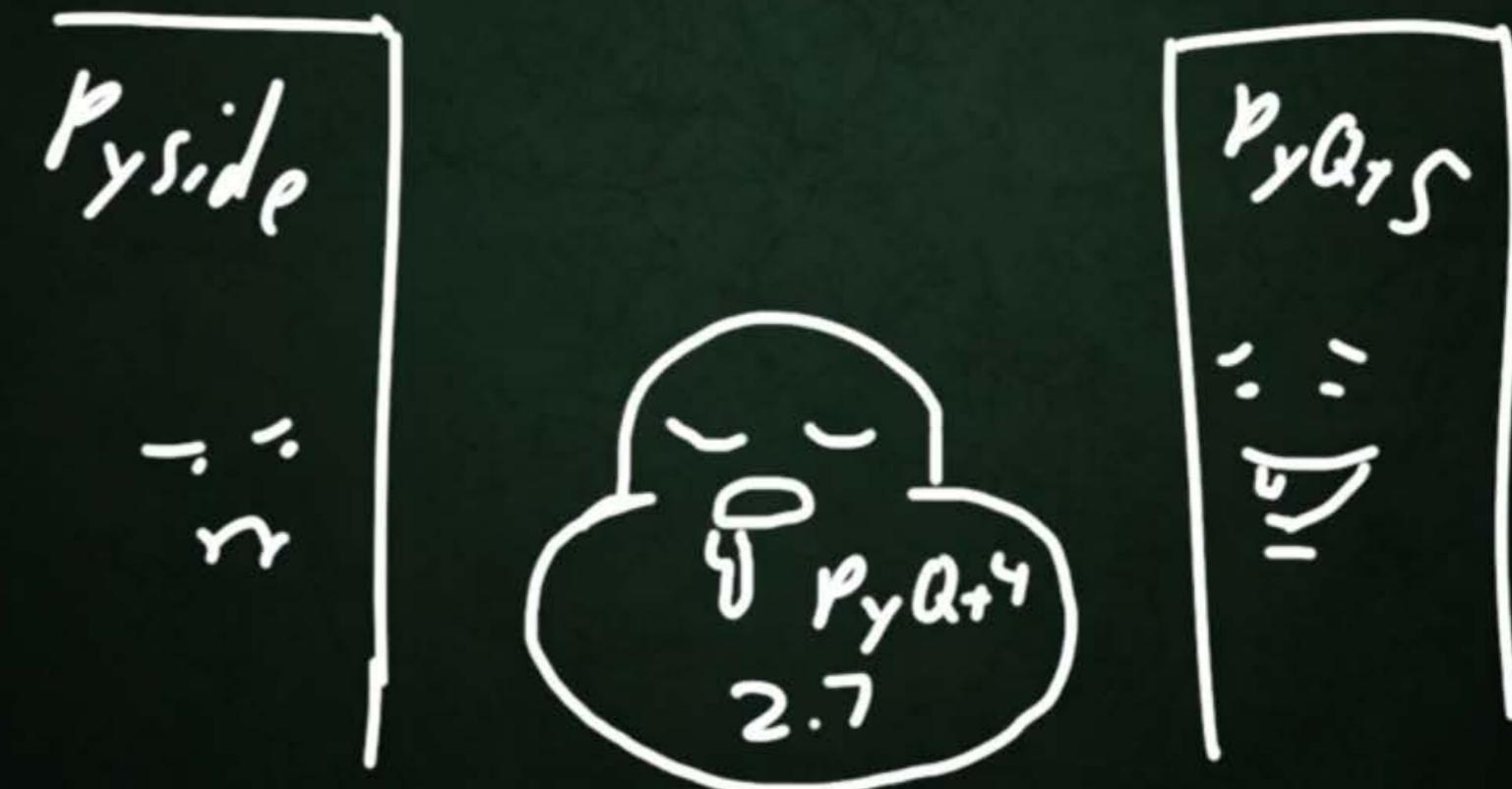
```
299     # TEST CODE
300
301     def _testing(self):
302         ws1 = 'My_first_workspace'
303         ws2 = 'My_second_workspace'
304         ## CHANGE TO YOUR COMPUTER PATHS
305         appl = r'C:\Program Files (x86)\Google\Chrome\Application'
306         icon1 = r'C:\Program Files (x86)\Google\Chrome\Application\chromedriver.exe'
307         app2 = r'D:\Program Files (x86)\Mozilla Firefox\firefox.exe'
308         self._tp_launcher.add_workspace(ws1)
309
310
311     def _get_settings(self):
312         x = int(self._settings.value('PosX')) #PyQt5 conversion
313         y = int(self._settings.value('PosY'))
314         cws = str(self._settings.value('CurrentWorkspace'))
315         return x, y, cws
316
317     def _get_settings_27_pyqt4(self):
318         x = self._settings.value('PosX').toInt()[0]
319         y = self._settings.value('PosY').toInt()[0]
320         cws = str(self._settings.value('CurrentWorkspace'))
321         return x, y, cws
322
323
324     if __name__ == '__main__':
325         print(PY_VER)
326         print(QT_VER)
327         app = QtWidgets.QApplication(sys.argv)
328         ex = TP_Launcher_GUI()
329         ex.show()
330         sys.exit(app.exec_())
331
332
333     # Copyright (c) 2017 Trevor Payne
334     #
335     # Permission is hereby granted, free of charge, to any person obtaining
336     # a copy of this software and associated documentation files (the "Software"),
337     # to deal in the Software without restriction, including without limitation
338     # the rights to use, copy, modify, merge, publish, distribute, sublicense,
339     # and/or sell copies of the Software, and to permit persons to whom the Software
340     # is furnished to do so, subject to the following conditions:
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 319 Col 34 Ch 34

Br Ps Ae

GET SETTINGS

- PyQt4 + Py 2.7 = QVariants returned, use '.toInt()' to convert
- Others = cast to int() and str()



Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\016_Tray_Closing_Override\Code\tp_launcher_gui_START.py

