Measuring Mobile Sessions

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Measuring Mobile Sessions

I got asked a question...
Measuring Mobile Sessions

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*How long are mobile readers' sessions?*
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- Interesting. Enables:
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- Interesting. Enables:
- Read time analysis
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• Interesting. Enables:
• Read time analysis
• View clustering
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- Interesting. Enables:
- Read time analysis
- View clustering
- Defining new terms
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How long does a Unique Client spend browsing Wikipedia in a single Session?
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- Identifying “unique clients” (UCs)
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- Identifying “unique clients” (UCs)
- Identifying “sessions”
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• Mobile is a particular challenge
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- *Readers* are a particular challenge
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- Mobile architecture: AOL from the early 2000s
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- Mobile is a particular challenge
- *Readers* are a particular challenge
- Mobile architecture: AOL from the early 2000s
- Reader PII: highly limited
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• Mobile architecture:
• On a wireless network? No problem!
• Using a data plan? Problem.
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- Mobile architecture:
  - On a wireless network? No problem!
  - Using a data plan? Problem.
  - Very few externally facing IP addresses
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- Reader PII:
- (deliberately) limited in our request logs
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- Reader PII:
  - (deliberately) limited in our request logs
  - IP address, User Agent and language variant
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- Reader PII:
- (deliberately) limited in our request logs
- IP address, User Agent and language variant
- No cookies, no links to cookies
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• Algorithm with the most entropy:
• IP + UA + language variant
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- Identifying sessions:
- How do we define a session?
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- How do we define a session?
- Doug Lea: (B M* E)
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- Identifying sessions:
- How do we define a session?
- Doug Lea: (B M* E)
- look at when UCs stop making actions
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- Implementation, the first: Referrer tracking
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- Some UCs don't have referrers
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- Some UCs are mad. Well, all users are mad.
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• Implementation, the first: Referrer tracking
• Some UCs don't have referrers
• Some UCs are mad. Well, all users are mad.
• Compensating for this requires heavy tech input.
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- Implementation, the second: inter-time analysis
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• Implementation, the second: inter-time analysis
• Look at the time between requests, for sampled UCs
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• Implementation, the second: inter-time analysis
• Look at the time between requests, for sampled UCs
• When people stop making actions, that's the end of the session.
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Log10 plot of time elapsed from first mobile web request
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Log10 plot of inter-time periods between mobile web requests
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Time elapsed from first mobile web request
unlimited range

Number of requests

0 20000 40000 60000
0 5 10 15
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Time elapsed from first mobile web request
limited range (0th to 10th percentile)
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Inter-time period between mobile web requests
limited range (0th to 10th percentile)
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Total mobile session times

Density

Seconds
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Total mobile session times (>75th quantile)
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• Still preliminary. But: my gut says that this is accurate. Why?
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![Graph showing inter-edit time distribution](image)

- Frequency on the y-axis
- Inter-edit time (log scaled) on the x-axis
- Categories: minute, 450 sec., hour, day, week, month, year

The graph illustrates the distribution of inter-edit times for mobile sessions, with a peak in the minute and 450 sec. range, decreasing significantly for longer time intervals.
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• Beat on the UC algorithm:
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• Work out entropy added by each layer
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- Compare to mobile edits, where we have UUIDs
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- Beat on the UC algorithm:
- Work out entropy added by each layer
- Compare to mobile edits, where we have UUIDs
- Fix session algorithm:
- Make it identify all sessions associated with a UC
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• Explore alternative models:
• Breadth-first parser?
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- Explore alternative models:
- Breadth-first parser?
- Temporarily include mw.session.id?
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Code and graphics:
github.com/Ironholds/MobileSessions

Questions?