wxPython and wxFormBuilder

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a GUI toolkit for Python

wxPython

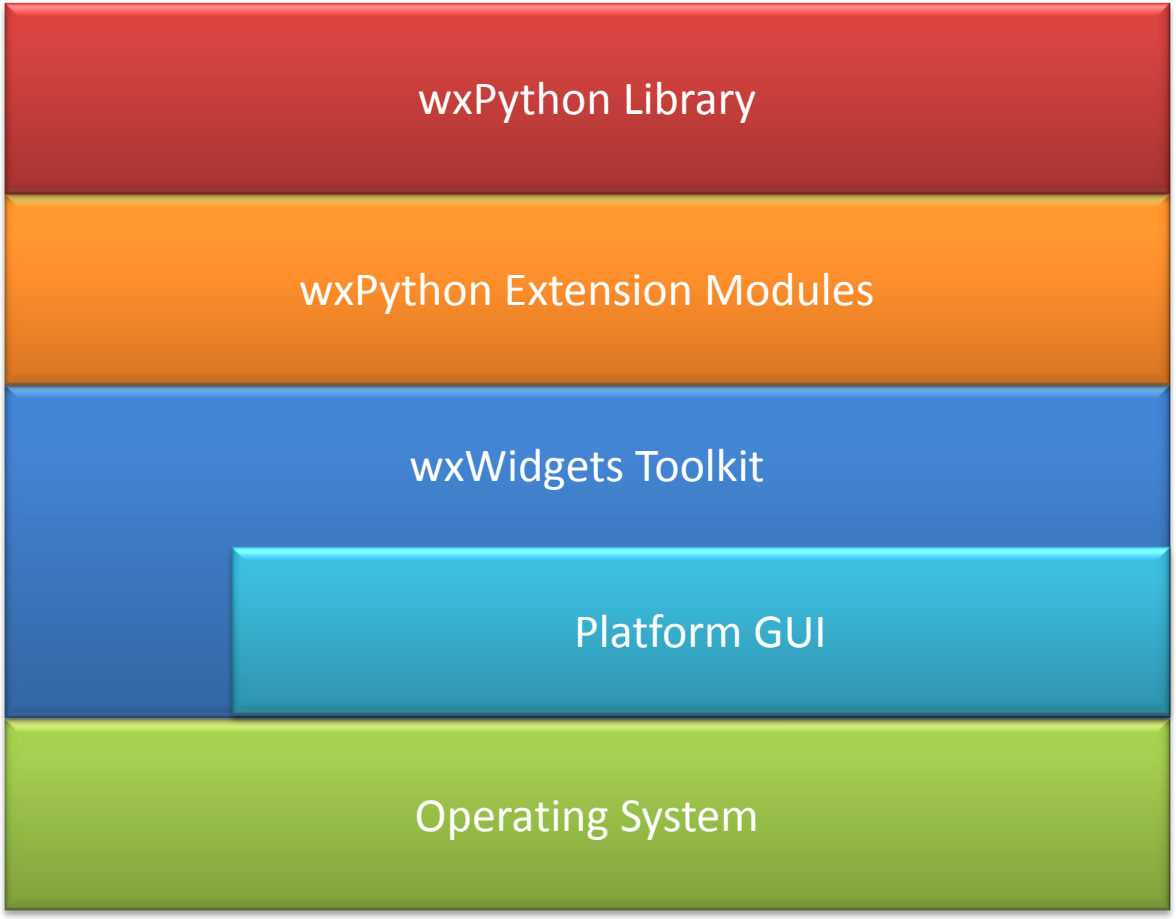
Introduction to wxPython

wxPython is a GUI toolkit for Python.

- Download: http://wxpython.org/
- Built upon the **wxWidgets C++ toolkit**
  - See http://wxWidgets.org/
- Cross platform
  - Windows, Linux, Unix, OS X
  - Uses native widgets/controls, plus many platform independent widgets.

