Why Does Code Get Complex?

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✧ **Hard to read code**

- **Bad or inconsistent coding style**

- **Hard to read variable & function names**

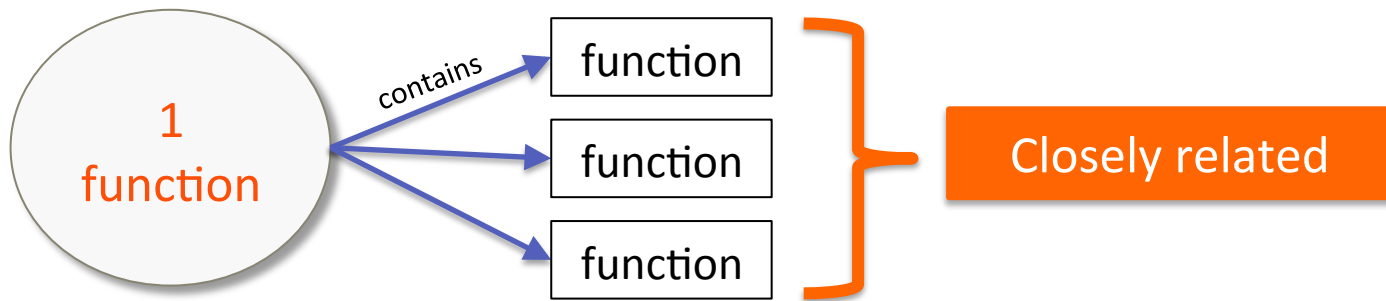- **No comments or API documentation**

LACK OF

High Cohesion & Low Coupling

high cohesion

when smaller pieces of functionality are strongly related to each other within some code boundary

✧ How well does that one thing stick to doing just one thing

MyDailySchedule
wakeUp()
brushTeeth()
caffeine()
work(code)
eatDinner()
createCourseraCourse()
lateSnack(cookies)
loseWeight()
nap()
dragOutOfBed()

MacDailySchedule
on()
flashPrettyLights()
runOS()
sleep()
off()

complex

less complex

low cohesion

high cohesion

loose coupling

least possible dependency of one component on another component

✧ If you change one, you do not have to change the other

Changing iPhone Battery

Changing LG G5 Battery

complex

less complex

tight coupling

loose coupling

Summary

✧ Why software gets complex as it grows

✧ Lack of

- **High cohesion** – how well does one thing stick to doing just one thing

- **Loose coupling** – change in one component doesn't affect another component

✧ Example in a web app

- HTML – presentation, JS – functionality (tight coupling)

- One function does 3 fairly unrelated things (low cohesion)