Good Morning, Colleagues
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Are there any questions?
Relaxing the Assumptions

- Nondeterministic actions:
Relaxing the Assumptions

- Nondeterministic actions: AND-OR search
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- Partial observations:
Relaxing the Assumptions

- Nondeterministic actions: AND-OR search
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- Unknown environments:
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Relaxing the Assumptions

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- Partial observations: Belief states
- Unknown environments: Online search
- Adversaries:
Relaxing the Assumptions

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- Partial observations: Belief states
- Unknown environments: Online search
- Adversaries: This week!
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)
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- $10 increments allowed
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- 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 true 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?

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- 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
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• 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 $1100, 1125, 1150 \ldots 1900$

• True value:
How did you do?

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- How about the winner of the auction?
- The mechanics were unbiased estimators
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- Numbers were $1100, 1125, 1150 \ldots 1900$
- True value: $1500$
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- Utility of the winner?

![Winner’s curse!](image)