

Pycon India 2009, IISc



# GUI Using Python – PyGTK and Glade

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**Too Many Choices?**

PyFLTK

Pygame

Pyglet

PythonCard

PyGTK

PySide

PyQt

TkInter

wxPython

No Standard



GUI Tool available

There are

some factors

that decides

the GUI tool

भारतीय रिज़र्व बैंक  
RESERVE BANK OF INDIA

6BE 904445

केन्द्रीय सरकार द्वारा प्रत्याभूत  
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500

पाँच सौ रुपये

मैं धारक को  
पाँच सौ रुपये  
भरना करने का  
बन्धन देता हूँ।

I PROMISE TO  
PAY THE BEARER  
THE SUM OF FIVE  
HUNDRED RUPEES

श्री राजीव गान्धी  
राज्यपाल

G. V. S. Rao  
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Money



Linux User

OR



Windows User



Linux and Windows User



# A GNOME User



**gnome**

# A KDE User



kde let you know. what is Freedom

What

is

PyGTK ?



python

+



Y

PyGTK



Username:

Easy to create your own GUI

Options

Language

Session



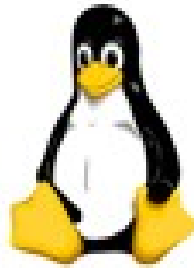
Suspend



Restart



Shut Down

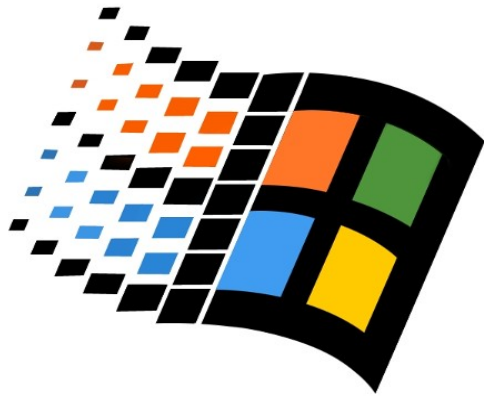


ITS FOSS !!  
Free And Open Source Software



PyGTK is Free Open Source Software

**Let's have a threesome**



**PyGTK supports Multiplatform Applications**



What  
is  
GTK ?

# GTK (GIMP ToolKit)



Library

for creating

Graphical User Interfaces





# PyGTK Programming Basics

**Import**  
**required**  
**Libraries**

Create a Window

Pack

Widgets into it

Set

Appropriate Signals

to

Widgets



Connect Signals

to

Callback Functions

Uses **main loop**

to start

**GTK+** event

processing loop

# Putting it all together

```
import pygtk
pygtk.require('2.0')
import gtk                                     #import libraries

class WelcomeMsg:
    def __init__(self):
        window = gtk.Window()                 #create a window
        window.set_title("Welcome")
        window.set_border_width(10)
        window.set_size_request(200,100)
        window.connect("destroy", self.quit)

        vbox = gtk.VBox()
        window.add(vbox)

        button = gtk.Button("Press Me !")
        button.connect("clicked",self.printMessage,"Welcome To Pycon India
                                                                2009,IISc")
        vbox.pack_start(button,True,True,0)   #pack widgets
```

```
button = gtk.Button("Close")
button.connect("clicked",self.quit)
vbox.pack_start(button,True,True,5)
```

#connect signals to callback

```
window.show_all()
```

```
def printMessage(self,widget,data):
    print data
```