```
98     self._edit_toggle()
99
100    ===== SETUP UI =====
101
102    def _setup(self):
103        v_layout = QtWidgets.QVBoxLayout(self)
104
105        v_layout.addLayout(self._setup_header())
106        v_layout.addLayout(self._setup_edit_options())
107
108
109    self._setup_tray_icon()
110    self._setup_connections()
111
112    self.setWindowTitle('TPayne\'s Launcher ' + __version__)
113    self.setWindowIcon(self._tpl_icon)
114    flag = QtCore.Qt.WindowCloseButtonHint
115    self.setWindowFlags(QtCore.Qt.Window | flag)
116    self.resize(190, 200)
117
118    def _setup_header(self):
119        h_layout = QtWidgets.QHBoxLayout()
120        workspace_gb = QtWidgets.QGroupBox('Workspaces')
121        v_layout = QtWidgets.QVBoxLayout(workspace_gb)
122
123        self._workspace_cb = QtWidgets.QComboBox()
124        flag = QtWidgets.QAbstractItemView.DragOnly
125        self._workspace_cb.view().setDragDropMode(flag)
126
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Ln 102 Col 22 Ch 22

Br Pr Ps Ae

SETUP TRAY ICON

- add 'setup_tray_icon()' to setup()
- QSystemTrayIcon instance
- QMenu to hold right click menu options
- Add 'Open', 'YouTube' and 'Quit' options
- Add separator to space out quit
- Connect QMenu to TrayIcon

Windows = Bottom Right (typically)

