

CSSE 220

Unit Testing GUI Applications

Checkout *TicTacToeTesting* project from SVN

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