#callback function

```
def quit(self,widget):
    gtk.main_quit()
```

#callback function

```
def main(self):
    gtk.main()
```

#main loop

```
if __name__ == "__main__":
    p = WelcomeMsg()
    p.main()
```



*END of PyGTK*



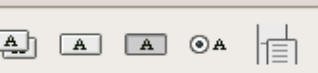
*WELCOME*

*To*

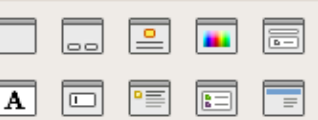
*GLADE*



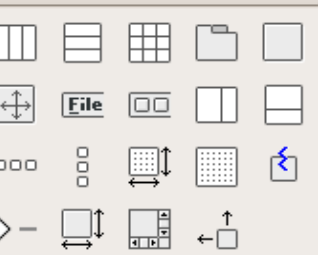
Actions



Toplevels



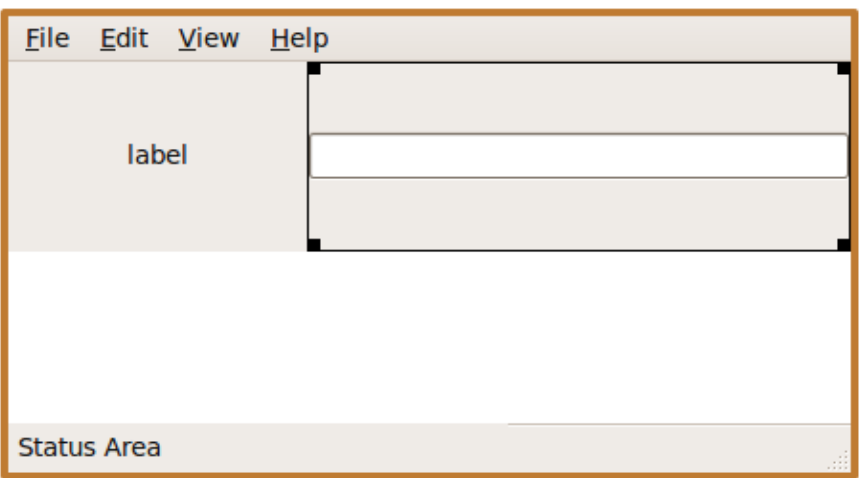
Containers



Control and Display



- > Composite Widgets
- > Tree Model
- > Text Buffers
- > Miscellaneous
- > Specialized Widgets



# GLADE

< search widgets >

- menumenu4
  - menu3 (submenu child)
    - imagemenuitem10
- statusbar1
  - label label2
  - textview1
- hbox1
  - label label1
  - entry1

**Objects**

Text Entry Properties - GtkEntry [entry1]

General Packing Common Signals

Name: entry1

Editable: Yes

Maximum length: 0

Visibility: Yes

Has Frame: Yes

Invisible character: ●

Activates default: No

Width in chars: -1

Text:

X align: 0.00

Truncate multiline: No

Shadow type: In





What  
is  
Glade ?

A



User

Interface

Designer



G  
L  
A  
D  
D  
E

# Rapid Application Development Tool



```
#include <stdio.h>
int main(void)
{
    printf("Hello, World!\n");
    return 0;
}
```

