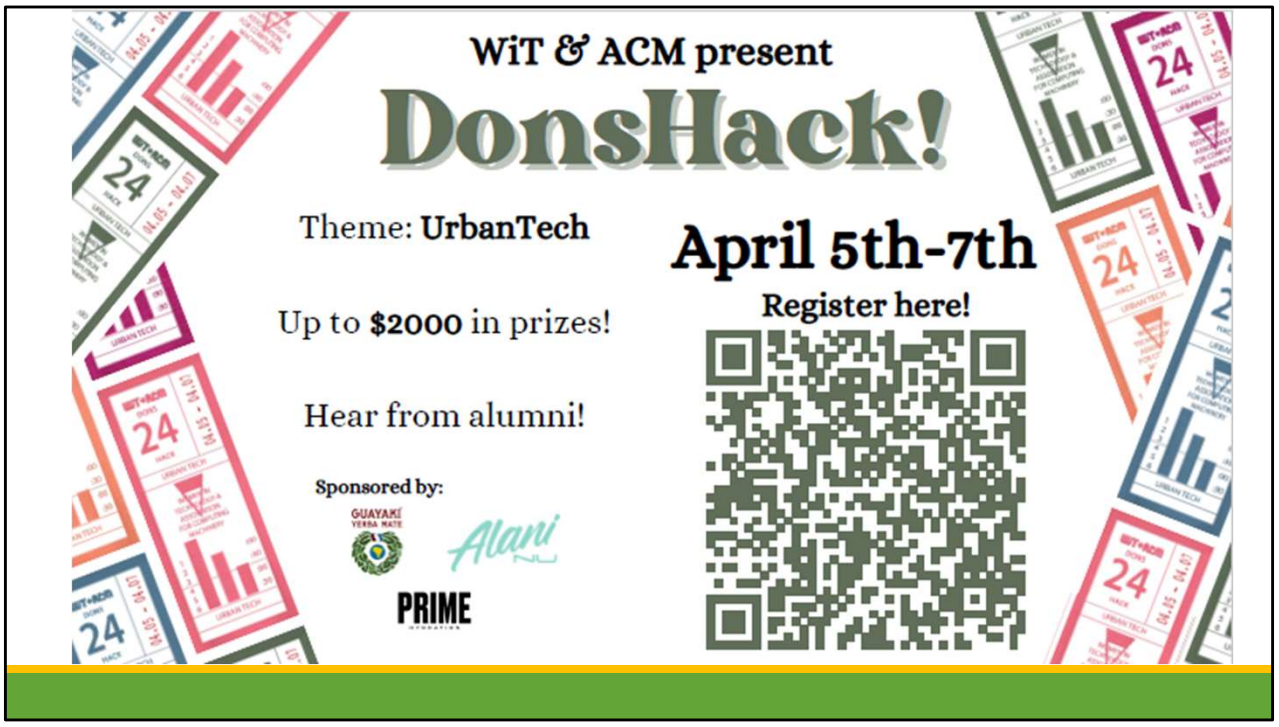
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Notes

Paul office hours this week

- Thursday 3:30-5pm via Zoom

weird.c

Project01

Poker card game

- A great project – your solution can be simple or complicated
- You implement a Poker Player in Java and play against my Dealer program, no humans involved
- Plays in real-time over WiFi
- For top grade, your program must “play Poker well” i.e. smart bets and plays

Poker Project

Two parts

- First part due in one week: preliminary software
- Second part due in 2.5 weeks
  - Final code
  - 10 minute meeting with prof or TA to present your design
  - Bring ½ to 1 page informal written document that describes how you tested

No new homeworks until Project01 is due

Start right away!

Project – Your program

I will give you SW that lets you communicate with the Dealer program

You read commands from the Dealer and send replies. Game has a "protocol" i.e. specification of what the commands will look like and what the replies must look like

Betting card game: you place bets and you play your cards. Dealer tells you if you won or lost

If your program does not follow the protocol or takes too long to reply, you are kicked out of the game

Tournaments

All students play each other to see how their programs do. Small prizes, maybe we do it in the evening and have a little celebration. Optional.

The tournament consists of multiple "hands", multiple hands per second. I will have a GUI that shows how everyone is doing in terms of $$. You can print out info from your **Poker.java** if you want more info about your hands.

