Common Themes

Some concepts are common and repeated

- In my teaching, at least
- We will cover those now
- I will reference often
- But explain in depth only now

Programming is Communication

You may think: "Prog = make a computer do things"

- But that's not really the case
- Good programmers make code that
    - Can be understood
    - Can be changed
- "Working" is the start
    - Not the end

Coders mostly Change, not Write New

Classes teach you to write new code

- Because you are always learning new things

Work rarely has you write new code

- More often you make changes to existing code
  - Requires you FIND the code
  - Requires you UNDERSTAND the data model
- More time spent debugging
  - Requires you FIND the code
  - Requires you UNDERSTAND the data model

Skimmability

Coders often talk about "readability"

- But we don't READ most code
- We SKIM it
- Reading code is slow
- There is a lot of code

Readability is heavily influenced by familiarity

Write for Skimmability

- Make your code easy to find
- Make the purpose clear
  - Names are VERY important
  - Precision is important
- Whitespace and indentation is important
- Skimming will miss most
  - have the visual focus fall on the key names

THIS COURSE WILL GRADE FOR QUALITY CODE

Complexity is the Enemy

- Complexity makes changing harder
  - Complexity is bad
  - Some complexity is unavoidable
- Abstraction can reduce Complexity
- Abstraction can introduce Complexity
- Must balance abstraction and clarity
- No easy answer
  - Still worth struggling with

Writing for the future

- Many talk about about future of code
- Few talk about the future coders
    - Includes future you!
- Future coders will not have context
    - Names, flow, and focus to supply context
    - Comment address WHY not WHAT
- Examples to come

Summary

Course has common themes

- Programming is Communication
- Time: Debug > Skim > Read > Write
  - Writing is not where most time spent
  - Understanding/comprehension is key
- Skimmability enables easy understanding
  - Names are really important
  - Course will grade for code quality
- Future coders (incl future You) will benefit