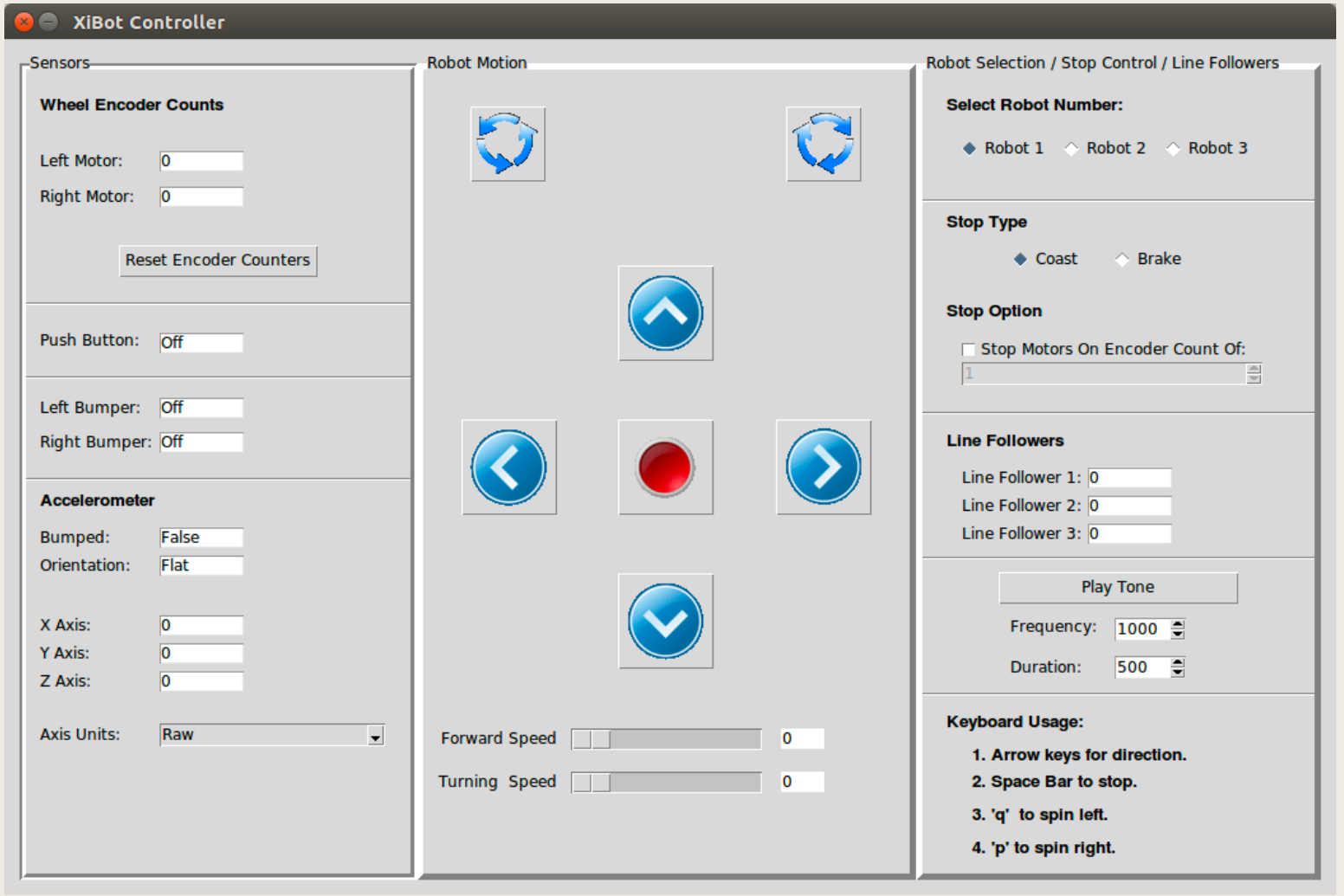
LINGUAGENS DE PROGRAMAÇÃO

Engenharia Informática

GUI

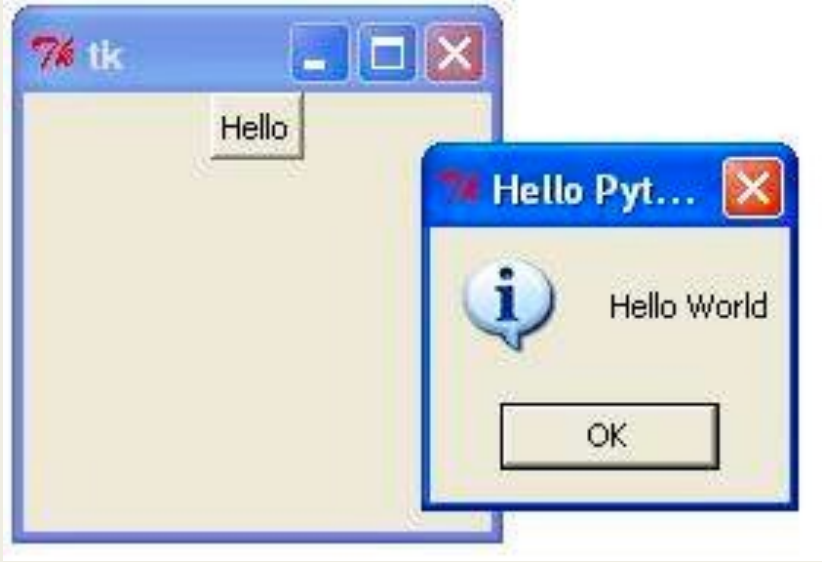
- Graphical User Interface
  - *Python:*
    - **Tkinter** – standard library.
    - PyQt
    - PyGtk
    - …
    - https://wiki.python.org/moin/GuiProgramming

Tkinter


XiBot Controller
Sensors
Wheel Encoder Counts
Left Motor: 0
Right Motor: 0
Reset Encoder Counters
Push Button: Off
Left Bumper: Off
Right Bumper: Off
Accelerometer
Bumped: False
Orientation: Flat
X Axis: 0
Y Axis: 0
Z Axis: 0
Axis Units: Raw
Robot Motion
Forward Speed 0
Turning Speed 0
Robot Selection / Stop Control / Line Followers
Select Robot Number:
Robot 1 Robot 2 Robot 3
Stop Type
Coast Brake
Stop Option
Stop Motors On Encoder Count Of:
Line Followers
Line Follower 1: 0
Line Follower 2: 0
