

Python Interface to the Plugin SDK (V1.00) (Differences from SDK)

This document describes the differences between how a plugin is programmed in Python and how it would be programmed in C/C++.

These are the only differences and any functions not in this document can be used the same way in C/C++ or Python.

Notes

All scripts files must have the PI_ prefix in order for them to be loaded by the plugin. This distinguishes them from any other support scripts that you may be using.

Some of the functions require self to be passed in. Failure to do this will cause problems.

When registering callbacks you need to pass in a copy of the callback.

e.g.

```
self.MyOrbitPlaneFuncCB = self.MyOrbitPlaneFunc  
XPLMControlCamera(self, xplm_ControlCameraUntilViewChanges,  
self.MyOrbitPlaneFuncCB, 0)
```

Where “self.MyOrbitPlaneFunc” is the actual callback.

```
def MyOrbitPlaneFunc(self, outCameraPosition, inIsLosingControl, inRefcon):  
..  
..  
..
```

It is a good idea to use the examples to get a feel for how plugins are programmed in Python.

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XPLMCamera

XPLMControlCamera(self, inHowLong, CameraControlCallback, inRefcon)

e.g.

```
self.MyOrbitPlaneFuncCB = self.MyOrbitPlaneFunc  
XPLMControlCamera(self, xplm_ControlCameraUntilViewChanges,  
self.MyOrbitPlaneFuncCB, 0)
```

XPLMDontControlCamera(self)

XPLMReadCameraPosition(outCameraPosition)

Pass in “outCameraPosition” as an empty list.

e.g.

```
CameraPosition = []  
XPLMReadCameraPosition(CameraPosition)
```

Python Interface to the Plugin SDK (V1.00) (Differences from SDK)

XPLMDataAccess

Count = XPLMGetDataavi(DataRef, DataRefValues, Offset, Max)

Pass in “DataRefValues” as an empty list.

Count = XPLMGetDataavf(DataRef, DataRefValues, Offset, Max)

Pass in “DataRefValues” as an empty list.

Count = XPLMGetDataab(DataRef, DataRefValues, Offset, Max)

Pass in “DataRefValues” as an empty list.

*XPLMDataRef = XPLMRegisterDataAccessor(
self, inDataName, inDataType, inIsWritable,
inReadInt, inWriteInt,
inReadFloat, inWriteFloat,
inReadDouble, inWriteDouble,
inReadIntArray, inWriteIntArray,
inReadFloatArray, inWriteFloatArray,
inReadData, inWriteData,
inReadRefcon, inWriteRefcon)*

XPLMUnregisterDataAccessor(self, inDataRef)

*RetVal = XPLMShareData(self, inDataName, inDataType, SharedDataCallback,
inNotificationRefcon)*

*RetVal = XPLMUnshareData(self, inDataName, inDataType, SharedDataCallback,
inNotificationRefcon)*

Python Interface to the Plugin SDK (V1.00) (Differences from SDK)

XPLMDisplay

*RetVal = XPLMRegisterDrawCallback(self, inCallback, inPhase,
inWantsBefore, inRefcon)*

*RetVal = XPLMUnregisterDrawCallback(self, inCallback, inPhase,
inWantsBefore, inRefcon)*

*RetVal = XPLMRegisterKeySniffer(self, KeySnifferCallback, inBeforeWindows,
inRefcon)*

RetVal = XPLMUnregisterKeySniffer(KeySnifferCallback, inBeforeWindows, inRefcon)

*HotKeyID = XPLMRegisterHotKey(inVirtualKey, inFlags, inDescription,
HotKeyCallback, inRefcon)*

XPLMUnregisterHotKey(self, HotKeyID)

XPLMGetScreenSize(outWidth, outHeight)

For outWidth, outHeight pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

XPLMGetMouseLocation(outX, outY)

For outX, outY pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

XPLMGetWindowGeometry(WindowID, outnLeft, outTop, outRight, outBottom)

For outLeft, outTop, outRight, outBottom pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Monday, 30 May 2005

Python Interface to the Plugin SDK (V1.00) **(Differences from SDK)**

XPLMGetHotKeyInfo(inHotKey, outVirtualKey, outFlags, outDescription, outPlugin)

For outVirtualKey, outFlags, outDescription, outPlugin pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

*WindowId = XPLMCreateWindow(self, inLeft, inTop, inRight, inBottom, inIsVisible,
inDrawWindowCallback,
inKeyCallback,
inMouseClickedCallback,
inRefcon)*

XPLMDestroyWindow(self, WindowId)

Python Interface to the Plugin SDK (V1.00) (Differences from SDK)

XPLMGraphics

outX, outY, outZ = XPLMWorldToLocal(inLatitude, inLongitude, inAltitude)

outLatitude, outLongitude, outAltitude = XPLMLocalToWorld(inX, inY, inZ)

XPLMGetFontDimensions(inFontID, outCharWidth, outCharHeight, outDigitsOnly)

For outCharWidth, outCharHeight, outDigitsOnly pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Python Interface to the Plugin SDK (V1.00) **(Differences from SDK)**

XPLMMenu

*MenuID = XPLMCreateMenu(self, inName, inParentMenu, inParentItem,
MenuCallback, inMenuRef)*

XPLMDestroyMenu(self, inMenuID)

Python Interface to the Plugin SDK (V1.00) (Differences from SDK)

XPLMNavigation

XPLMFindNavAid(inNameFragment, inIDFragment, inLat, inLon, inFrequency, inType)

For inIDFragment, inLat, inLon, inFrequency pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

XPLMGetNavAidInfo(inRef, outType, outLatitude, outLongitude, outHeight, outFrequency, outHeading, outID, outName, outReg)

For outType, outLatitude, outLongitude, outHeight, outFrequency, outHeading, outID, outName, outReg pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Pass in a list with one value if you want the function to use that value.
Pass in an empty list if you only want data back.