**C/C++**



**perl**



# Used in **Many** Programming Languages



FOSS



TM

open source

User  
Interfaces  
are stored  
in  
**XML** format



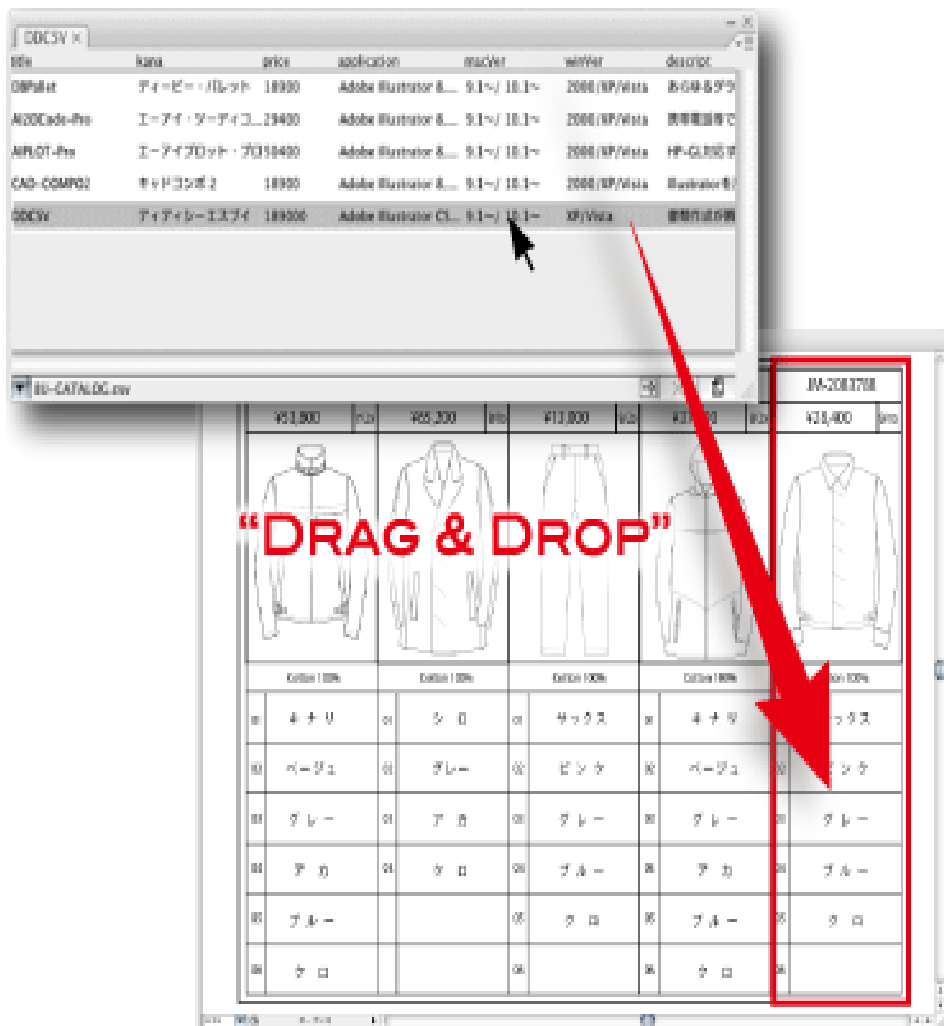
GLADE

GUI

Designing



# A Drag & Drop Interface



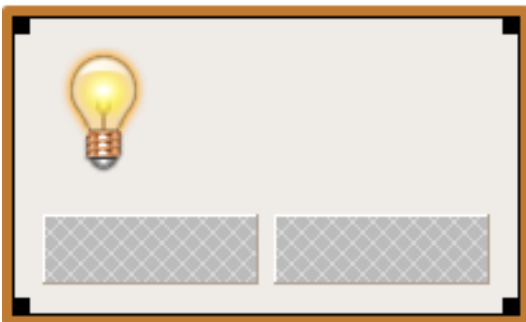
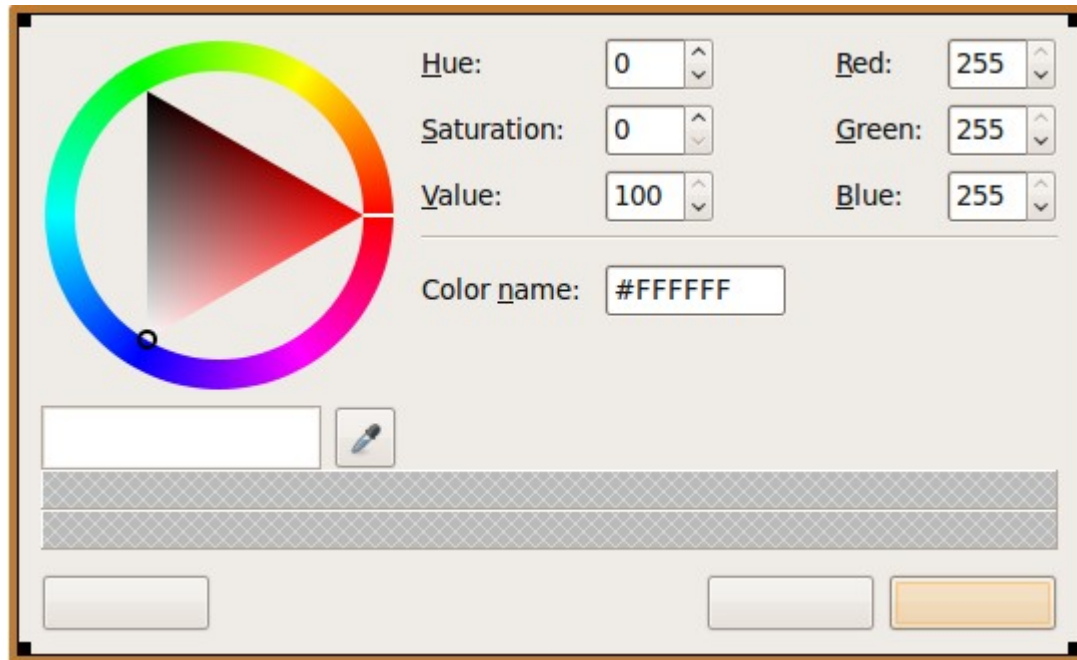
