CSSE 220

Unit Testing GUI Applications

Questions

Why do software engineers do unit testing?

UNIT TESTING REVIEW

Why do unit testing?

- Get code right
- Keep code right as changes are made
- Confirm our understanding of the method specification before implementing it
- Provide documentation
- Confirm pieces in isolation so we don't have to worry about them during integration (when we put code together)

How do we test GUI applications?

- Should we test GUI applications?
 - Reasons for unit testing are still applicable to GUI applications
- How do we test GUI applications?
 - Automated UI Testing
 - Manual Testing by interacting with the GUI
 - Unit testing with a testing framework (JUnit)

Unit Testing vs. GUI Testing

- Unit Testing
 - "White Box Testing" (code access)
 - Tests pieces in isolation
 - Ensure smallest portions of application function
- GUI / Integration Testing
 - "Black Box Testing" (no code access)
 - Ensures application meets requirements
 - Tests entire application as a whole

Testing with JUnit

UNIT TESTING MODEL

Testing GUI application effectively

- Decouple Model and User Interface
- Model:
 - State of the Application
 - Application logic
 - Application data
- User Interface:
 - GUI components that user interacts with
 - Use to interact with model
- Write unit tests for the model

Testing TicTacToe

 In groups of 3 study the TicTacToe code in tttEasier and tttHard

 Explain why it would be challenging to write unit tests for tttHard

 Explain why it would be easier to write unit tests for tttEasier

Work time

Be sure everyone is getting a chance to drive.

TEAM PROJECT