

Introduction

- To recommend, we need to data (what users like, what goes together, etc.)
- Data comes from users, is collected somehow
- This lecture's topic: what data we collect, how, and what it means

2-2: Preferences and Ratings

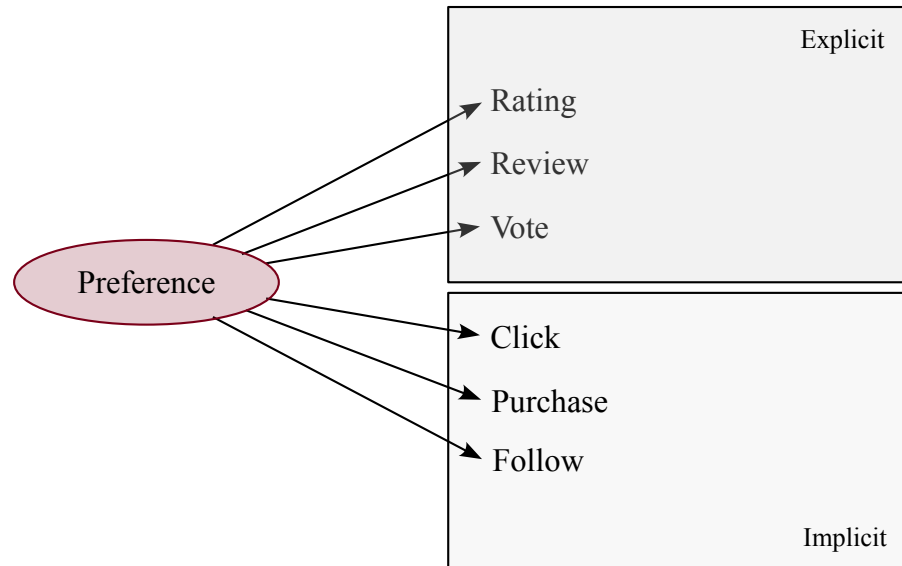
Learning Objectives

- Understand what data recommenders can use to learn what users like
- Identify types of data collected from users
- Understand when different data types are possible and appropriate
- Be able to identify types of preference data likely used in a system

Preference and Ratings

- We want to know: what do users like?
 - Or: what goes together?
- We can observe
 - What users tell us (ratings)
 - What users do (actions)
- These are *noisy measurements* of preference

Preference Model



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Explicit Ratings

Just ask the users what they think!

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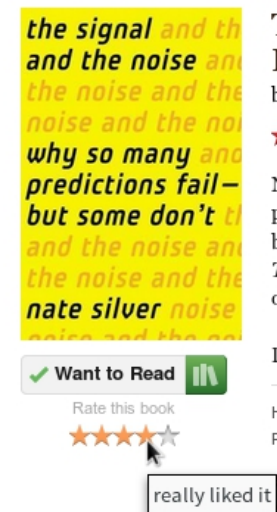
Star Ratings

- Widely-used interface
- Several design decisions
 - 5? 7? 10?
 - Half-stars?
 - Provide meaning/calibration?
 - More not necessarily better
- 5, with or without $\frac{1}{2}$, very common



Netflix

More Star Examples



GoodReads

Start here

1 How do you rate this item? ★★★★★

2 Please enter a title for your review:

Amazon.com

★★★★★ = Must See
★★★★☆ = Will Enjoy
★★★☆☆ = It's OK
★★☆☆☆ = Fairly Bad
★☆☆☆☆ = Awful

MovieLens

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Thumbs and Likes

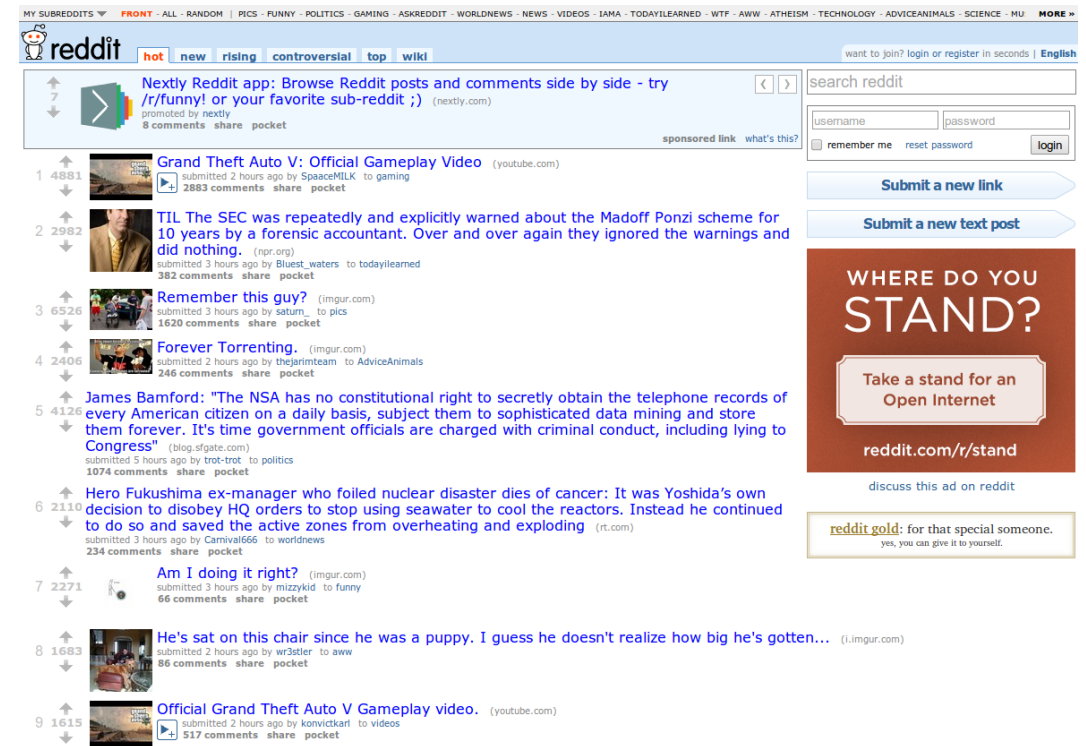
- Vote up/down
- Or just ‘Like’/‘+1’
- Common with ephemeral items
 - News aggregation (Reddit, Digg)
 - Q&A (StackOverflow)
 - YouTube
- Very low cost to rate



