CSI 31 LECTURE NOTES (Ojakian)

Topic 15: TKinter Events, Bindings, and More Details

OUTLINE
(References: See Webpage)

1. Geometry Manager
2. Events and Binding
3. Various kinds of events
4. Event object

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1. Geometry Managers

(a) Grid

Use .grid with "row = " and "column = "

PROBLEM 1. *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 2. *Write a program that puts labels at the the 4 sides, indicating left, right, top, bottom.*

ii. Use with multiple Frames

2. Example: Toggle Button

(a) Without using a class

PROBLEM 3. *Modify the last program so that the text appearing in the button toggles, with nothing printed to the console.*

(b) Using a class

PROBLEM 4. *Modify the last program so that it is object-oriented (and allow it to toggle between any two given strings). Do it in a Has-A Button way and a Is-A Button way.*

3. Various Events

Don't forget the quotes!

PROBLEM 5. *Modify the last program with various events (noting that you might need to focus before an event is recognized):*

(a) " $< Button - 3 >''$

(b) " $< Return >''$

(c) " $< Key >''$

(d) " $< Enter >''$

(e) " $< Leave >''$

(f) Etc....

4. More about the Event class

   (a) Whenever an event occurs, an Event object is sent as the one input to the appropriate function or method (called the callback or event handler).

   (b) Some information contained in the Event class:

      i. .widget - the widget on which the event occurred.
      ii. .char - character string for certain events involving key
      iii. .x and .y - x and y coordinates within widget
      iv. .time - a relative time indicator (measured in milliseconds)
      v. Etc...

   (c)

   PROBLEM 6. *Write a program that opens a window and simply waits for left clicks. At each left click it prints the following to the console: the distance traveled since the last click and the time since the last click.*

5. Entry Widgets

   (a) Create with Entry

   (b) .get() to get current string

   (c)

   PROBLEM 7. *Write a program that has two text entries: One for last name and one for first. It also has a button "Show". When it is clicked the current contents are printed in the GUI using a Label widget.*

   Use Lambda expressions as needed.