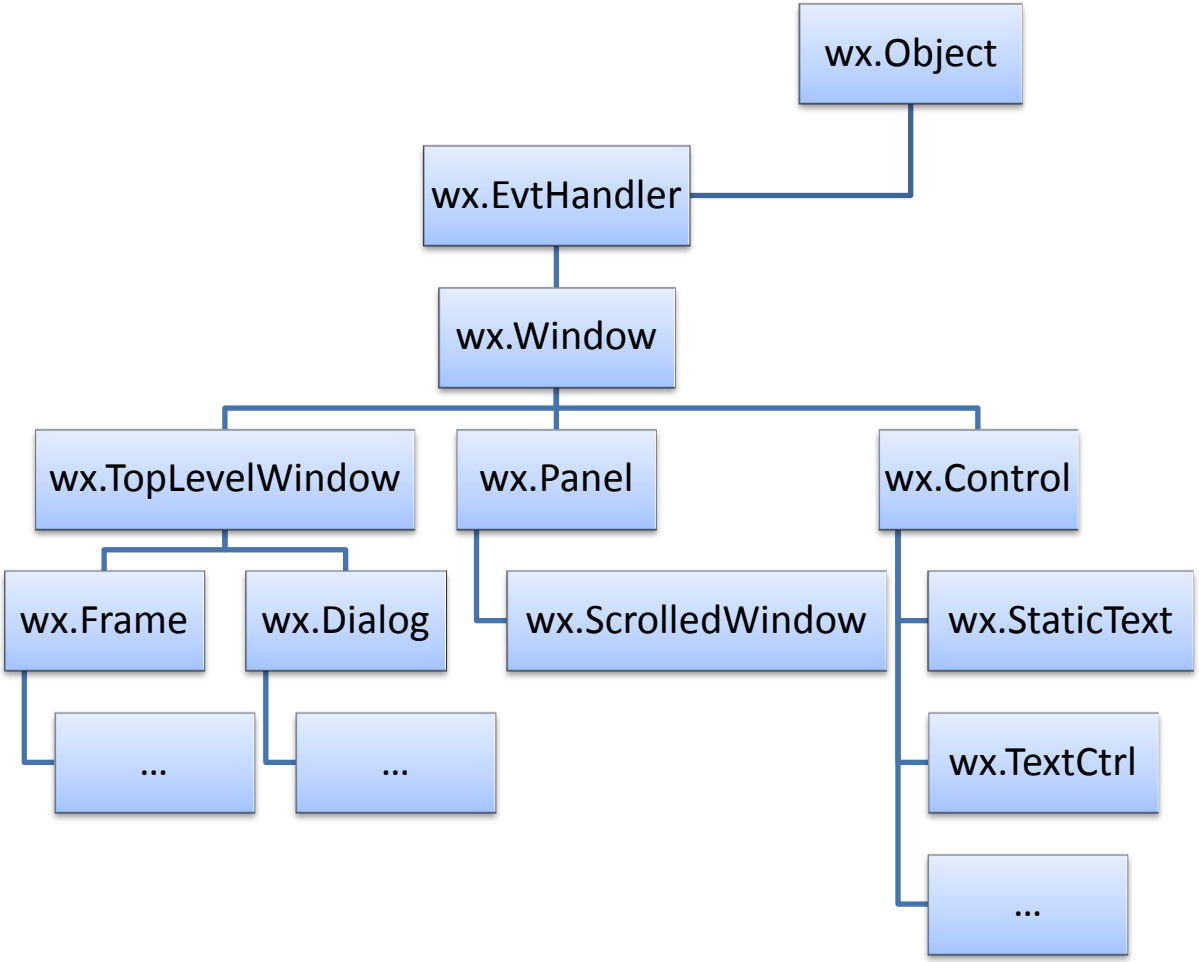
Reference: http://wxpython.org/OSCON2008/wxPython-Advanced-OSCON2008.pdf

Architecture



Reference: http://wxpython.org/OSCON2008/wxPython-Advanced-OSCON2008.pdf

Partial Class Hierarchy



Reference: http://wxpython.org/OSCON2008/wxPython-Advanced-OSCON2008.pdf

Windows or Frames?

- A **wx.Window** is the base class from which all visual elements are derived.
  - buttons, menus, etc
- What we normally think of as a program window is a **wx.Frame**.

Reference: http://wiki.wxpython.org/Getting%20Started

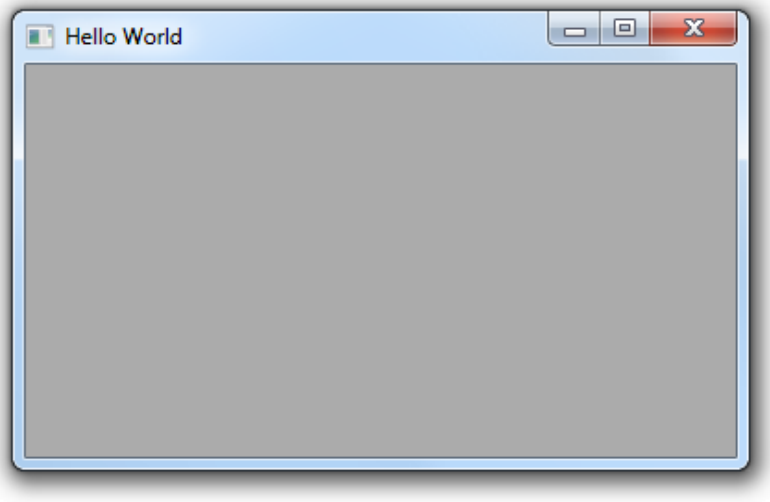
Getting started with wxPython

http://wiki.wxpython.org/Getting%20Started

- A First Application: "Hello, World“
- Building a simple text editor

A First Application: "Hello, World"

