CS 485
Advanced Object Oriented Design

Review

Spring 2017

BlackJack Demo

- Have two computers setup

- Rig the decks to demonstrate certain features

1. Play SDL Blackjack - 1 human player

2. Play TextUI Blackjack - 1 human player

3. Play SDL Blackjack - 1 human, 1 Table Info AI, 1 Card Counter AI

    → human gets blackjack

4. Play SDL Blackjack - 1 human, 1 Table Info AI, 1 Card Counter AI

    → human gets to split the hand

5. Play SDL Blackjack - 1 human, 1 Table Info AI, 1 Card Counter AI

    → dealer goes bust

Object Oriented Design Principles

- Design: isolate what may change to lessen impact (data or functionality)
  - encapsulate
    - inheritance
    - composition

- Communicate your design
  - Speak the language

- No perfect solution: trade offs
  - some terribly wrong solutions, though.

Exercise

- How are each of the following concrete examples a good demonstration of the given OO Design Principle?

  - Describe the Design Principle

  - Describe the concrete example

  - Describe how the concrete example fits the specific criteria from the Design Principle

  - Describe why the concrete example benefits from the applied Design Principle

- Review the next team's answers

SOLID

1. S: single responsibility

   double CurrencyConverter::convert(const Currency&, const Currency&)

   vs

   Money CurrencyConverter::convert(const Money&, const Currency&)

2. O: open/closed: Open for extension, closed for modification

   Template Method

3. L: objects are replacable with subtypes (with no loss of correctness) Liskov

   Account/SavingsAccount/CheckingAccount

4. I: many client-specific interfaces are better than one general interface

   SDLApp: clickable, textable

5. D: depend on abstraction, not concrete classes

   visitor

Course Evaluations

- Email from the University

- Class Schedule Website