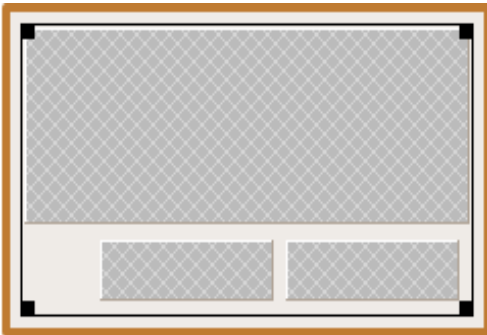
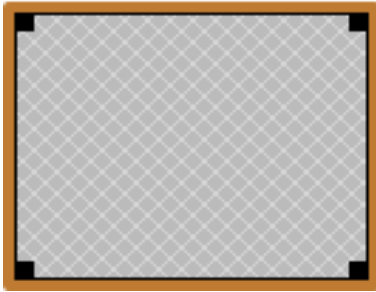
# Design starts by adding

- i. Top Levels

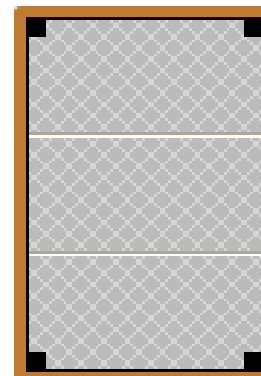
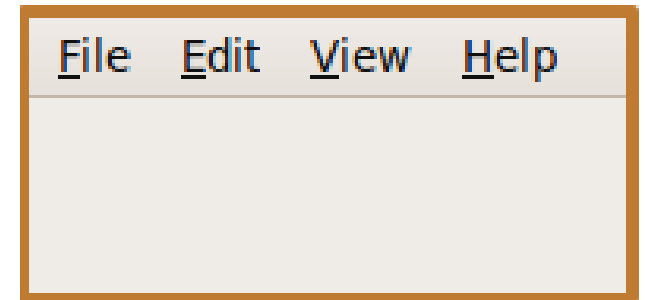
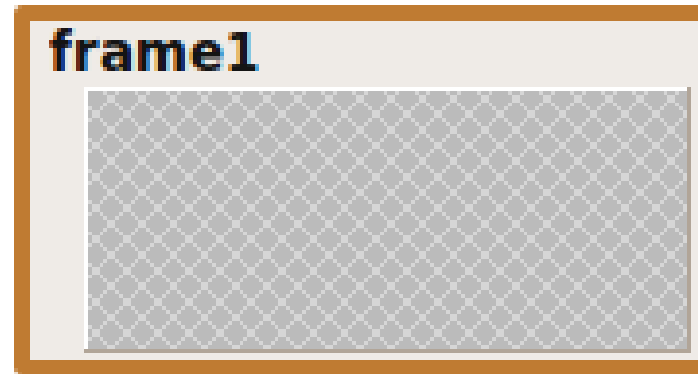
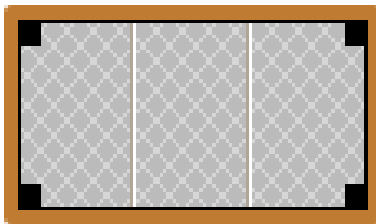
- ii. Containers