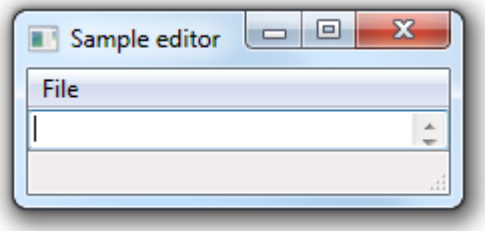
```
#!/usr/bin/env python
import wx

# Create a new app, don't redirect stdout/stderr to a window.
app = wx.App(False)

 # A Frame is a top-level window.
frame = wx.Frame(None, wx.ID_ANY, "Hello World")

frame.Show(True) # Show the frame.
app.MainLoop()
```

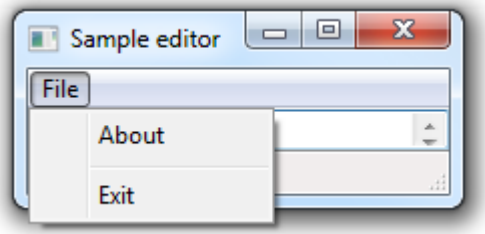


Reference: http://wiki.wxpython.org/Getting%20Started

A Simple Text Editor with Menu

```
import wx
class MainWindow(wx.Frame):
    def __init__(self, parent, title):
        wx.Frame.__init__(self, parent, title=title, size=(200,100))
        self.control = wx.TextCtrl(self, style=wx.TE_MULTILINE)
        self.CreateStatusBar() # A Statusbar in the bottom of the window
        filemenu = wx.Menu() # Setting up the menu.
        # wx.ID_ABOUT and wx.ID_EXIT are standard IDs provided by wxWidgets.
        filemenu.Append(wx.ID_ABOUT, "&About", " Information about this program")
        filemenu.AppendSeparator()
        filemenu.Append(wx.ID_EXIT, "E&xit", " Terminate the program")
        # Creating the menubar.
        menuBar = wx.MenuBar()
        menuBar.Append(filemenu, "&File") # Adding the "filemenu" to the MenuBar
        self.SetMenuBar(menuBar)  # Adding the MenuBar to the Frame content
        self.Show(True)
app = wx.App(False)
frame = MainWindow(None, "Sample editor")
app.MainLoop()
```





