Mastery Learning System
Infrastructure for ECE 551

Drew Hilton
Assistant Professor of the Practice
Electrical and Computer Engineering Department
Pratt School of Engineering
Duke University
ECE 551: Programming

- ECE 551: Hardcore intro programming
  - 0->competent programmer in 1 semester
- Programming: learn by doing
  - Natural choice for flipped classroom
- Concept build on each other
  - Mastery learning
  - "Formative" assignments
  - (also evaluative assignments)
Platform:

• Grade Assignments
  • Automatic grading
  • Basically instant
  • Also supports evaluative assignments:
    • Hard deadlines
    • Grade after deadline
• Release Assignments:
  • Pass dependencies-> get next assignment
  • Supports release after date also
Tokens: Rate Limited Grading

- Do not want: tweak and grade and tweak and grade…
  - Wrong? Go learn material, understand, fix
- Discourage behavior with token system
  - Grading costs tokens (e.g., 10/grading)
  - Tokens refresh periodically (e.g., 30 every 12 hours)
- Different token types (different kinds of assignments)
  - Different pools of tokens
  - Different refresh rates
- Token costs scale up after soft deadline
  - Encourage staying on track/timely completion
  - Scaling set by token type