Mental Models of Domain Names and URLs
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Motivation
Many users are unable to identify fraudulent, impersonating domains and URLs:

apple.com.find-device-location.review
www.google-search.com
facebook.com
ebay.com-item-apple-iphone-x-gray-256gb-unlocked.kl7.us
do5de63f3.pw/login.google.com
yahoo.com
facebook.com.token-03144cce5266c0bf3f3.pw

Research Questions
• Why are users tricked by impersonating domains?
• What mental models do users have about how domains/URLs are used?

Methodology
• 1 hour, semi-structured interview
• Diverse Population (Recruit via Craigslist)
• Compensate participants ($30 gift card)
• IRB approved
• Pilot interview script before full-scale study

Research Plan
Pilot Study (N=5) → Full Study (N=Saturation) → Iterative Open Coding → Iterative Axial Coding

Pilot Responses

Only 2 subjects used the URL to verify what website they were on

lock icon means: safety, encryption, website accepts personal information, Google says it is ok, you can buy something there

Interview Protocol

1. Navigation Tasks
   “Please Navigate to youtube.com.”
   “How do you know you are on YouTube?”

2. Security Hygiene
   “What are some things you do to stay safe online?”
   “Where did you learn about these things?”

3. Domain Presentation and Registration
   “How do you think a company gets a URL?”
   “Is there anything not allowed in a URL?”

4. Domain Comprehension
   “What would you expect to see in the blank? What does it represent?”
   “What does it mean if the lock is not there?”

5. Brand Identification
   “What is the name of the fictional company that owns this URL?”
   crumptury.com-login.secure

6. Domain Component Comparison
   “Which parts of these URLs have the same technical purpose?”
   amazon.com/login.login.ebay.com
   google-search.com

7. Free-Form Domain Responses
   “Do you have any thoughts about this domain?”
   “Why might a website pretend to be a different website?”

Subjects use “www.” or “.com” to orient themselves

“I look for the company logo.” –P3

“It’s impossible for a lock to be next to a bad URL.” –P5

Subjects were most wary of typos, but accepted structural impersonation with varying degrees of comfort and confidence

“A hyphen (-) is the same as a slash (/).” –P2

Subjects use “www.” or “.com” to orient themselves