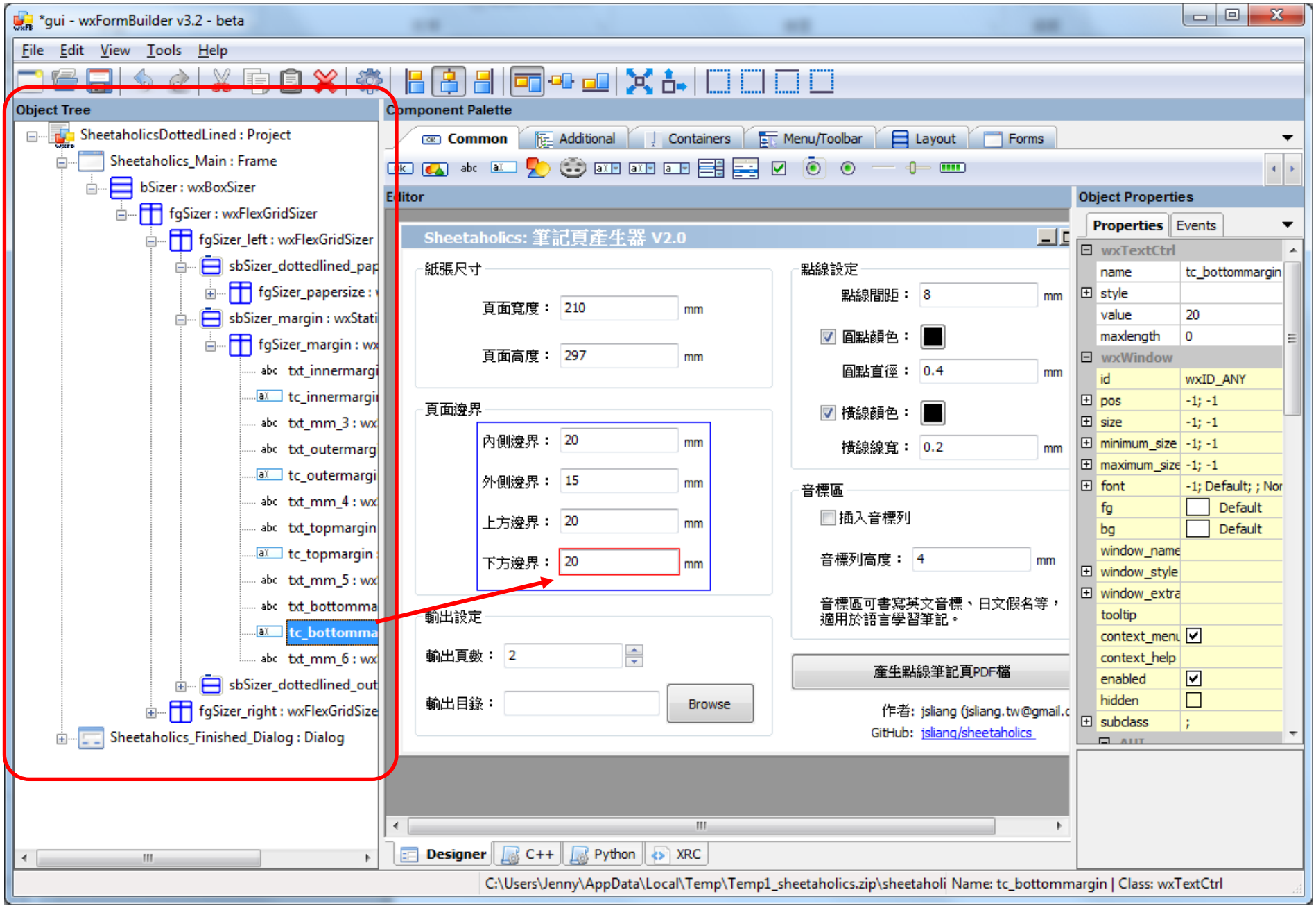
Reference: http://wiki.wxpython.org/Getting%20Started

GUI designer application for wxWidgets toolkit

wxFormBuilder (wxFB)

Introduction to wxFB

- **wxFormBuilder** is an open source GUI designer application for **wxWidgets** toolkit.
  - a visual development tool
  - File extension: *.fbp
    - can emit C++ (**.h* & **.cpp*), **Python** (**.py*) and XRC (**.xrc*) codes
- **wxFormBuilder** have a rich set of supported widgets.
  - http://en.wikipedia.org/wiki/WxFormBuilder


