

Python Class 18

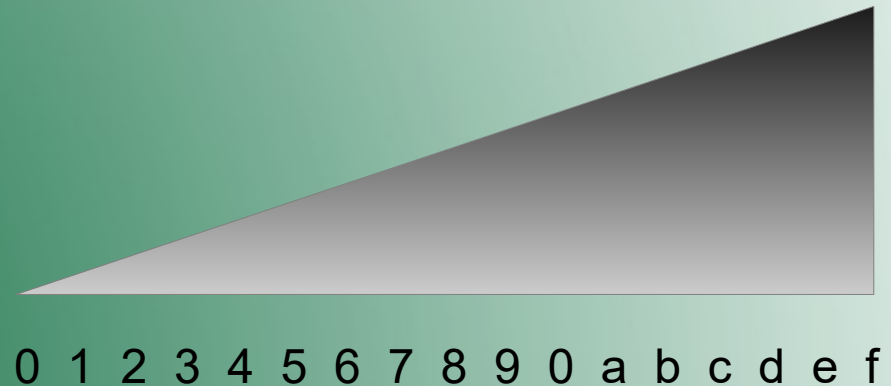
GUI

Colors

- Computers use three primary colors and mix these to make all other colors.
 - R (red)
 - G (green)
 - B (blue)
- Colors use hexadecimal, not binary and not decimal
 - Hex - 0,1,2,3,4,5,6,7,8,9,a,b,c,d,e,f
 - Dec – 0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16
 - Bin – 0, 01, 10, 11, 100, 101, 110, 111, 1000, 1001, 1010, 1011, 1100, 1101, 1110, 1111, 10000

Colors, Cont.

- The numbers tell us how much color there is – 0 is no amount of the color (0%), f is the maximum amount (100%).
- Colors mix in the same way as light – large amounts are brighter and closer to white, small amounts are darker, and closer to black.

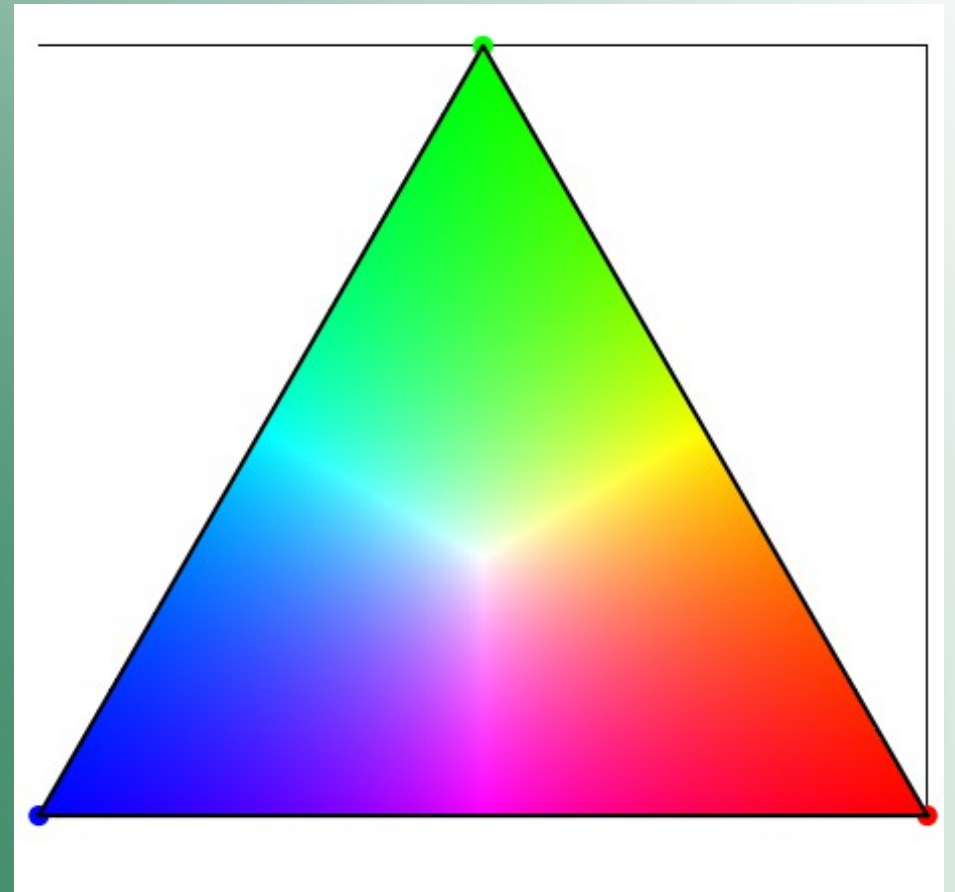


Color names

- You can use these color names
 - 'white'
 - 'black'
 - 'red'
 - 'green'
 - 'cyan'
 - 'yellow'
 - 'magenta'
 - 'blue'

Colors, Cont.

- '#fff' = white
- '#000' = black
- '#f00' = red
- '#0f0' = green
- '#00f' = blue



Colors-Amount of information

- You can also use two hexadecimal numbers or three hexadecimal numbers.
- '#FFFFFFFF' is another way to use white.
- '#000000' is another way to use black.

