CSE 347/547 DES 306/525: Usable Security and Privacy

Quiz III (TOTAL - 20 POINTS), September 18, 1025

RUBRIC

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1. Why do we need Prototypes? [4 Points]

Prototypes let us **test ideas** early, identify usability & security issues, and refine designs before full development. They also save time, reduce cost, and improve user-centered design.

4 Marks if testing/refinement before full system is mentioned.

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2. Why are probabilistic models more effective in capturing user behaviors? [4 Points]

Probabilistic models account for **uncertainty** and **variation** in human behavior, making them better at modeling realistic, non-deterministic user actions.

4 Marks if uncertainty / variation in behavior is noted.

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3. How do generative models differ from discriminative models in modeling behaviors? [4 Points]

Generative models learn the joint distribution (how data is generated), while discriminative models focus only on the boundary between classes (predicting labels).

2 Marks for joint distribution vs classes, 2 Marks for explaining behavior modeling difference.

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4. How do different fidelity prototypes differ from each other? [4 Points]

Low-fidelity prototypes (e.g., sketches, paper) are quick, cheap, and focus on ideas , on the other hand high-fidelity prototypes are interactive, closer to the final product, and focus on detailed testing.

2 Marks for low-fidelity, 2 Marks for high-fidelity difference.

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5. What is paper prototyping and why are they effective? [4 Points]

Paper prototyping uses hand-drawn sketches to simulate interfaces. They are effective because they are cheap, fast, encourage feedback, and help detect usability/security flaws early.

2 Marks for definition, 2 Marks for effectiveness.