*gui - wxFormBuilder v3.2 - beta
File Edit View Tools Help
Object Tree
SheetaholicsDottedLined : Project
Sheetaholics_Main : Frame
bSizer : wxBoxSizer
fgSizer : wxFlexGridSizer
fgSizer_left : wxFlexGridSizer
sbSizer_dottedlined_pap
fgSizer_papersize :
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Sheetaholics_Finished_Dialog : Dialog
Component Palette
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Containers
Menu/Toolbar
Layout
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Sheetaholics: 筆記頁產生器 V2.0
紙張尺寸
頁面寬度： 210 mm
頁面高度： 297 mm
頁面邊界
內側邊界： 20 mm
外側邊界： 15 mm
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輸出頁數： 2
輸出目錄：
Browse
點線設定
點線間距： 8 mm
圓點顏色：
圓點直徑： 0.4 mm
橫線顏色：
橫線線寬： 0.2 mm
音標區
插入音標列
音標列高度： 4 mm
音標區可書寫英文音標、日文假名等，適用於語言學習筆記。
產生點線筆記頁PDF檔
作者: jsliang (jsliang.tw@gmail.c
GitHub: jsliang/sheetaholics
Designer
C++
Python
XRC
Object Properties
Properties
Events
wxTextCtrl
name tc_bottommargin
style
value 20
maxlength 0
