

Recursion

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CS151: Computational Thinking: Visual Media

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Project 10 project options

- Not doing extensions? Complete lab Asteroids game and add one gameplay element/feature of your own to it.
 - Addition should use events (keyboard/mouse callbacks, timers, etc) in some useful way.
- Doing extensions? **Either** improve Asteroids game or make your own game.
 - Everyone doing extensions will demo/share your game in class on Wednesday (**2 mins max**).
- You have until **Tuesday noon EST** to let me know if you expect to be doing extensions.
 - You can always back out last minute (e.g. Tuesday night, Wednesday morning).
- Everyone: Make demo video of you playing you game **no longer than 90 seconds**, include in submitted .ZIP file.
 - **Doing extensions and think your internet connection will be unstable for the demo?** You can narrate the 90 sec demo video and send it to me in advance.

Recursion

Ever wonder what would happen if you called a function from inside a function?

```
def fun(x):  
    fun(x)
```

- Called **recursion**. Yes, it is a valid thing we can do!
- Powerful design technique to produce elegant solutions to challenging problems that might otherwise require lots of code.
- When to use recursion? Solution to a complex problem can be expressed in terms of solutions to slightly simpler versions of the original problem.

Example: Factorial function