- iii. Controls and Displays

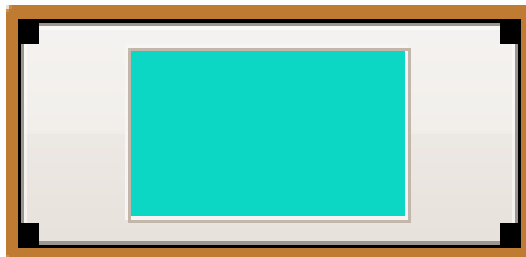
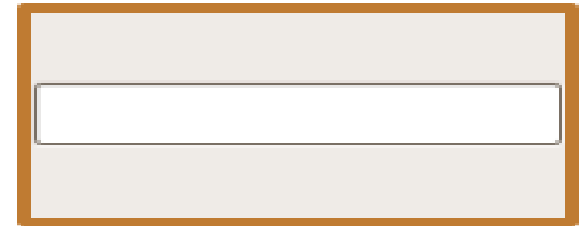
*Top Levels*



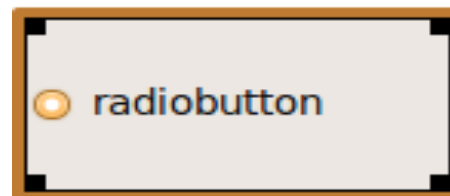
# *Containers*



*Controls  
and  
Displays*



< September >		< 2009 >				
Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3
4	5	6	7	8	9	10







# Set the glade file

```
def __init__(self):  
    self.gladefile = "glade file name"  
    self.wTree = gtk.glade.XML(self.gladefile)
```

# Create a dictionary and Connect it

```
dic = {  
    "on_mainWindow_destroy" : gtk.main_quit,  
}
```

```
self.wTree.signal_autoconnect(dic)
```

*Resources*

[LOGIN](#) >>**Navigation**[Front Page](#)[Title Index](#)[Recent Changes](#)[Find Page](#)[Help](#)[Site Navigation](#)**Actions**[Attach File](#)[Despam](#)[Like Pages](#)[Load](#)[Local Site Map](#)[Spell Check](#)

## GuiProgramming

# GUI Programming in Python



Python has a huge number of GUI frameworks (or toolkits) available for it, from Tkinter (traditionally bundled with Python, using [Tk](#)) to a number of other cross-platform solutions, as well as bindings to platform-specific (also known as "native") technologies.

[GUI Programming in Python](#) is a similar page. It's not apparent to this reporter how the aims of the two differ.

While Python supports arguably a larger number of GUI toolkits than any other language (family), the selection doesn't satisfy a significant number of Python programmers; [Straw Dogs](#), for example, is representative of several others when he [writes](#), "if you want to create a GUI desktop app - don't use Python". Still, for most of us, Python GUI work is more-or-less a treat, and, in any case, more comfortable than the Java-oriented approach [Straw Dogs](#) favors.

## Cross-browser Frameworks

**Package Target****Notes**

[Pyjamas](#) All major Web Browsers

Comprehensive Widget toolkit, Python-to-Javascript compiler and AJAX library. Provides the "V" in MVC. See also [PyjamasDesktop](#)

## Cross-platform Frameworks

The major cross-platform technologies upon which Python frameworks are based include Gtk, Qt, Tk and wxWidgets, although many other technologies provide actively maintained Python bindings.

