Good Afternoon, Colleagues

Are there any questions?
Logistics

- Last Thursday’s class
Logistics

- Last Thursday’s class
- Next Thursday’s class
Logistics

• Last Thursday’s class
• Next Thursday’s class
• Next readings
Logistics

- Last Thursday’s class
- Next Thursday’s class
- Next readings
Preference Elicitation - Motivation

- TAC travel: Agent has 8 clients with known value functions
Preference Elicitation - Motivation

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  – What’s unrealistic about that?
Preference Elicitation - Motivation

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- Auctions: direct revelation mechanisms are good
  - 2nd price, sealed bid; VCG
Preference Elicitation - Motivation

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- What’s the problem in the combinatorial case?
Problem Definition
Problem Definition

- Finding relevant preference information to make whatever decision you want to
Problem Definition

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- Paper’s case: maximizing social welfare
Terms

- What’s an oracle?
Rank Lattice Based Elicitation

- What’s the nature of a query?
Rank Lattice Based Elicitation

● What’s the nature of a query? (rank)
Rank Lattice Based Elicitation

- What’s the nature of a query? (rank)
- How are upper and lower bounds calculated?
Rank Lattice Based Elicitation

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• How can random queries help?
Rank Lattice Based Elicitation

- What’s the nature of a query? (rank)
- How are upper and lower bounds calculated?
  - Free disposal assumption
- How can random queries help?
- What’s the problem with this method? Why unrealistic?
General Elicitation Framework

• Value queries
General Elicitation Framework

- Value queries
  - Random
  - Allocatable
General Elicitation Framework

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  - Random
  - Allocatable
- Why does it depend on free disposal?
General Elicitation Framework

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- Why does it depend on free disposal?
  - What if no free disposal?
General Elicitation Framework

• Value queries
  – Random
  – Allocatable

• Why does it depend on free disposal?
  – What if no free disposal?

• Allocatable provably better?
Proposition 3

- $v_1(b') = [0, 100], v_2(K - b') = 50$
- $v_1(b'') = [0, 100], v_2(K - b'') = 50$
- $v_1(\emptyset) = 0, v_2(K) = 100$
Proposition 3

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• \( b \) not allocatable, \( b', b'' \) sub-bundles.
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- \( v_1(\emptyset) = 0, \ v_2(K) = 100 \)
- \( b \) not allocatable, \( b', b'' \) sub-bundles.
- What do you learn from finding \( v_1(b) = 40? \)
Order queries

• Why move to order queries?
Order queries

- Why move to order queries?
  - Sufficient on their own?
Order queries

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- Why move to bound approximation queries?
Order queries

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- What’s the cost estimate? Why 10%?
Order queries

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  - Sufficient on their own?
- Why move to bound approximation queries?
- What’s the cost estimate? Why 10%?
- How do you “choose” among query types?
Should the Bidders tell the Truth?

- How do they recover incentive compatibility?
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- What’s the Clarke Tax algorithm?
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**Vickrey-Clarke-Groves**

- Groves: efficient, strategy-proof
- Pivotal: individually-rational

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Class Discussion

- Jaesuk Ahn on effects of market types
Experimental Methodology

• Experimental framework realistic?
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- GenerateBid algorithm: complimentarity and substitutability
Experimental Methodology

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- GenerateBid algorithm: complimentarity and substitutability
  - Any limitations?
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  - What about value correlations?
Experimental Methodology

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- GenerateBid algorithm: complimentarity and substitutability
  - Any limitations?
  - What about value correlations?
- Would this method scale up to FCC?
Other query types?

- Order confidence values?