Changing colors options

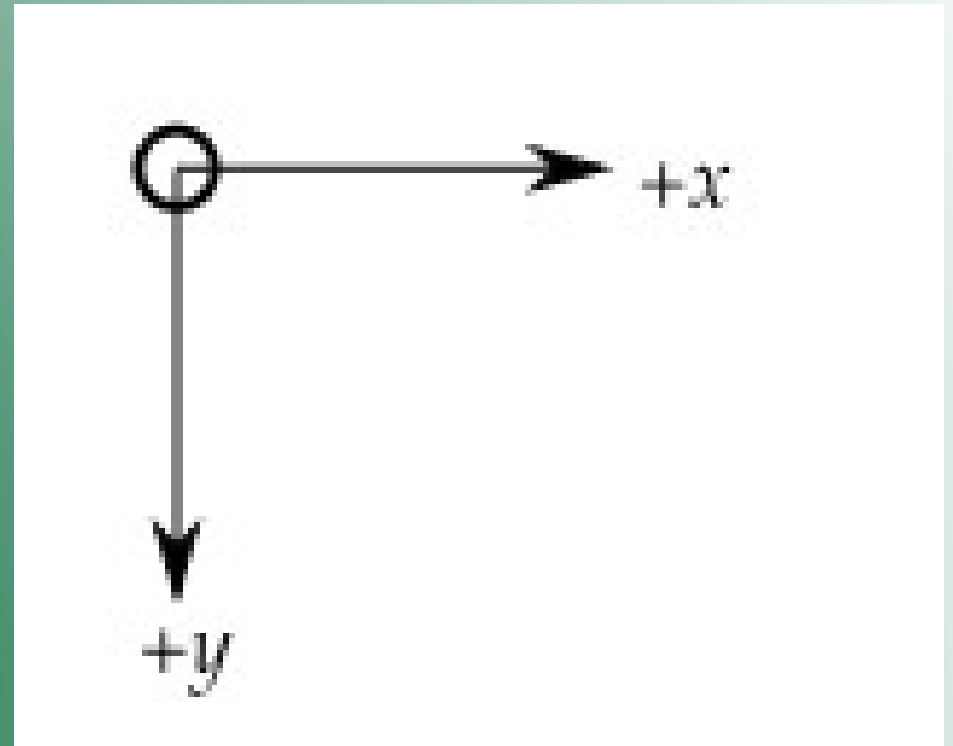
- background =
- foreground =
- activebackground =
- activeforeground =
- Changes the back color
- Changes the text color
- Changes the back color when clicked
- Changes the text color when clicked

*Let's change some colors for button,
entry, and label*



Placing items

- Remember, tkinter starts at the top left corner.



Using pack(), place() and grid()

- `item.pack(exp and = boo, side =)` will put the item in the window
- It is very limited – you can only change the order
- `item.place(x = a, y = b, anchor =)`
- This gives you a lot of control!
- `item.grid(row = x, column = y)`
- This gives you a lot of control for where to put item

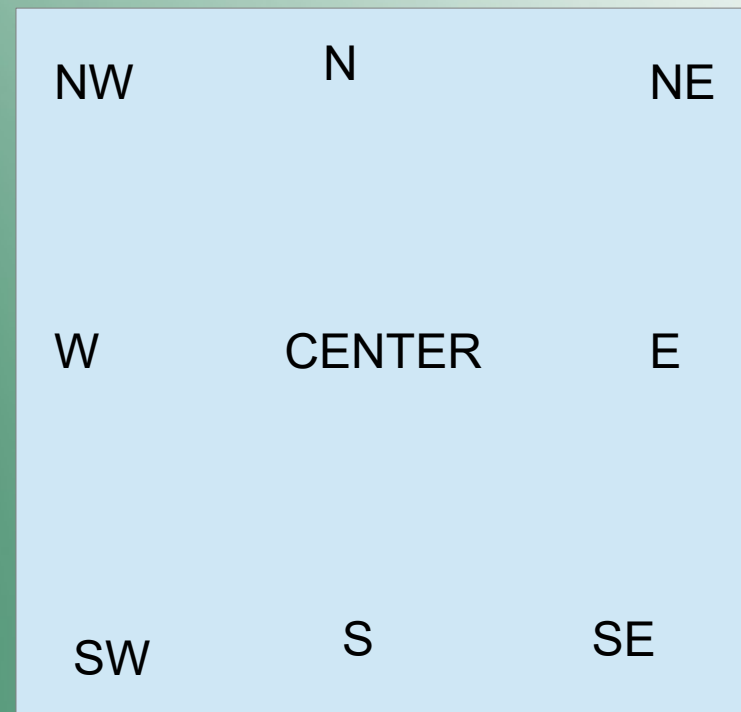
Using pack(), place() and grid()

- `item.pack(exp and = boo, side =)` will put the item in the window
- `item.place(x = a, y = b, anchor =)`
- `item.grid(row = x, column = y)`

You can use `place()` with both `pack()` and `grid`, but you should **NOT** use `grid()` and `pack` together.

