

PyGTK + ipython + parasite quick tour

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GTK+

Language bindings

Getting started

More GTK features

The boring stuff at the beginning of a presentation

- ▶ **GIMP Toolkit** (created 1997 for GIMP)
- ▶ written in C
- ▶ works on X11, Windows and OS X (?)
- ▶ GTK \supset GObject \supset GLib

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Python

```
1 import gtk
2
3 w = gtk.Window()
4 w.show_all()
5
6 gtk.main()
```

C

```
1 #include <gtk/gtk.h>
2
3 int main(int argc, char *argv[]) {
4     GtkWidget *w;
5
6     gtk_init(&argc, &argv);
7
8     w = gtk_window_new(GTK_WINDOW_TOPLEVEL);
9     gtk_widget_show_all(w);
10
11     gtk_main();
12
13     return 0;
14 }
```

Vala

```
1  using Gtk;
2
3  static int main(string [] args) {
4      Gtk.init(ref args);
5
6      var w = new Window();
7      w.show_all();
8
9      Gtk.main();
10
11     return 0;
12 }
```

Ruby

```
1 require 'gtk2'  
2  
3 Gtk.init  
4  
5 w = Gtk::Window.new  
6 w.show_all  
7  
8 Gtk.main
```


others

- ▶ C#
- ▶ Java
- ▶ JavaScript
- ▶ Perl
- ▶ R
- ▶ Lua
- ▶ Guile
- ▶ PHP
- ▶ Ada
- ▶ OCaml
- ▶ Haskell
- ▶ FreeBASIC
- ▶ D

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Tools

```
aptitude install python-gtk2 ipython gtkparasite  
python-gtk2-doc
```

Working environment

```
GTK_MODULES=gtkparasite ipython
```

```
import gtk
```

(the Parasite window can be ignored for the moment)

Getting help

```
1 w = gtk.Window()
2
3 w.<tab>
4 w.activate w.activate_default ...
5
6 w.props.<tab>
7 w.props.accept_focus w.props.allow_grow ...
8
9 help(w) # lists signals, properties and methods
```

Extending the demo program

```
1 l = gtk.Label("My label")
2 b = gtk.Button("My button")
3
4 v = gtk.VBox()
5 v.pack_start(l)
6 v.pack_start(b)
7
8 w.add(v)
9
10 w.show_all()
11
12 w.props.title = "A demo program"
```

Signals

```
1 def add_something(widget):  
2     l.props.label += " , and clicked"  
3  
4 b.connect('clicked', add_something)
```

A tour through the widget library

`gtk-demo`

`pygtk-demo`

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UIManager definition

```
1 <ui>
2   <menubar name="MenuBar">
3     <menu action="File">
4       <menuItem action="New" />
5       <separator />
6       <menuItem action="Quit" />
7     </menu>
8     <menu action="Help">
9       <menuItem action="About" />
10    </menu>
11  </menubar>
12  <toolbar name="ToolBar">
13    <toolitem action="New" />
14  </toolbar>
15 </ui>
```

UIManager usage

```
1 import gtk
2
3 w = gtk.Window()
4
5 def do_new(*args):
6     print "new"
7
8 def do_about(*args):
9     print "about"
```

UIManager usage

```
1  actiongroup = gtk.ActionGroup('default')
2  actiongroup.add_actions([
3      ('File', None, 'File'),
4      ('New', gtk.STOCK_NEW, None, None,
5         None, do_new),
6      ('Quit', gtk.STOCK_QUIT, None, None,
7         None, gtk.main_quit),
8      ('Help', None, 'Help'),
9      ('About', gtk.STOCK_ABOUT, None, None,
10         None, do_about),
11  ])
12
13  uiman = gtk.UIManager()
14  uiman.insert_action_group(actiongroup, 0)
15  uiman.add_ui_from_file('uimanager.xml')
```

UIManager usage

```
1 vbox = gtk.VBox()
2 vbox.pack_start(uiman.get_widget('/MenuBar'),
3                 expand=False)
4 vbox.pack_start(uiman.get_widget('/ToolBar'),
5                 expand=False)
6 w.add(vbox)
7
8 w.show_all()
9
10 accelgroup = uiman.get_accel_group()
11 w.add_accel_group(accelgroup)
12
13 w.connect('destroy', gtk.main_quit)
14
15 gtk.main()
```

GTK builder

```
1 import gtk
2
3 builder = gtk.Builder()
4 builder.add_from_file('builder.xml')
5
6 window = builder.get_object('MainWindow')
7
8 window.show_all()
9
10 gtk.main()
```

Glib/GObject events

```
1 window.connect('notify::is-active',
2               toggle_pause_status)
3
4 import glib
5
6 glib.idle_add(run_a_bit_later)
7
8 glib.io_add_watch(some_file.fileno(),
9                  glib.IO_IN, read_more_data)
```

Reference

GTK library reference

<http://library.gnome.org/devel/pygtk/stable/>

GObject subclassing

[http://www.pygtk.org/articles/subclassing-gobject/
sub-classing-gobject-in-python.htm](http://www.pygtk.org/articles/subclassing-gobject/sub-classing-gobject-in-python.htm)