Line Follower 3: 0
Play Tone
Frequency: 1000
Duration: 500
Keyboard Usage:
1. Arrow keys for direction.
2. Space Bar to stop.
3. 'q' to spin left.
4. 'p' to spin right.

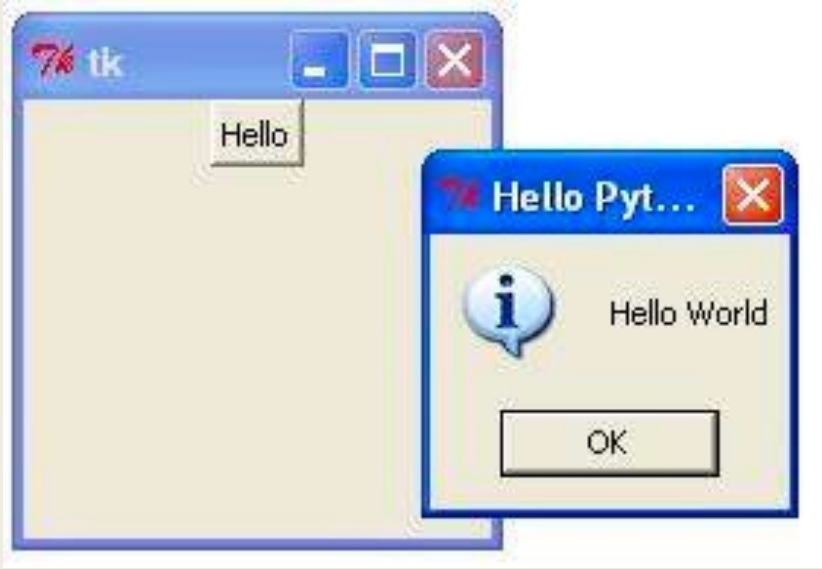
Widgets

- button
- canvas
- checkbutton
- combobox
- entry
- frame
- label
- labelframe
- listbox
- menu
- menubutton
- message
- notebook
- tk_optionMenu
- panedwindow
- progressbar
- radiobutton
- scale
- scrollbar
- separator
- sizegrip
- spinbox
- text
- treeview




```
import tkinter
import tkinter.messagebox

top = tkinter.Tk()

def helloCallBack():
    tkinter.messagebox.showinfo( "Hello Python", "Hello World")

B = tkinter.Button(top, text ="Hello", command = helloCallBack)

B.pack()
top.mainloop()
```

```
top = tkinter.Tk()
top.geometry("800x600")
top.title("Janela de POO")
```

