



CS 315

Software Design

Homework 9

Redesigning for Reuse

Due: Nov. 24, 11:30 PM

Objectives

- To gain experience designing with reuse in mind
- To gain experience using design patterns

Assignment

In this assignment, you will modify your design from Homework 8 to support more varieties of poker. PokerNews lists hundreds of variants of poker. We will only look at "shared card" variants, and even a small set of those that are most similar to Texas Hold 'Em.

Your goal in this assignment should be to reuse much of your design from last week, but extending it so that it can accommodate the variety of poker games described briefly below. Also, think about how to design your system so that other future extensions might be possible. You should turn in paper copies of updated class diagrams along with an English explanation of how your design allows for the variety of poker games described and in what ways it accommodates other kinds of extensions.

As you are doing your design, try to apply the design principles and design patterns we have been discussing in class. They might not all make sense, so don't force a design just to demonstrate a pattern. Use the ones that make sense for this problem. For some patterns, the Template Method pattern, in particular, it's important to see actual code for what would go into the template method so that it is clear how the subclass methods are used to customize the template method. Therefore, please include the code of any Template Methods in your English design discussion.

Poker Games

In the list below, I identify the ways in which each game differs from Texas Hold 'Em. In any way that is not discussed, you should assume that it is the same as Texas Hold 'Em.

Cool Hand Luke

The lowest community card is wild. All cards of this rank become wild, whether they are community cards or in an individual player's hand.

Pineapple

Each player is dealt 3 cards instead of 2. Each player must discard one card before any community cards are dealt.

Crazy Pineapple

Each player is dealt 3 cards instead of 2. Each player must discard one card after the first three community cards are dealt.

Triple-Flop Hold 'Em

6 community cards are used instead of 5. Betting is done after the 2nd, 4th, and 6th cards are dealt.

Tahoe

Each player is dealt 3 cards instead of 2. The player's hand must contain exactly 2 of these 3 cards and 3 of the community cards.

Omaha Hold 'Em

Each player is dealt 4 cards instead of 2. The player's hand must contain 2 of these 4 cards and 3 of the community cards.

Super Hold 'Em

Each player is dealt 3 cards instead of 2. The player may use either 2 or 3 of his/her own cards when deciding on the 5 card hand from the 8 cards available.

Grading

Reusability of classes	15 points
Use of interfaces, inheritance and composition	20 points
Use of design patterns	15 points
Completeness (all games listed above are in the design)	15 points
Use of UML diagrams	15 points
Discussion of design	20 points

Turning in your work

To turn in your work, please submit on Ella your UML diagrams (as a jpg, gif, or pdf) and your design discussion, preferably as a pdf file.