Anchor

- There are 9 anchor positions



Side

- There are 4 options



Controlling the main window

- `root.title(“”)`
- `root.configure(option = “”)`
 - background
 - foreground
 - cursor
- This lets you change the title of the window
- Change the cursor, background, etc

Practice setting commands

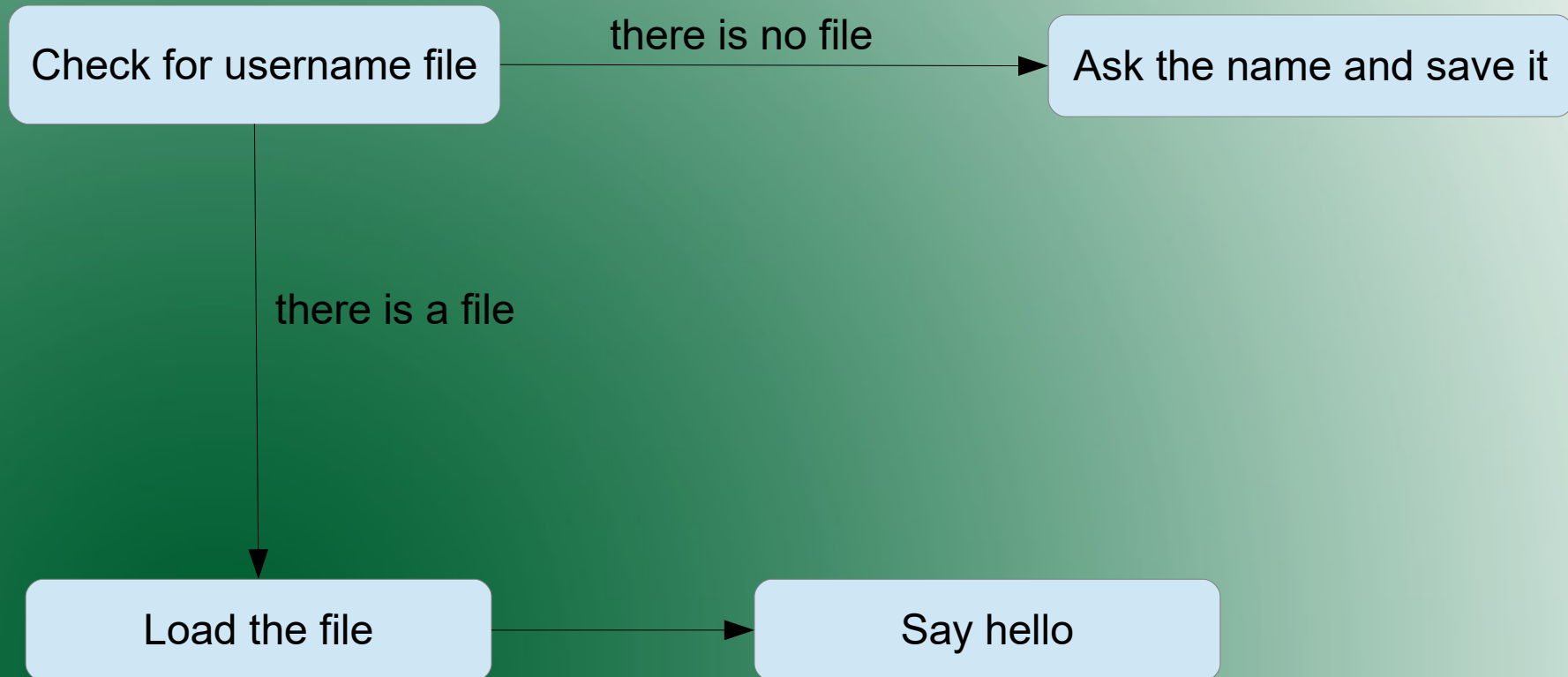
- Let's

Review how to save/load

- You can find the old presentations on my github.
- Did you import pickle?
- Did you create the save file?
- Are you using dump and load correctly?
- Did you close the file?
- Are you using the correct mode (“rb” or “wb”)?

Goal – Program that says Hello

- Use pickle, os, and tkinter



Binding

- Binding connects different buttons or keys to different commands.

```
#item.bind(event, command)
def activate(event):
    item.configure(state = tk.NORMAL)
item.bind('<Button-1>', activate)
#when the left mouse is pressed, activate will be called
```

Uses

- What could you use this for?
- Does Windows use this?
- How about your phone?



Uses

- This is important and really useful!
 - In Windows, CTRL-S can be used to save.
 - In video games, you can bind different buttons or keys to actions – attack, talk, jump, etc.

Common Bindings

- '<Button-1>'
 - '<Button-2>'
 - '<Button-3>'
 - '<Enter>'
 - '<Leave>'
- '<Motion>'
 - '<Motion-B1>'
 - '<KeyPress-a>'
 - '<KeyPress-d>'
 - '<Key-a>'
 - '<Key-w>'
 - '<Key-d>'
 - '<KeyRelease-a>'

These SHOULD be differently but they work the same way – we can fix this, but it is complicated

Experiment

- Let's play with some of the information we learned today.