wxWindow
id wxID_ANY
pos -1; -1
size -1; -1
minimum_size -1; -1
maximum_size -1; -1
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fg Default
bg Default
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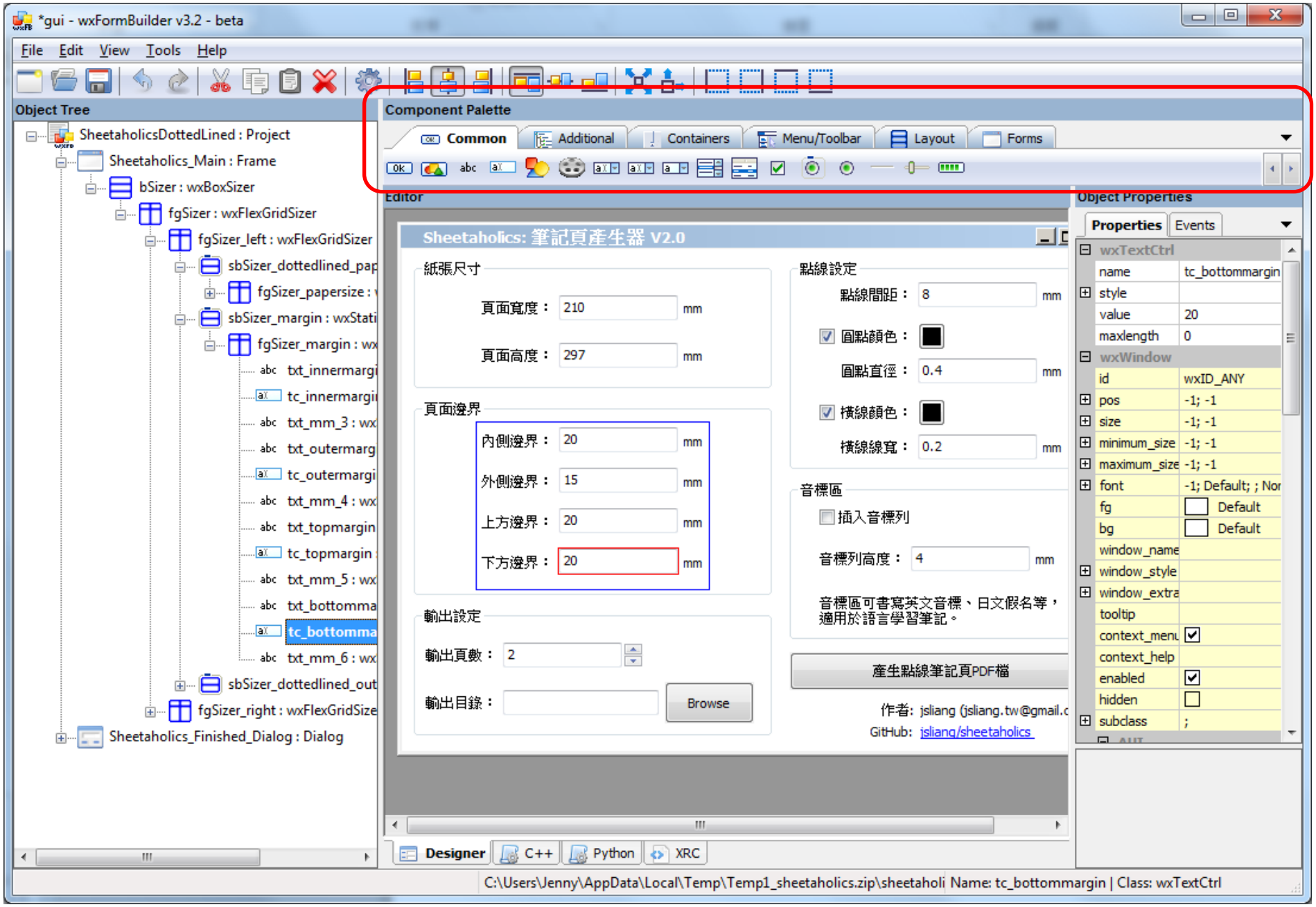
Name: tc_bottommargin | Class: wxTextCtrl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GitHub: jsliang/sheetaholics
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wxTextCtrl
name tc_bottommargin
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value 20
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wxWindow
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pos -1; -1
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minimum_size -1; -1
maximum_size -1; -1
font -1; Default; ; Nor
fg Default
bg Default
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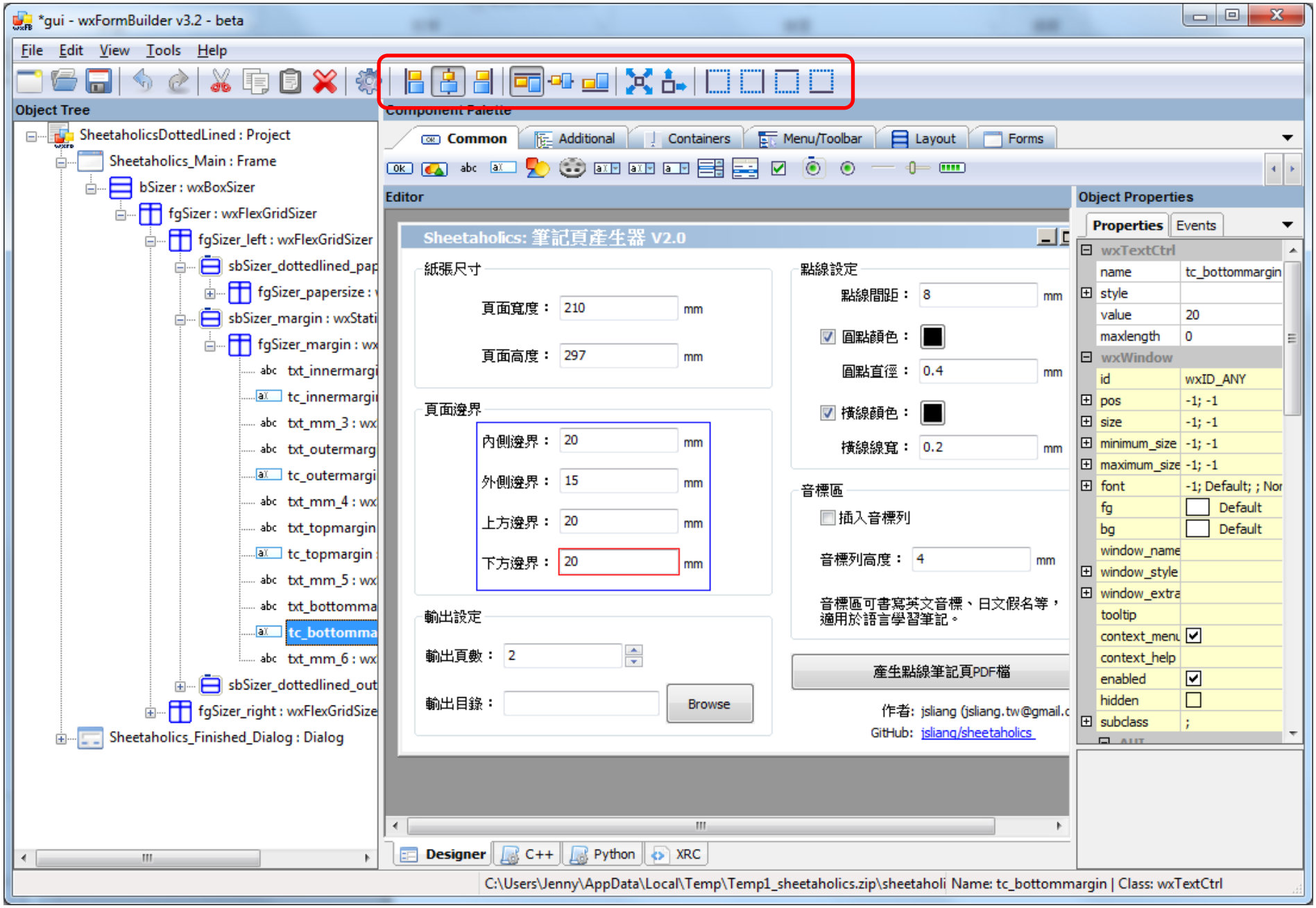
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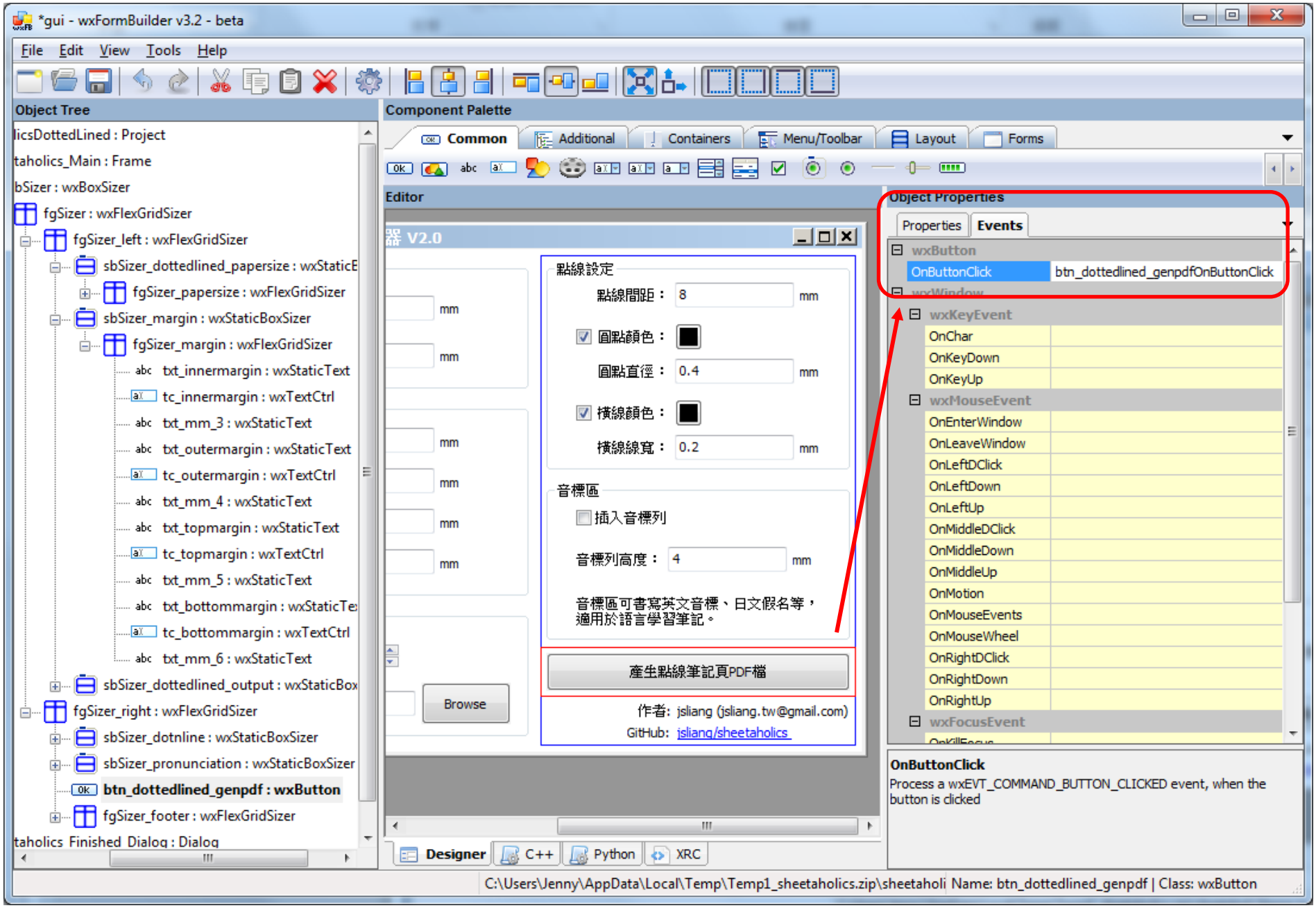