Linux = Bottom Left

Mac = Top Right



File 49. Closing Override

```
Code Compare - tp_launcher_gui_START.py <-> tp_launcher_gui_END.py
File: tp_launcher_gui_END.py
D:\TPX\PTD_01\016_Tray_Closing_OVERRIDE\Code\tp_launcher_gui_START.py
180     self._populate_apps()
181
182     def _populate_apps(self):
183         self._app_lw.clear()
184         ws = self.get_workspace()
185         for app_name in self._tp_launcher.get_app_names(ws):
186             item = QtWidgets.QListWidgetItem(self._app_lw)
187             icon = self._tp_launcher.get_app_icon(ws, app_name)
188             if icon:
189
D:\TPX\PTD_01\016_Tray_Closing_OVERRIDE\Code\tp_launcher_gui_END.py
198         self._app_lw.clear()
199         ws = self.get_workspace()
200         for app_name in self._tp_launcher.get_app_names(ws):
201             item = QtWidgets.QListWidgetItem(self._app_lw)
202             icon = self._tp_launcher.get_app_icon(ws, app_name)
203             if icon:
204                 item.setIcon(QtGui.QIcon(icon))
205             else:
206                 item.setIcon(self._icons.icon(self._icons.File))
207             item.setText(app_name)
208
209     def closeEvent(self, e):
210         self.hide()
211         e.ignore()
212
213     def _close(self):
214         self._save_settings()
215         QtWidgets.QApplication.instance().quit()
216
217 #===== WORKSPACE + APP =====
218
219     def get_workspace(self):
220         ''' Returns the currently selected workspace from combobox '''
221         return str(self._workspace_cb.currentText())
222
223     def _workspace_changed(self):
224         self._populate_apps()
225         self._save_settings()

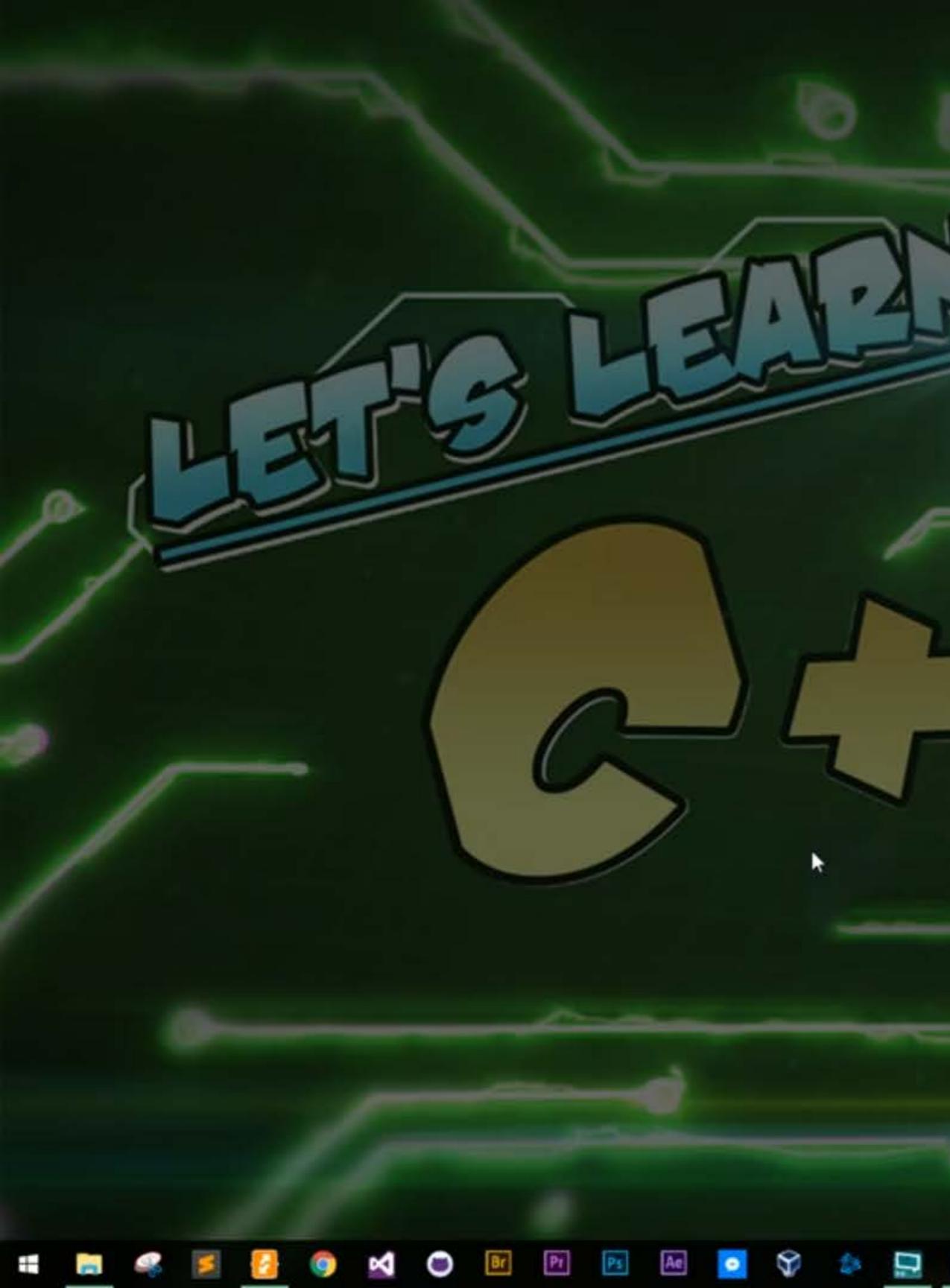
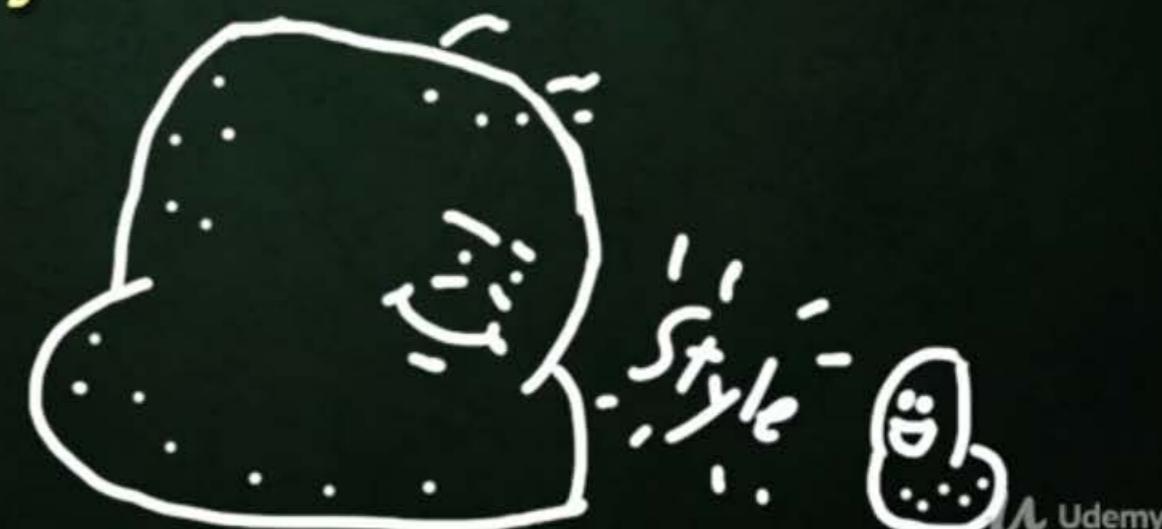
Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos | Line 169 Col 1 Ctrl F
0:10 / 2:36 Br Ps Ae
```

