

COMP 2071 - Data Structures

Lab 4 - Card Game

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Ford Polia

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- Networking / Backend Logic
- Client Application
- GUI

ADT - Card and Pile

- Doubly linked list with Card as the nodes

Card

- Enumerations are used for Color and Symbol
 - Colors: RED, YELLOW, GREEN, BLUE, WILD
 - Symbols: ZERO, ONE, TWO, THREE, FOUR, FIVE, SIX, SEVEN, EIGHT, NINE, SKIP, REVERSE, DRAW_TWO, WILD, WILD_DRAW_FOUR
 - Wild cards are always the wild color

Hand

- Extends Pile
 - Has methods to view to get the entire contents as an ArrayList and remove any card no matter the position

Deck

- Extends Pile
- Has a method to shuffle the cards by taking them from the top of the deck and placing them in a random position in the deck
 - Repeats the for the number of cards in the deck times a multiplier

Application

Client

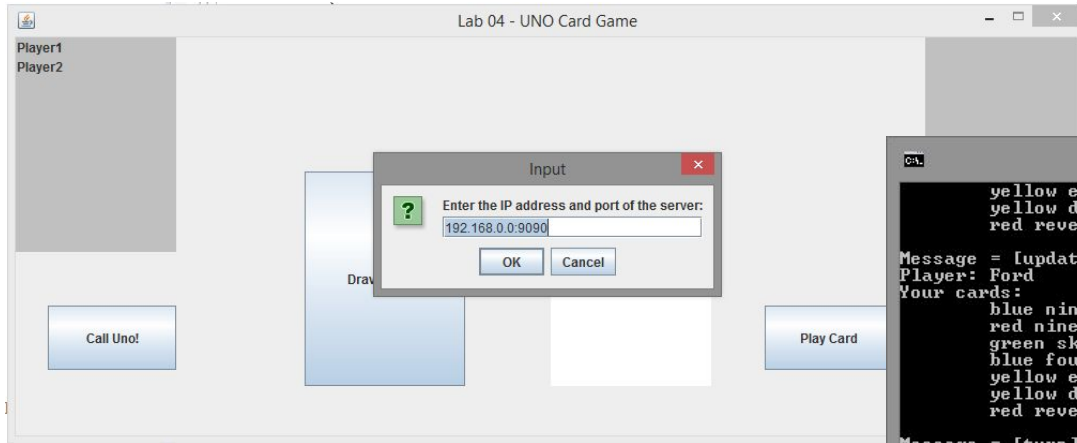
- Each player runs the client
- Up to 10 can communicate with a server

Server

- Separate console application that the clients connect to
- Can have multiple ports so multiple servers can be running on one computer

Application

InputManager Interface - Allows the application to use either the console or a GUI as the input. The GUI ended up not working out.



```
C:\> java -jar client.jar Ford

yellow eight
yellow draw_two
red reverse

Message = [update]
Player: Ford
Your cards:
    blue nine
    red nine
    green skip
    blue four
    yellow eight
    yellow draw_two
    red reverse

Message = [turn]
The card on the discard pile is a red three
Would you like to draw a card? <Y/N>
n
What card would you like to play?
red nine
In card = red nine
You placed a red nine
Thanks. Send a message to others? <Y/N>
```

Issues and Concerns

- Networking Issues - Data loss between client and server
- GUI Integration

Take-aways

- Don't ever do a project this big again