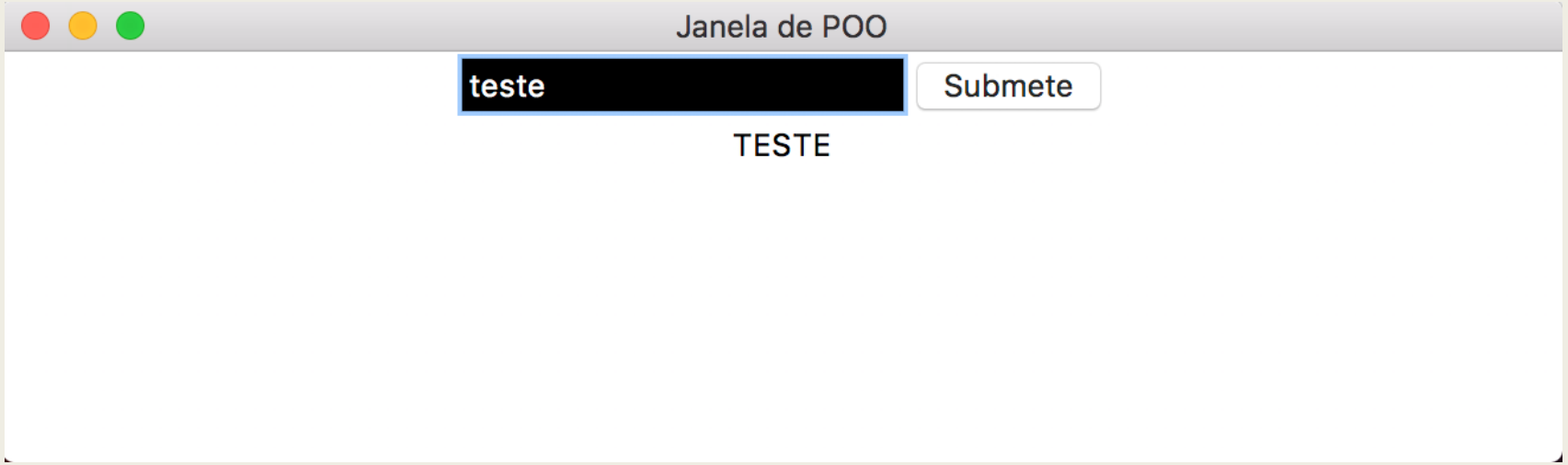



```
import tkinter
import tkinter.messagebox

top = tkinter.Tk()
#top.geometry("800x600")

def helloCallBack():
    tkinter.messagebox.showinfo( "Hello Python", "Hello World")

B = tkinter.Button(top, text ="Hello", command = helloCallBack)

B.pack()
top.mainloop()
```