<http://wiki.python.org/moin/GuiProgramming>



# PyGTK: GTK+ for Python

## What is PyGTK?



PyGTK lets you to **easily create programs with a graphical user interface** using the Python programming language. The underlying GTK+ library provides all kind of visual elements and utilities for it and, if needed, you can develop full featured applications for the GNOME Desktop.

PyGTK applications are truly **multiplatform** and they're able to run, unmodified, on Linux, Windows, MacOS X and other platforms.

Other distinctive features of PyGTK are, besides its **ease of use** and rapid prototyping, its first class accesibility support or the capability to deal with complex multilingual or bidirectional text for fully localized applications.

PyGTK is **free software**, so you can use, modify, distribute and study it with very few restrictions (LGPL license).

## Latest news

### PyGobject 2.19.0 released

Monday 10 August 2009 by Gian Mario Tagliaretti

PyGobject 2.19.0 has been released, this is an unstable release leading to 2.20.0. As usual, it's sources can be fetched [here](#). Check out [the release](#)

## Main Menu

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## Links

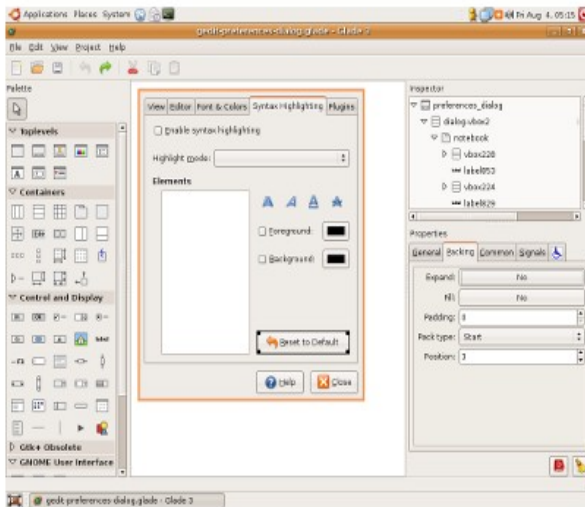
- [GTK+](#)
- [GNOME](#)
- [Python](#)

 [Old stories](#)

<http://www.pygtk.org/>



# Glade - A User Interface Designer



## What is Glade?

Glade is a RAD tool to enable quick & easy development of user interfaces for the **GTK+** toolkit and the **GNOME** desktop environment.

The user interfaces designed in Glade are saved as XML, and by using the **GtkBuilder** GTK+ object these can be loaded by applications dynamically as needed.

By using **GtkBuilder**, Glade XML files can be used in numerous **programming languages** including C, C++, C#, Vala, Java, Perl, Python, and others.

Glade is Free Software released under the **GNU GPL License**

## Current Version: 3.6

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[Windows Binaries](#)  
[MacOSX Binaries](#)

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## Development

[Developers mailing list](#)  
[Bug list](#)  
[Roadmap](#)  
[Wiki](#)

## IRC

**server:** irc.gimp.net  
**channel:** #glade3

## Latest news

### New website design

Monday 20 July 2009 by Javier Jardón

Our website gets a facelift. Enjoy!.

### Glade 3.6.7 "Horizontally Oriented" released

Monday 29 June 2009 by Tristan van Berkom

See the [full announcement](#) for details.



Old stories

<http://glade.gnome.org/>

- Mailing list
- IRC
- Forums





*omega*  
the End

The image features the text "the End" in a bold, orange, sans-serif font. The word "the" is in lowercase, and "End" is in uppercase. Above the word "End", the word "omega" is written in a smaller, green, italicized font. The text is surrounded by several tufts of green grass with long, thin blades. Below the text, there is a faint, semi-transparent reflection of the entire graphic, including the text and the grass, creating a mirrored effect.

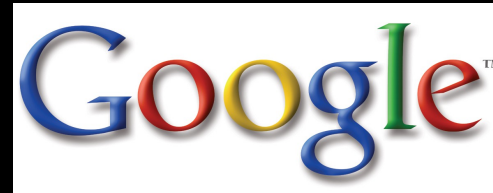




We thank



and



for pictures