

LECTURE 38

GUIs WITH TKINTER 2

MCS 260 Fall 2021

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REMINDERS

- Homework 13 due Tue 10am
- No labs next week. TA office hours instead.
- If Proj 4 proposal not yet approved, revise and resubmit by Tue Nov 23.

GOAL

Build a more interesting `tkinter` GUI application.

We'll make a **password generator**.

w_5A2j

digit

capital

symbol

20%

Generate Exit

← editable.

} required elements

← selectable non-letter fraction.

SUBCLASSING TK

A good way to make GUI applications is to subclass `tkinter.Tk` and put GUI setup code in `__init__`.

Then, application data can be stored as class attributes.

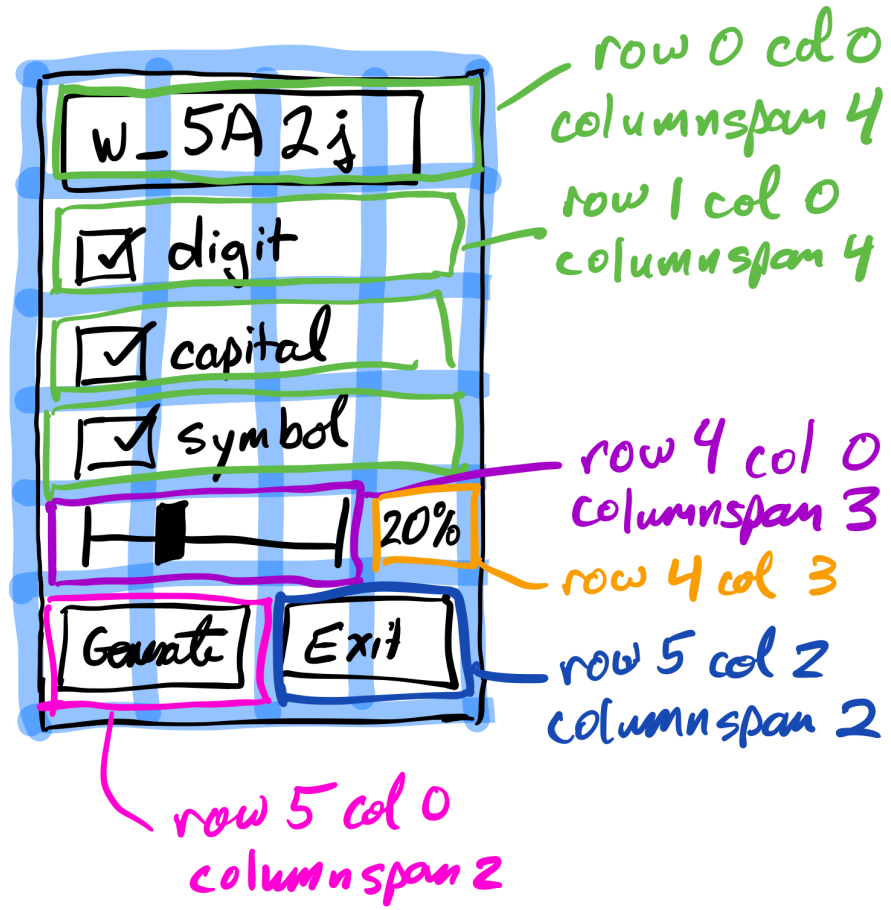
Commands and other callbacks can be methods.

ROWSPAN AND COLUMNSPAN

These options for `.grid` of a widget make it span multiple columns or rows in the layout.

6x4 GRID LAYOUT

ROW COL



TKINTER VARIABLES

`tkinter` offers mutable variable classes designed to work with widgets:

- `tkinter.StringVar` – mutable string
- `tkinter.DoubleVar` – mutable float
- `tkinter.IntVar` – mutable integer

All use `.set(val)` to set, `.get()` to get. They automatically notify widgets that use them of changes.

VARIABLE CHANGE CALLBACKS

`tkinter` variables let us register a function to be called whenever the value changes:

```
tkvar.trace_add("write", callback)
```

The function `callback` is called with three arguments (internal name, internal index, operation). Usually you want to ignore all of these arguments.

REFERENCES

- [Official tkinter documentation](#)
- The [Tk docs tutorial](#) demonstrates lots of features, and shows Python code for all its examples.
- [Unofficial reference manual by John Shipman](#)

REVISION HISTORY

- 2021-11-19 Initial publication