If you are shy, GUI will show Avatar name rather than your real name.

Grading

Grades based on:

- Part 1 SW, Part 2 SW
- SW quality: good organization, readable, good comments
- Code quality: well written SW, smart game-playing decisions
- SW performance in fixed tests
- your writeup and the 1-on-1 meeting

Grading not based on performance in the tournament

- Tournament meant just to be fun and interesting

Poker Overview

We are going to play Poker by computer

A few things about Poker

- Multiple players all play against each other
- Rules of Poker are in lab assignment—ask questions!
- I wrote software for the Dealer, you will write software for a Player
- Dealer and Player will communicate over the Internet via WiFi

Usually 2-6 players. We will have up to 30

Poker

The tournament consists of multiple “hands”, hopefully multiple hands per second. I will have a GUI that shows how everyone is doing in terms of $$. You can print out info from your **Poker.java** if you want more info about hands

If you are shy, GUI will show Avatar name rather than your real name.
If the tournament finishes quickly, we can kick off another one

Poker Play

- You can use your `Card` and `CardDeck` classes if you choose to
- We will play a simple poker game called "Three Card Stud"
  - Any three of a kind beats every pair
  - Any pair beats every high card
  - Ace > King > Queen > Jack > 10 > …

Poker Play

Play

- Lots of cards showing
- Each player gets two cards, one "down" (hidden) and the other "up" (visible to everyone)
- Then you bet
- Then each player gets another "up" card and everyone bets again
- Then the winner is announced, and gets all the money in the "pot"

Poker Play

Intelligent Play

- Don't bet if you cannot win
  - Look at what you have, compare to what other players are showing
- Lots of info on the Internet on strategies

Dealer <-> Player communications

Dealer <-> Player communications

Dealer sends commands to each Player, to place bets, make playing decisions, etc

- Player responds

Communication uses `DataInputStream` and `DataOutputStream`

- Not connected to a File but to an Internet Socket

Please don't have anything else running on the network! I don't know how loaded it will be

Internet Sockets

Every network-connected computer has 1+ "Internet Protocol" IP addresses

At start of tournament, I will share IP address of Dealer, and your Player will connect to it

Many services can share the same IP connection

- IP port: many services over same network. Port basically identifies the service (email, HTTP, video streaming, Poker, etc)

IP addrs not permanent. May change every time you connect to network. Also have HW ID that is permanent.
IP addresses are not unique across the world. Only per network.

You will enter Poker Port and Dealer IPaddr as cmd line args to your program.

For your testing, don't worry about testing with IP connection. Just test on your own computer.

Dealer <-> Player communications

The lab assignment gives you a few lines of SW to copy

- Creates IP socket, ties it to `DataInputStream`, `DataOutputStream`

Everyone will need WiFi connectivity

We will have ungraded test session next Weds where you can test connectivity

Please don't have anything else running on the network! I don't know how loaded it will be

Dealer <-> Player communications

The project document describes the commands and responses:

- Your Player should constantly try to read the `DataInputStream`
- When it gets a command, it decides how to respond and writes a response to the `DataOutputStream`
- Then it returns to trying to read the next command

Dealer imposes a hard limit of 1 second response time or you are kicked out of tourney for slow play. Unless the network is a disaster, that shouldn't be hard.

The communication protocol

Commands

- login
- bet1
- bet2
- status
- done

MORE DETAILS IN LAB WRITEUP
MOST COMMANDS NEED A RESPONSE

The communication protocol

Many commands send information along with the command

- Data separated with ':'
- Earlier we wrote a program to parse out words separated by ':' characters

Some of your replies will have data separated by ':' also

MORE DETAILS IN LAB WRITEUP

The communication protocol

Your Player is out of the tournament if

- It breaks the rules (e.g. betting $$ you don't have)
- Sends an illegal reply to a command
- Takes too long to respond
- Runs out of $$

MORE DETAILS IN LAB WRITEUP

Project due in Two Parts

Part 1: due March 27

- Program connects to Dealer over Internet
- Program responds correctly to "login" command
- Program always responds with a $1 bet to the "bet1" command
- Program exits when receives "done" command

Part 2: due April 5

- Program plays intelligently: smart bet values
- Program plays intelligently: smart plays

Testing!

How to test? Read from file, write to file. Don't forget to disable "test mode" for final project!