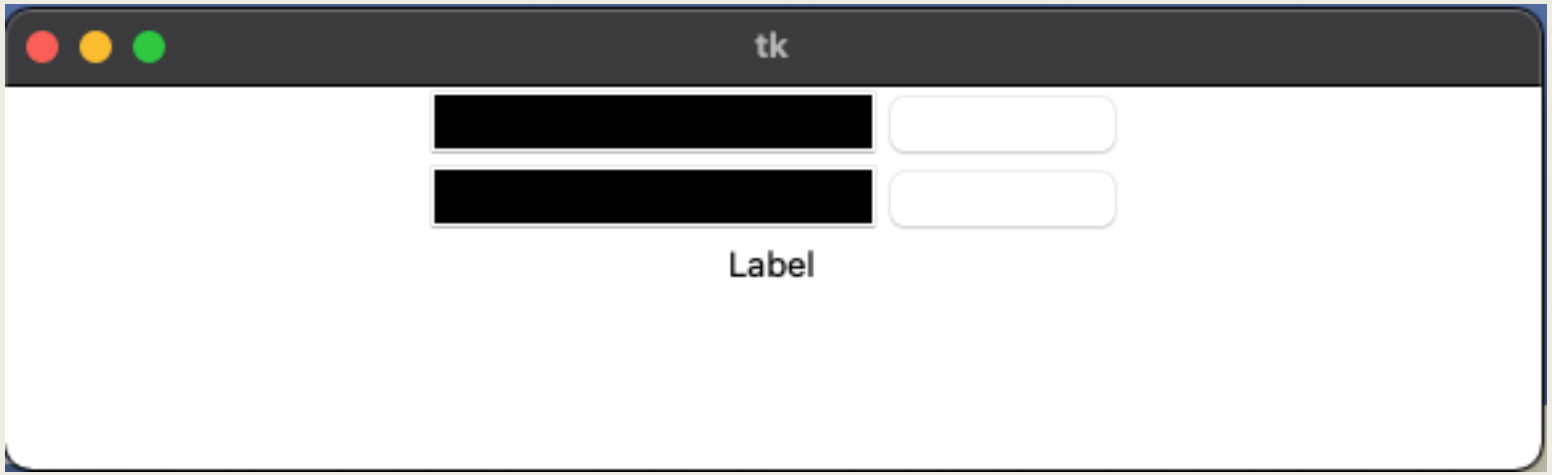
```
import tkinter
import tkinter.messagebox

top = tkinter.Tk()
top.geometry("800x600")
top.title("Janela de POO")

def helloCallBack():
    tkinter.messagebox.showinfo( "Hello Python", "Hello World")

B = tkinter.Button(top, text = "Hello", command = helloCallBack)
L = tkinter.Label(top, text = "Label", bg="black", fg="white" )

L.pack()
B.pack()
top.mainloop()
```

```
import tkinter

top = tkinter.Tk()
top.geometry("800x600")
top.title("Janela de POO")

def toUpperCaseCallBack():
    L['text'] = E.get().upper()

B = tkinter.Button(top, text = "Hello", command = toUpperCaseCallBack)
E = tkinter.Entry(top, bg="black", fg="white")
L = tkinter.Label(top, text = "Label" )

E.pack()
B.pack()
L.pack()

top.mainloop()
```

```
class EntryPack():
    def __init__(self, parent, comando):
        self.frame = tkinter.Frame(parent)
        self.button = tkinter.Button(self.frame, text="Submete", command=comando)
        self.entry = tkinter.Entry(self.frame, bg="black", fg="white")

        self.entry.pack(side=tkinter.LEFT) #Alinhado à esquerda do anterior (parent)
        self.button.pack(side=tkinter.LEFT) #Alinhado à esquerda do anterior (entry)

        self.frame.pack()

    def getText(self):
        return self.entry.get()

top = tkinter.Tk()

def toUpperCaseCallBack():
    L['text'] = entryPack.getText().upper()

entryPack = EntryPack(top,toUpperCaseCallBack)
L = tkinter.Label(top, text = "Label" )
L.pack()
top.mainloop()
```


Janela de POO
teste
Submete
TESTE

```
class EntryPack(tkinter.Frame):
    def __init__(self, parent, comando):
        super().__init__(parent)
        self.button = tkinter.Button(self, text="Submete", command=lambda:comando(self) )
        self.entry = tkinter.Entry(self, bg="black", fg="white")
        self.entry.pack(side=tkinter.LEFT) #Alinhado à esquerda do anterior (parent)
        self.button.pack(side=tkinter.LEFT) #Alinhado à esquerda do anterior (entry)

    def getText(self):
        return self.entry.get()

top = tkinter.Tk()
def toUpperCaseCallBack(obj):
    L['text'] = obj.getText().upper()

entryPack = EntryPack(top,toUpperCaseCallBack)
L = tkinter.Label(top, text = "Label" )

entryPack2 = EntryPack(top,toUpperCaseCallBack)
entryPack.pack()
entryPack2.pack()
L.pack()

top.mainloop()
```


tk
Label

Fim

- Questões?