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btn_dottedlined_genpdfOnButtonClick
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OnLeftDClick
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OnMiddleDClick
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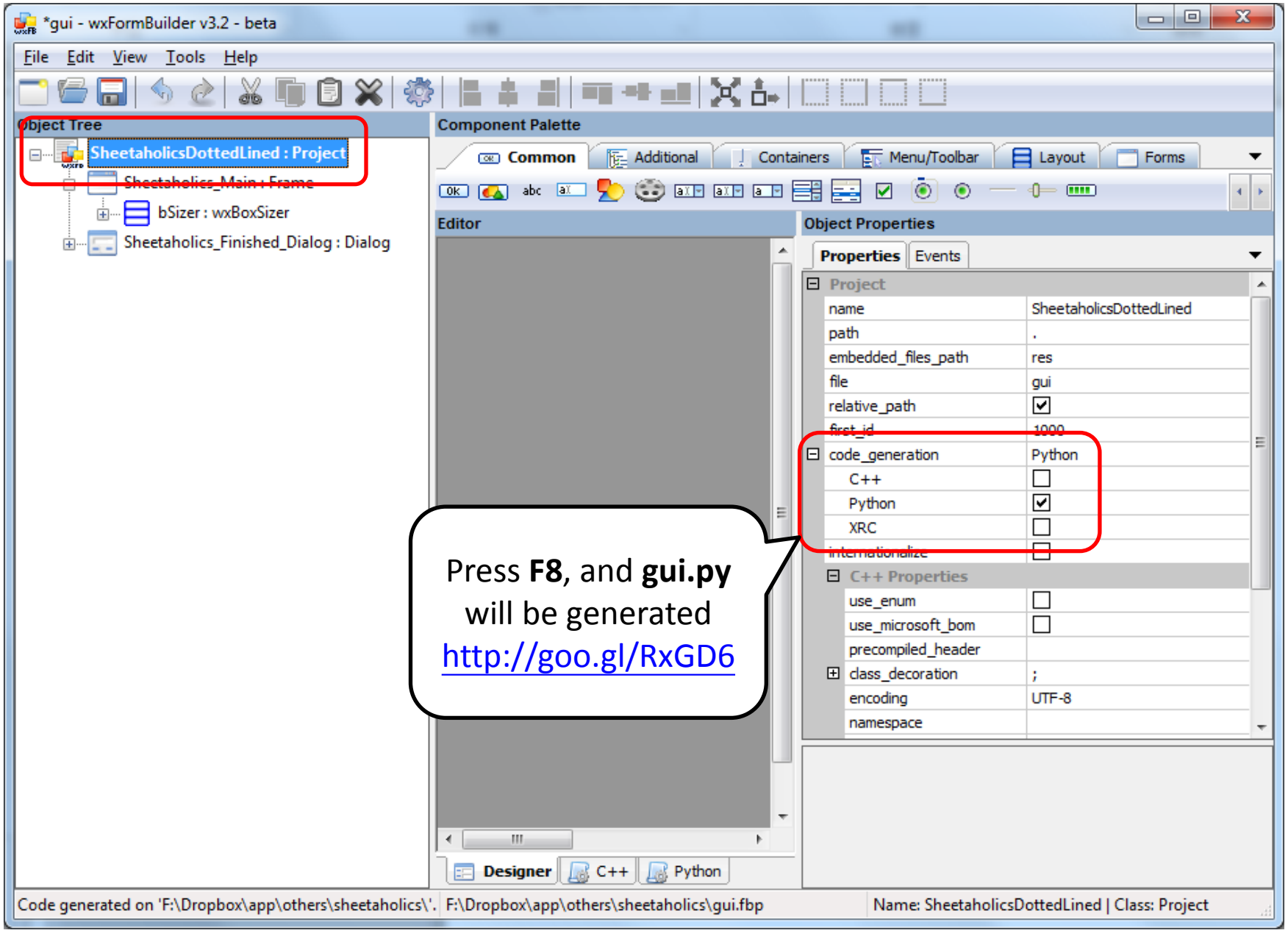
Name: btn_dottedlined_genpdf | Class: wxButton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Common
Additional
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Menu/Toolbar
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C++
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use_enum
use_microsoft_bom
precompiled_header
class_decoration
;
encoding
UTF-8
namespace
Press F8, and gui.py will be generated
http://goo.gl/RxGD6
Designer
C++
Python
Code generated on 'F:\Dropbox\app\others\sheetaholics\'.
F:\Dropbox\app\others\sheetaholics\gui.fbp
Name: SheetaholicsDottedLined | Class: Project

