

Shuffled Cards and Distributed Computing

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Team Sorting - Organize!

4 Groups of

- 1 person (*Andrew*),
- 2 people,
- 4 people, and
- 8 people

Team Sorting - Rules

- Ace High
- ♡, ♠, ♣, ♦
- ie: $\{A♠, 5♦, J♦, 2♡, 3♠\} \rightarrow \{2♡, 3♠, A♠, 5♦, J♦\}$
- One role per person!
Andrew is the exception

Team Sorting - Rules

- Ace High
- ♠, ♣, ♠, ♠
- ie: $\{A♠, 5♦, J♦, 2♥, 3♠\} \rightarrow \{2♥, 3♠, A♠, 5♦, J♦\}$
- One role per person!
Andrew is the exception
- **2 Minutes!**

SORT!

- Ace High

- ♡, ♠, ♣, ♦

Strategies for Team Sorting

What were the strategies used?

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How did these differ depending on the resources available?

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How did these differ depending on the resources available?

Are any of these strategies *intrinsically* better?

Analogies to Distributed Computing

Distributable Problem

Analogies to Distributed Computing

Distributable Problem Computational Complexity

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Distributable Problem Computational Complexity

Algorithmic Complexity

Analogies to Distributed Computing

Distributable Problem	Computational Complexity
Algorithmic Complexity	CPU

Analogies to Distributed Computing

Distributable Problem	Computational Complexity
Algorithmic Complexity	CPU
Network	

Analogies to Distributed Computing

Distributable Problem	Computational Complexity
Algorithmic Complexity	CPU
Network	Network Latency

The Tradeoff

Can Andrew sort faster than the largest group?