

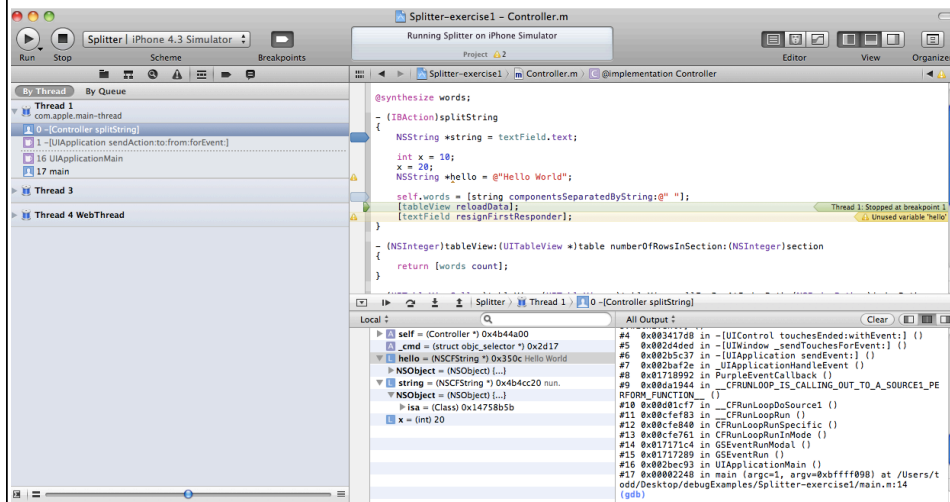
Topics

- Debugging Best Practices
- Hands-On Debugging Exercises

Debugging: Life after NSLog

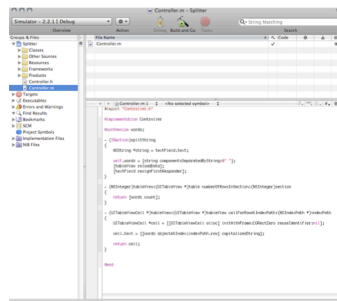
- Two ways to debug
 - NSLog
 - `NSLog(@" Does this work? %@", shouldWork);`
 - Caveman debugging
 - Debugger
 - Best way to fix bugs
 - Set breakpoints, step through code, inspect variables
 - `llvm` and `lldb` or `gcc` and `gdb` (Apple has moved to `llvm` and `lldb`)

Debug Demo



Today's Debugging Exercises

- Download the debugging examples from the course website:
 - <http://research.engineering.wustl.edu/~todd/cse436/debugExamples.zip>
- Open the Splitter-working project
- Build-and-Go to make sure it works



- **Run Warmup-working to see what it does**
- **Run Splitter-working to see what it does**
- **For each of the 5 exercises:**
 - 1) In the project, select Run
 - 2) Determine what the error is
 - 3) Locate the problematic line
 - 4) Fix the bug
 - 5) Understand why the fix worked

Debugging Hints

- <http://research.engineering.wustl.edu/~todd/cse436/debugExamples.zip>
- **Warmup-exercise1**
 - should be quick and easy
- **Warmup-exercise2**
 - hint 1: check the debugger window
 - hint 2: look at the last line printed out
- **Warmup-exercise3**
 - hint 1: check the debugger window
 - hint 2: check the API
- **Splitter-exercise1**
 - hint: the problem is not with the Objective-C code
- **Splitter-exercise2**
 - hint: check the debugger window