Pandora



StackOverflow



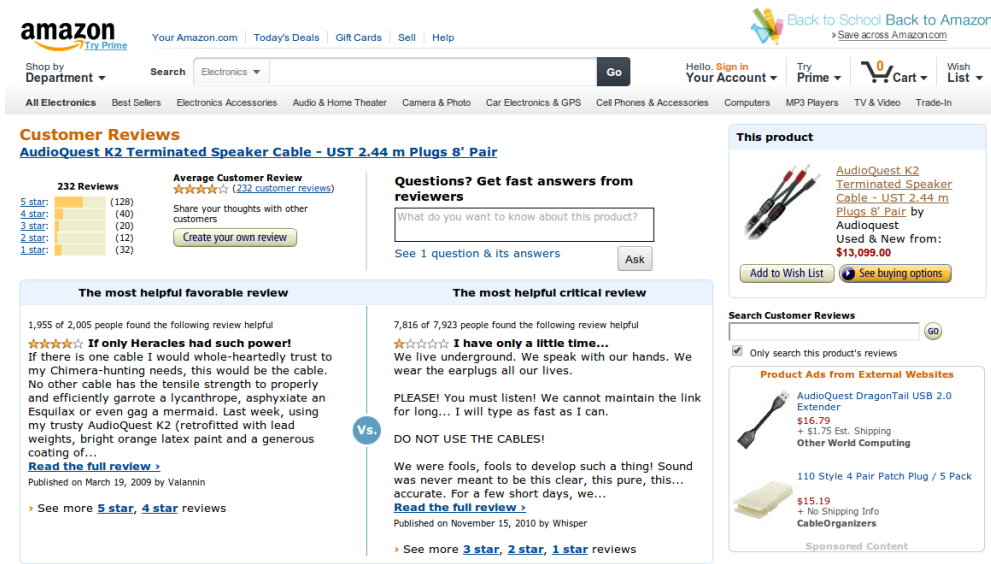
Other Interfaces

- Continuous scales
- Pairwise preference
- Hybrid (e.g. 1-100 + never again)
- Temporary (e.g. Pandora 30-day suspend)

When are ratings provided?

- *Consumption* — during or immediately after experiencing the item
- *Memory* — some time after experience
- *Expectation* — the item has not been experienced

Joke ratings



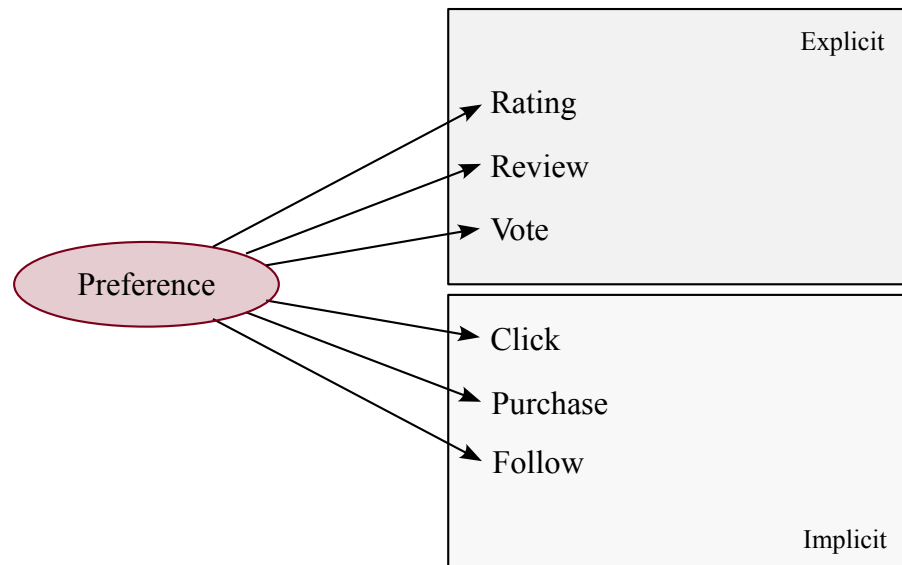
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Difficulties with Ratings

- Are ratings reliable and accurate?
- Do user preferences change?
- What does a rating mean?

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Preference Model



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Implicit Data

- Data collected from user actions
- Key difference: user action is for some other purpose, not expressing preference
- Their actions say a lot!

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Reading Time

- Early implicit data: how long did user read?
- Listening and watching
 - IMMS
 - Video services

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Binary actions

- Click on link (ad, result, cross-reference)
- Don't click on link
- Purchase
- Follow/Friend

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Subtleties and Difficulties

- What does the action mean?
 - Purchase: they might still hate it
 - Don't click: expect bad, or didn't see
- How to scale/represent actions?
- Lots of opportunity to be creepy
 - Education may help
 - So can respecting privacy

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Conclusion

- Recommenders mine what users *say* and what they *do* to learn preferences
- Ratings provide explicit expressions of preference
- Implicit data benefits from greater volume

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