CLOSING OVERRIDE

- **CloseEvent**, activated when closing our tool, can be overridden!
- **closeEvent()** activated when X is clicked in tool and only hides the tool
- **_close()** is activated when 'Quit' is click in system tray menu
- If system tray not available, quit
- Make sure application doesn't close when last window hidden

STYLESHEET OVERVIEW

- Main and Button stylesheets created at top for ease of tweaking and reduce code bloating
- Implemented using '`setStyleSheet`'
- Styles are inherited through GUI hierarchy



Code Compare - tp_launcher_ui_START.py <-> tp_launcher_ui_END.py

File Edit View Comparison Changes Layout Tools Window Help

New Code Comparison Refresh

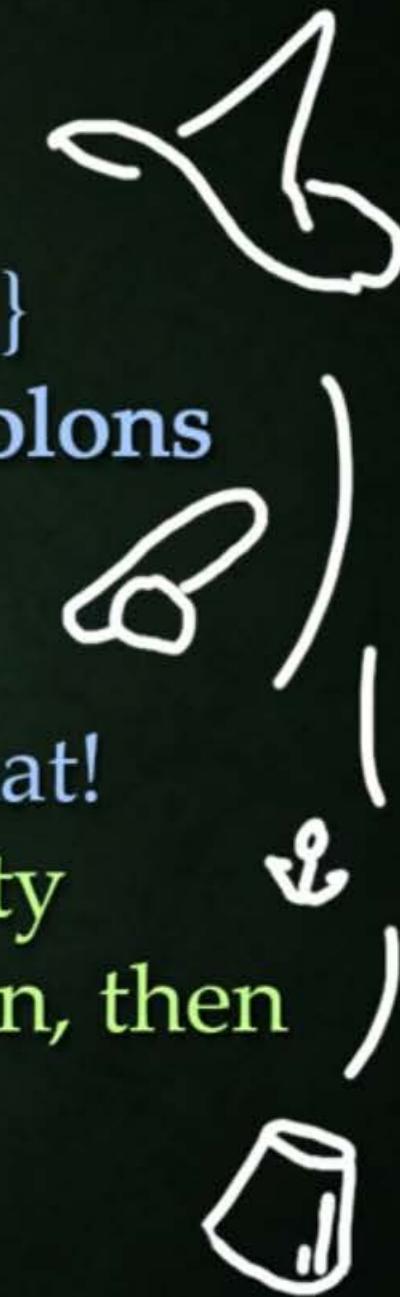
D:\TPX\PTD_01\017_Sylesheet\Code\tp_launcher_ui_START.py

```
19 #!/usr/bin/env python
20
21 __author__ = 'Trevor Payne'
<
D:\TPX\PTD_01\017_Sylesheet\Code\tp_launcher_ui_END.py
34
35 _STYLE_MAIN = """
36     QWidget{
37         color: white;
38         background-color: qlineargradient(
39             x1: 0, y1: 0, x2: 1, y2: 1,
40             stop: 0 #052e32, stop: 0.25 #030f00,
41             stop: 0.75 #030f00, stop: 1 #382213);
42         alternate-background-color: #072100;
43     }
44     QComboBox{
45         color: white;
46         background: black;
47         border: 1px inset gray;
48         border-radius: 2px;
49     }
50     QGroupBox{ background-color: rgba(0,0,0,0)}
51     QLineEdit{ color: white; background-color: rgb(0,0,0); }
52 """
53 _STYLE_BTN = """
54     QPushButton{
55         border: 1px outset gray;
56         border-radius: 2px;
57         background-color: #00351d;
58         min-width: 40px;
59     }
60     QPushButton:checked {
61         border: 1px outset gray;
62         border-radius: 2px;
63         background-color: #701200;
64         min-width: 40px;
65     }
66 """
67
```

Files have changes. Encodings: | ANSI, Win/Dos | ANSI, Win/Dos |

Br Pr Ps Ae

QWIDGET STYLESHEET

- QWidget style inherited by nearly **everything**
 - Style then contained within {} curly braces, with ; semicolons separating items
- color: white;** = set **text color**
background-color: ... = just that!
qlineargradient = Create pretty gradient! (start/end position, then colors along line)
alternate-background-color = **alternating row color**
- 

Code Compare - tp_launcher_ui_START.py <-> tp_launcher_ui_END.py

File Edit View Window Help

New Code Comparison Refresh

D:\TPX\PTD_01\017_StyleSheet\Code\tp_launcher_ui_START.py

```
19 #!/usr/bin/env python
20
21 __author__ = 'Trevor Payne'
<
D:\TPX\PTD_01\017_StyleSheet\Code\tp_launcher_ui_END.py
34
35 _STYLE_MAIN = """
36     QWidget{
37         color: white;
38         background-color: qlineargradient(
39             x1: 0, y1: 0, x2: 1, y2: 1,
40             stop: 0 #052e32, stop: 0.25 #030f00,
41             stop: 0.75 #030f00, stop: 1 #382213);
42         alternate-background-color: #072100;
43     }
44     QComboBox{
45         color: white;
46         background: black;
47         border: 1px inset gray;
48         border-radius: 2px;
49     }
50     QGroupBox{ background-color: rgba(0,0,0,0)}
51     QLineEdit{ color: white; background-color: rgb(0,0,0); }
52     """
53 _STYLE_BTN = """
54     QPushButton{
55         border: 1px outset gray;
56         border-radius: 2px;
57         background-color: #00351d;
58         min-width: 40px;
59     }
60     QPushButton:checked {
61         border: 1px outset gray;
62         border-radius: 2px;
63         background-color: #701200;
64         min-width: 40px;
65     }
66     """
67 
```

Has no changes. Changes: 1 Add, 0 Del, 0 Undos | 1 Add, 0 Del, 0 Undos

1x 0:08 / 2:55

BR PR AE

OTHER STYLESHEETS

- **Combobox** = Black background, white text
 - **Border** = 1px thick, style, color
 - **Border radius** = corner roundness
- **Groupbox** = transparent background
- **LineEdit** = White text, black bg
- **EditButton** = custom style to preserve 'add' and 'delete' button styles
 - Green normal, Red alt-bg, round corners, 40px width