GTK bits and pieces

Hamilton Python Users Group
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https://github.com/HamPUG/meetings/tree/master/2020/2020-07-13/gtk

GTK bits and pieces: Update

- GTK (formerly GTK+, GNOME ToolKit, GIMP ToolKit)
- GTK3 currently at release 3.24 – released 2018-09-03.
- Ubuntu LTS 18.04 to 20.04 upgrade. Change in GTK version.
- GTK Version 3.90 started in 2017.
- 3.92, 3.94, 3.96, 3.98 ~ Feb 2020.
- GTK4 expected around Oct 2020.

GTK bits and pieces: Image Embedding Tool

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Embedding Images as Base 64 text inside your main python program.
- Avoids having to distribute the image file.
- Image can also be used as the favicon
- Refer to: https://github.com/HamPUG/meetings/tree/master/2020/2020-07-13/gtk/image-embedding-tool
- See images embedded in the image_embedding_tool.py code.

GTK bits and pieces: Image Embedding Tool

Current method:
- Convert image to Base64.
- Embed base 64 text as a constant. B64_IMAGE =
- Launch python program and read variable.
- Decode base64 and save image to file in /tmp folder
- Use GTK.Image.new_from_file() to get Image.
- Use this image as favicon or logo, etc.

Desired Method
- Convert image to Base64.
- Embed base64 text as a constant. B64_IMAGE =
- Launch python program and read variable.
- Decode base64 and save image in memory (Pixbuf?)
- Use this memory based image as favicon or logo, etc.

GTK bits and pieces: Python Dialog Messagebox

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```python
def input_dialog(self, title="Heading", text="Enter Data",
                 default_response="", visible=True):

    # Define a little helper function
    def entry_callback(entry):
        # After pressing Enter on entry, then force OK response.
        dialog.response(Gtk.ResponseType.OK)

    dialog = Gtk.MessageDialog(parent = self,
                        modal = True, destroy_with_parent = True,
                        message_type = Gtk.MessageType.QUESTION,
                        buttons = Gtk.ButtonsType.NONE,
                        title = title)

    dialog.format_secondary_text(text)

...continues...
```

Function in a function. Called by "Enter" key on Entry widget.

Response like an "OK" button

GTK bits and pieces: Python Dialog Messagebox

...continued...

```python
    # Create an entry widget
    entry = Gtk.Entry()
    entry.set_text(default_response)
    entry.set_visibility(visible)

    entry.connect("activate", entry_callback)

    dialog.vbox.pack_start(entry, expand=False, fill=False, padding=0)
    entry.show()

    # Run the dialog
    if dialog.run() == Gtk.ResponseType.OK:
        text = entry.get_text()
        dialog.destroy()
        return text
```

Blocking. Waiting for the fake "OK" button

GTK bits and pieces: Python Dialog Messagebox

- Demo Dialog Message box

- Demo Dialog message box with a Timer. i.e. A Pop-up message.

```
time_out = random.randint(1, 5)


        def timeout_now():
            dialog.response(Gtk.ResponseType.OK)

        GLib.timeout_add_seconds(timeout, timeout_now)
```

- Demo Dialog message box with a Timer and some CSS.
- Link:
https://github.com/HamPUG/meetings/upload/master/2020/2020-07-13/gtk/dialog_demo

GTK bits and pieces: GTK Enums and FLAGS

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- Gtk.* 1428 Attributes (constants, enums, flags, methods, etc.)

- Gtk.XXXXX. 263 Constants.
    Gtk.BINARY_AGE, Gtk.HSV, Gtk.INPUT_ERROR

- Gtk.Yyyyyy. 938 Classes
Gtk.AboutDialog, Gtk.AboutDialogClass, Gtk.AboutDialogPrivate

- Gtk.Yyyyyy.XXXXX 121 Classes that have Enums/Flags
Gtk.Align.BASELINE, Gtk.Align.CENTER, Gtk.Align.END

- Gtk.Yyyyyy.XXXXX 665 Enums/Flags in the 121 Classes.

GTK bits and pieces: GTK Enums and FLAGS

Program to extract constants, enums and flags.

```
get_module_classes_constants.py
```

Returns two csv files:

```
Gtk_class.csv
```

...is a list of all the classes for Gtk.

```
Gtk_constant.csv
```

...is a list of all constants, enums or flags. As well as the Gtk class name it includes a type() and an eval() For examples:

```
Gtk.MAJOR_VERSION,<class 'int'>,3
```

```
Gtk.Align.CENTER,<class 'gi.repository.Gtk.Align'>,<enum GTK_ALIGN_CENTER
of type Gtk.Align>
```

GTK bits and pieces: GTK Enums and FLAGS

The program…

```
get_module_classes_constants.py
```

…may be edited to retrieve the two csv files for other python modules. See line 45 of the program. For example the sys and os modules csv files may be generated by changing…

```
module_list = ["Gtk"]
```

to…

```
module_list = ["sys", "os"]
```

GTK bits and pieces: Questions?