Notes on Optionals in Swift

* Variables of any type can take on a value or have no value (nil)
* In many other languages, allowing vars to be null is ok, and programmer can use them appropriately
* Since Swift is consumer facing, a null value in an app can cause the app to crash which is bad UX, so to solve this, Swift implements optionals
* Optionals are special type of variable indicated by `?` after variable
  + var foo: Int = 1 //standard definition of integer variable
  + var bar: Int? = 7 //optional definition of integer variable
* In order to use an optional variable, it must be unwrapped
* Easiest way to unwrap is “force unwrap” with `!`
  + print(bar!)
* Force unwrapping is dangerous because it effectively gets around the security that optionals provide and creates a risk of crashing
* Guard/if let statements/optional chaining check value of optional variable before using it
  + “fail gracefully”