CSI 32 LECTURE NOTES (Ojakian)

Topic 7: TKinter Fundamentals

OUTLINE
(References: See Webpage)

1. Event-based programming
2. Events and Binding
3. Widgets
4. Geometry Managers

---

1. Event-based programming in general
   (a) Non-linear
   (b) Create event-loop:
      i. Wait for user actions
      ii. Respond depending on user action: Bind "events" to "callbacks"
2. Event loop in Tkinter
   (a) import tkinter
   (b) Open window and loop with Tk(). Close with mainloop().
   (c) To create a basic button: Button([where])
   Then can add "configurations" with `configure`

   PROBLEM 1. *Write a program that simply displays 3 buttons (that do nothing). Have it print before and after entering the event loop.*

   (d) Binding: `bind`(event, callback)
   " $< Button - 1 >$ " is the left click event " $< Return >$ " is the return button event

   PROBLEM 2. *Write a program that displays 1 button which responds to two events: If the button is left-clicked on, then it prints CLICK. If the return key is hit, then it prints RETURN.*

   (e) Other events:
      i. $' < Key >'$
      ii. $' < Enter >'$
      iii. $' < Leave >'$
      iv. etc...

3. Widgets

(a) Another widget: `Canvas`

PROBLEM 3. *Write a program that displays 2 circles, one red, and one green. Clicking on a circle will have it print the corresponding color to the screen.*

(b) Some widgets:

i. Button
ii. Canvas
iii. Label
iv. Checkbutton
v. etc ...

4. Geometry Managers

(a) Grid

PROBLEM 4. *Write a program that makes a 4 by 4 grid of circles that alternate red and green, so that red circles are bound to printing red, and green circles are bound to printing green.*

(b) Pack

Imagine pack commands coming sequentially, with each one putting the object in the "next" spot.

Some modifiers:

i. side = LEFT, RIGHT, TOP, BOTTOM

PROBLEM 5. *Write a program that puts labels at the the 4 sides, indicating left, right, top, bottom.*