XPLMGetFMSEntryInfo(Index, outType, outID, outRef, outAltitude, outLat, outLon)

For outType, outID, outRef, outAltitude, outLat, outLon pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

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XPLMPlanes

outTotalAircraft, outActiveAircraft, outController = XPLMCountAircraft()

outFileName, outPath = XPLMGetNthAircraftModel(inIndex)

XPLMAcquirePlanes(self, pAircraft, PlanesAvailableCallback, inRefcon)

Pass in “pAircraft” as a list of lists.

XPLMReleasePlanes(self)

XPLMDrawAircraft(inPlaneIndex, inX, inY, inZ, inPitch, inRoll, inYaw, inFullDraw, inDrawStateInfo)

Pass in the “inDrawStateInfo” structure as a list.

Python Interface to the Plugin SDK (V1.00) **(Differences from SDK)**

XPLMPlugin

XPLMGetPluginInfo(inPlugin, outName, outFilePath, outSignature, outDescription)

For outName, outFilePath, outSignature, outDescription pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

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XPLMProcessing

XPLMRegisterFlightLoopCallback(self, inFlightLoopCallback, inInterval, inRefcon)

XPLMUnregisterFlightLoopCallback(self, inFlightLoopCallback, inRefcon)

Python Interface to the Plugin SDK (V1.00) (Differences from SDK)

XPLMUtilities

VirtualKeyDescription = XPLMGetVirtualKeyDescription(VirtualKey)

SystemPath = XPLMGetSystemPath(SystemPath)

PrefsPath = XPLMGetPrefsPath(PrefsPath)

DirectorySeparator = XPLMGetDirectorySeparator()

PathOnly, FullPath = XPLMExtractFileAndPath(FullPath)

*RetVal, outFileNames, outIndices, outTotalFiles, outReturnedFiles =
XPLMGetDirectoryContents(inDirectoryPath, inFirstReturn, inFileNameBufSize,
inIndexCount)*

XPlaneVersion, XPLMVersion, HostID = XPLMGetVersions()

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XPUIGraphics

XPGetWindowDefaultDimensions(inStyle, outWidth, outHeight)

For outWidth, outHeight pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

XPGetElementDefaultDimensions(inStyle, outWidth, outHeight, outCanBeLit)

For outWidth, outHeight, outCanBeLit pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

outWidth, outCanBeLit = XPGetTrackDefaultDimensions(inStyle)

*outIsVertical, outDownBtnSize, outDownPageSize, outThumbSize, outUpPageSize,
outUpBtnSize = XPGetTrackMetrics(inX1, inY1, inX2, inY2, inMin, inMax, inValue,
inTrackStyle)*

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XPWidgets

XPGetWidgetGeometry(inWidget, outLeft, outTop, outRight, outBottom)

For outLeft, outTop, outRight, outBottom pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

XPGetWidgetExposedGeometry(inWidgetID, outLeft, outTop, outRight, outBottom)

For outLeft, outTop, outRight, outBottom pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

WidgetDescriptorLength = XPGetWidgetDescriptor(inWidget, outDescriptor, inMaxDescLength)

Pass in "outDescriptor" as an empty list.

XPAddWidgetCallback(self, inWidget, inNewCallback)

XPDestroyWidget(self, inWidget, inDestroyChildren)

outWidgetID = XPCreateCustomWidget(self, inLeft, inTop, inRight, inBottom, inVisible, inDescriptor, inIsRoot, inContainer, WidgetCallback)

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XPWidgetUtils

XPUCreateWidgets(inWidgetDefs, inCount, inParamParent, ioWidgets)

Pass in “ioWidgets” as an empty list.

Python Interface to the Plugin SDK (V1.00) **(Differences from SDK)**

PythonScriptMessaging (Unique to the PythonInterface)

NumberOfScripts = PI_CountScripts()

ScriptId = PI_GetNthScript(inIndex)

ScriptId = PI_FindScriptBySignature(inSignature);

PI_GetScriptInfo(ScriptId, outName, outSignature, outDescription)

EnableStatus = PI_IsScriptEnabled(inScriptId)

EnableStatus = PI_EnableScript(inScriptId)

PI_DisablePlugin(inScriptId)

PI_SendMessageToScript(self, inScriptId, inMessage, inParam)

Pass in None instead of inScriptId to send to all scripts.

Python Interface to the Plugin SDK (V1.00) **(Differences from SDK)**

PythonSBUtilities (Unique to the PythonInterface)

This module will send text to various areas.
It also redirects stdout and stderr.

In windows, if you use my standalone Python Interface Plugin Console app, the text will be displayed there as well.
This is good for debugging startup problems.

In linux it will be written to the terminal.

On the mac there is only the plugin control panel at the moment.

SandyBarbourDisplay()

This will send text to the top widget listbox in the python interface control panel.

SandyBarbourClearDisplay()

This will clear the text in the top widget listbox in the python interface control panel.

SandyBarbourPrint()

This will send text to the bottom widget listbox in the python interface control panel.

SandyBarbourClearPrint()

This will clear the text in the bottom widget listbox in the python interface control panel.