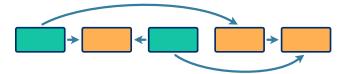


## **Problem** tradeoffs!

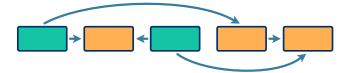
- ➤ flexible mixes
- ➤ strong type guarantees
- ➤ run-time costs



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**Challenge** develop methods to understand the tradeoffs (proofs + performance + people)

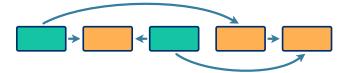


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**Q** . How to assess the pragmatics for working programmers?

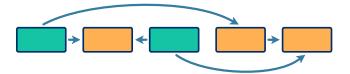


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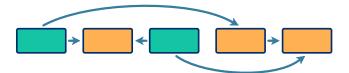
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## Surveys





- + easy to run ...
- for small q's



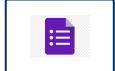
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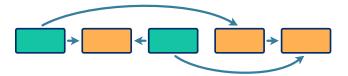


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### **User Logs**



- + realistic data
- hard to generalize



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### Surveys





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### **User Logs**



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## The Rational Programmer



- + direct, scalable
- hard to design