

Final Exam

25 questions

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1.

Company ABC's password policy has always been that the system generates passwords for its users instead of letting them pick their own. The passwords are random 8-character strings with upper and lower case letters, numbers, and symbols for users (e.g. "^8j4Z.mp"). Every six months, the password is changed to something new. Because password resets are a security danger, users are not allowed to reset their passwords if they forget them. Instead, they need to go to the company's IT office which looks up their existing password and gives them a printout with the password on it.

(note: this is a true example – I worked at an organization that had exactly this policy)

Answer the questions 1-13 about Company ABC's policy.

True or false: the passwords that the system generate are very hard to crack?

☒ True

☐ False

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2.

Which method would work best if trying to crack one of Company ABC's passwords

☐ Dictionary

☒

Brute force

☐ Common Word

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3.

What is the biggest usability problem with Company ABC's passwords?

- ☐ They take a long time to type in (speed)
 - ☒ Employees don't like them (user preference)
 - ☐ It is too easy to make a typo while entering the password (efficiency)
 - ☐ They are hard to remember (memorability)
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4.

Which of the following is the most likely response to Company ABC's password reset policy ?

- ☐ People will lose work time trying to memorize their new passwords every six months
 - ☒ Users will write down their passwords
 - ☐ Users will become friends with people in the IT office because they visit to often to get password reminders
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5.

True or false: a policy that allows users reset their passwords automatically (e.g. if a user forgets their password they can enter their user ID and have a new password emailed to the address that the IT office has on file) may lead users choosing more complex passwords.

☒ True

☐ False

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6.

True or false: a policy that users reset their passwords automatically would be more usable

☒ True

☐ False

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7.

True or false: a user-chosen 8-character password would be more difficult to break than the existing system-generated passwords.

☐ True

☒ False

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8.

True or false: a user-chosen 8-character password would be more usable

☒ True

☐ False

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9.

True or false: a user chosen 8-character password could be more secure

☐ True

☒ False

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10.

True or false: an automatically generated password that combined 4 unrelated common words would be harder to break

- ☒ True
- ☐ False
-

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11.

True or false: an automatically generated password that combined 4 unrelated common words would be more usable

- ☒ True
- ☐ False
-

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12.

True or false: Increasing the usability of Company ABC's password policy would lead to greater security

- ☒ True
- ☐ False
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13.

True or false: There is a conflict between creating a usable password system and the most secure password system

- ☐ True

☒ False

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14.

Company XYZ is a defense contractor. They need to make sure that only authorized people enter their facilities. They have decided to install a new biometric authentication station outside the gate that protects the parking lot. Employees will need to authenticate in order to be let in. Answer questions 14-20 about Company XYZ.

How should the security system be designed?

- ☒ The designer should rely on her own experience entering the gate to decide which authentication scheme will work best.
 - ☐ The designer should choose the biometric authentication mechanism that has the most support in her preferred programming language
 - ☐ The designer should sit at the gate during the busiest time of morning and evening and watch people come in and out
 - ☐ The designer should look for which biometric authentication systems are easiest to implement
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15.

If someone tries to authenticate and they are not recognized, the system designer is considering adding a delay before they can try to authenticate again. Which is the best delay?

- ☒ 10 seconds
 - ☐ 10 minutes
 - ☐ 2 hours
 - ☐ No Delay
-

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16.

A survey shows that a surprisingly large percentage (25%) of employees ride motorcycles to work, the standard protective gear of helmets, leather jackets, and gloves. Which of the following would be a poor biometric tool based on this fact?

- ☒ Face recognition
 - ☐ Free gestures
 - ☐ Voice recognition
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17.

The designer has decided to use a free gesture system to authenticate people, but the hardware for a gesture-detection system that is weatherproof is very expensive. As she is eating lunch in her office, she is contemplating the next step. What should she do?

- ☐ She should buy the hardware and implement the system, followed up by training for employees who have trouble. Since she is a designer and security expert, she knows that this system is the best way to go.
 - ☐ She should make the system work on her computer with hardware she has and test it in her lab. If it works there, she should buy the expensive system and implement it at the gate.
 - ☒ Her lunch's pizza box is about the size of the gesture reading hardware. She should paint the box and position it at the gate where the real tool would go, and then ask people to pretend to authenticate as they come in so she can get information about the process. If people don't like it, she can revise the design
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18.

The free gesture system is implemented, and all employees have stopped

by the IT office to teach the system what their authenticating gesture is by entering it on a touch screen in the office. A couple weeks later, people who drive SUVs start complaining that they sometimes need to enter their gesture 4 or 5 times because it is not recognized (probably because they are making it from an odd angle – their cars are high up above the device where they enter their gesture). What type of usability problem is this?

- ☐ User Preference
 - ☐ Memorability
 - ☒ Efficiency
 - ☐ Learnability
 - ☐ Speed
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19.

What is a good solution for the SUV drivers?

- ☐ Nothing – the SUV drivers need to learn to work with the system
 - ☒ When they teach the system what their authenticating gesture is, they should do it from their car rather than in the IT office so there is a better match between their "true" gesture and what they enter when they drive in
 - ☐ SUV drivers should be given additional training on how to properly enter a gesture
 - ☐ SUV drivers should, instead, be required to type in a password on a touch screen at the gate (similar to an ATM touchscreen)
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20.

After a while, the IT office complains to the designer that people keep

coming in having forgotten their gestures. This is a problem because traffic backs up when a person can't remember the gesture, it takes a lot of time to reset the gesture, and people are trying to get around the system by closely following the person in front of them through the open gate. The designer decides that from now on, when people create new gestures, it should be the person's normal signature. Which usability aspect does this improve?

- ☐ Efficiency
 - ☒ Memorability
 - ☐ Speed
 - ☐ User Preference
 - ☐ Learnability
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21.

Answer questions 21-24 about Company 123.

Company 123 is creating a social network designed to compete with Facebook. They begin by copying Facebook's interface exactly, except they change the name and make it green instead of blue. How does this help usability?

- ☒ It lets users rely on existing mental models
 - ☐ It doesn't
 - ☐ It is faster
 - ☐ It is less taxing on memory
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22.

Company 123 writes a privacy policy that is written in easy-to-read language at an 6th grade reading level and is exactly 1 page long when

language at an 8th grade reading level and is exactly 1 page long when printed and that covers all the major points of their privacy – mainly, that no data is ever shared except with people the user lists in their own privacy settings. Which of these five pitfalls does their policy avoid:

- ☒ Lacking coarse-grained control.
 - ☒ Inhibiting established practice.
 - ☐ Obscuring potential information flow.
 - ☒ Emphasizing configuration over action
 - ☐ Obscuring actual information flow.
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23.

Is a 12-year old in 7th grade able to give informed consent to this policy?

- ☐ Yes
 - ☒ No
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24.

A designer at Company 123 is considering changing their login interface so the password box shows the last character typed for 1 second before changing it to the standard star or dot that prevents over the shoulder attacks. They hope this will help people spot when they have made a typo as they enter their password. How should she determine if this is a good change to make?

- ☐ Run an A/B test and see which version has fewer failed logins
 - ☐ Run a full usability study on the site with new and old version of the login system,
 - ☒ Show users both versions and ask them to vote
 - ☐ Show both versions to all the designers at Company 123 and have them choose which is the best
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25.

True or false: error messages should limit technical detail in favor of plain language.

☒ True

☐ False

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