Event Handlers (1/2)

```
# file: gui.py (generated by wxFB)
import wx
import wx.xrc

###########################################################################
## Class Sheetaholics_MainFrame
###########################################################################

class Sheetaholics_Main ( wx.Frame ):

    def __init__( self, parent ):
        ... ( codes for layout )

        # Connect Events
        self.btn_dottedlined_genpdf.Bind( wx.EVT_BUTTON, self.btn_dottedlined_genpdfOnButtonClick )

    def __del__( self ):
        pass

    # Virtual event handlers, override them in your derived class
    def btn_dottedlined_genpdfOnButtonClick( self, event ):
        event.Skip()
```

Event Handlers (2/2)

```
# file: main.py
import gui  # import gui.py, which was generated by wxFB
import wx

class Sheetaholics_MainFrame( gui.Sheetaholics_MainFrame ):  # inherit gui.Sheetaholics_MainFrame
    def __init__( self, parent ):
        gui.Sheetaholics_MainFrame.__init__( self, parent )

    # handler for Sheetaholics_MainFrame event
    def btn_dottedlined_genpdfOnButtonClick( self, event ):
        ... ( event handler contents here )

class SheetaholicsMain(wx.App):
    def OnInit(self):
        self.m_frame = Sheetaholics_MainFrame(None)
        self.m_frame.Show()
        return True

app = SheetaholicsMain(0)
app.MainLoop()
```

References

- wxWidgets
  - http://wxwidgets.org/
- wxPython
  - http://wxpython.org/
  - http://wiki.wxpython.org/How%20to%20Learn%20wxPython
  - http://wiki.wxpython.org/Getting%20Started
- wxFormBuilder
  - http://wxformbuilder.org/
  - http://sourceforge.net/apps/mediawiki/wxformbuilder/index.php?title=Tutorials
  - http://en.wikipedia.org/wiki/WxFormBuilder

Q&A