CS343
Artificial Intelligence

Prof: Peter Stone

Department of Computer Sciences
The University of Texas at Austin

Good Afternoon, Colleagues

Good Afternoon, Colleagues

Are there any questions?

Logistics

- Next three readings are trickier: MDPs and RL

Logistics

- Next three readings are trickier: MDPs and RL
- Multiagent assignment due on Thursday at beginning of class

Logistics

- Next three readings are trickier: MDPs and RL
- Multiagent assignment due on Thursday at beginning of class
- Astro Teller talk on Thursday at 11

Logistics

- Next three readings are trickier: MDPs and RL
- Multiagent assignment due on Thursday at beginning of class
- Astro Teller talk on Thursday at 11
- Holte talk on Friday?

Bid for a Car

- You asked your mechanic to go check it out
- The number on your piece of paper is what he told you it's worth
- Mechanic is unbiased (equal chance of overestimating and underestimating)

Bid for a Car

- You asked your mechanic to go check it out
- The number on your piece of paper is what he told you it's worth
- Mechanic is unbiased (equal chance of overestimating and underestimating)
- Let's run an auction

Bid for a Car

- You asked your mechanic to go check it out
- The number on your piece of paper is what he told you it's worth
- Mechanic is unbiased (equal chance of overestimating and underestimating)
- Let's run an auction
- Bidding starts at $1000
- $10 increments allowed

Bid for a Car

- You asked your mechanic to go check it out
- The number on your piece of paper is what he told you it's worth
- Mechanic is unbiased (equal chance of overestimating and underestimating)
- Let's run an auction
- Bidding starts at $1000
- $10 increments allowed
- If you win the car, your utility is the car's worth minus the amount you bid
- If you don't win the car, your utility is -$10

How did you do?

- Most of you ended with utility of -$10
- How about the winner of the auction?

How did you do?

- Most of you ended with utility of -$10
- How about the winner of the auction?
- The mechanics were unbiased estimators
- For each of you with a value $\$x$ too high, someone else got a value $\$x$ too low

How did you do?

- Most of you ended with utility of -$10
- How about the winner of the auction?
- The mechanics were unbiased estimators
- For each of you with a value $\$x$ too high, someone else got a value $\$x$ too low
- Numbers were $1100, $1125, $1150 . . . $1900
- True value:

How did you do?

- Most of you ended with utility of -$10
- How about the winner of the auction?
- The mechanics were unbiased estimators
- For each of you with a value $\$x$ too high, someone else got a value $\$x$ too low
- Numbers were $1100, $1125, $1150 . . . $1900
- True value: $1500

How did you do?

- Most of you ended with utility of -$10
- How about the winner of the auction?
- The mechanics were unbiased estimators
- For each of you with a value $\$x$ too high, someone else got a value $\$x$ too low
- Numbers were $1100, $1125, $1150 . . . $1900
- True value: $1500
- Utility of the winner?

How did you do?

- Most of you ended with utility of -$10
- How about the winner of the auction?
- The mechanics were unbiased estimators
- For each of you with a value $\$x$ too high, someone else got a value $\$x$ too low
- Numbers were $1100, $1125, $1150 . . . $1900
- True value: $1500
- Utility of the winner?

Winner's curse!

Split the Dollar Game

- Bargaining

Split the Dollar Game

- Bargaining
  - One person makes offer o
  - Other rejects with probaility $p(o)$ — based on offer
  - If rejects, both get nothing

Split the Dollar Game

- Bargaining
  - One person makes offer o
  - Other rejects with probaility $p(o)$ — based on offer
  - If rejects, both get nothing
- Another version
  - One person makes an offer
  - Other accepts, rejects, or counters
  - If counters, $.05 lost
  - Game ends with an accept or reject