

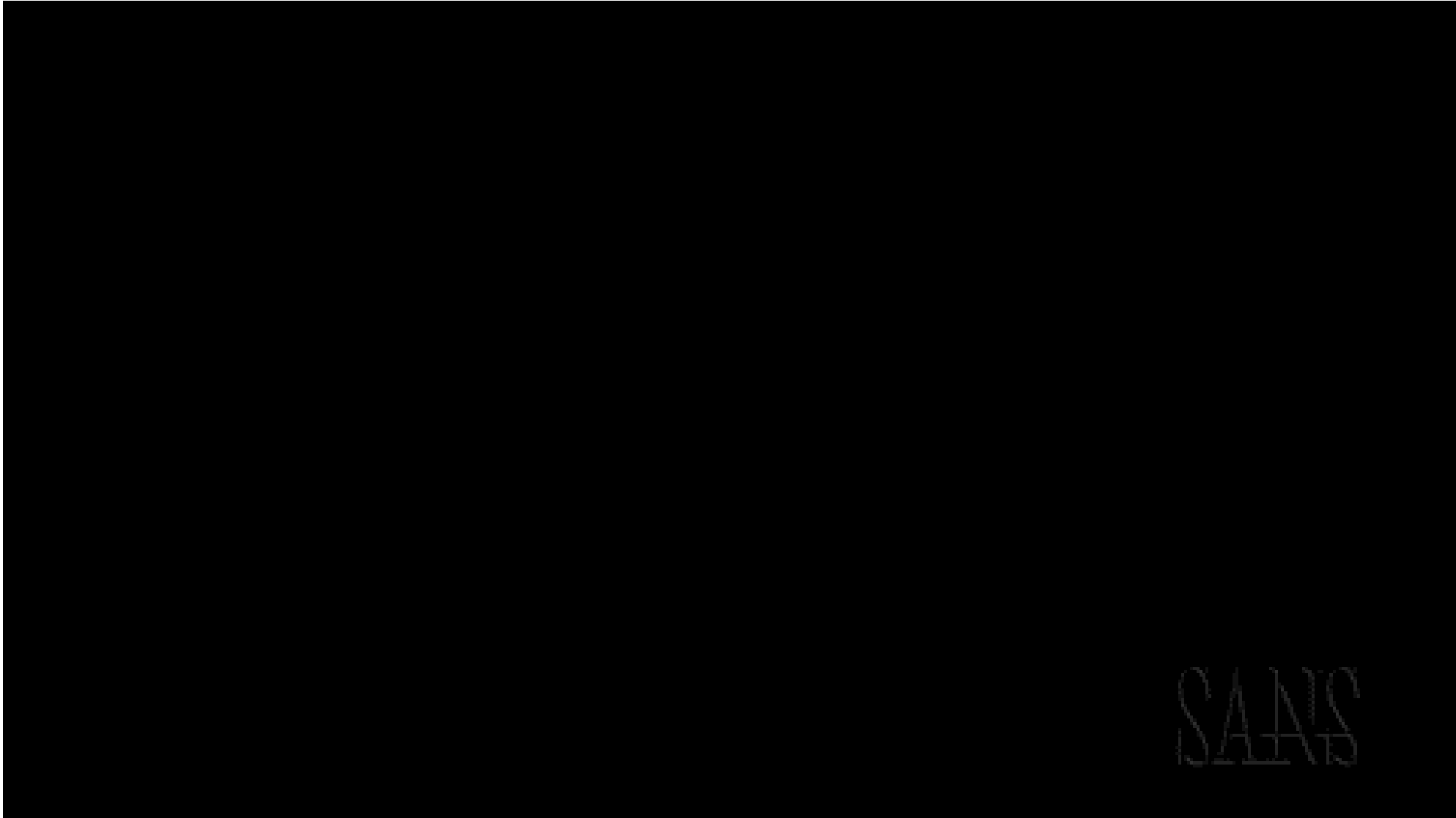
# PASSWORDS

# DOES IT MATTER?

- Is your email password the same as your Facebook password?
- Is that Good? Bad? Why?



# PROTECT YOUR PASSWORD



SANS

# WHAT SHOULD YOU DO?

- Same password everywhere?
  - PLEASE, NO!!!
  - If one is compromised, all are compromised
  - Different systems have different pw rules
  - Violates K-State policy about eID passwords
- Rely on your memory?
  - Value is inversely proportional to your age!
  - You'll often click on "Forgot Your Password?" links!
- Write 'em down?
  - Risky, but not out of the question if you keep the note in a safe place (NOT your desk pencil drawer)
  - Bigger issue is quantity of passwords you have to remember
  - Generally considered a bad idea



# LET YOUR BROWSER STORE THEM ALL?

- OK for some passwords, but not others
- Too risky for accounts with access to sensitive information
- Easy for someone to view the stored passwords, unless you...
- Use Firefox and password-protect viewing stored passwords... and don't forget THAT password!
- DON'T do it with your eID password, financial accounts, anything with access to personal identity info (like SSN)
- Never do this on a shared, lab, or public computer
- IE stores browser ("AutoComplete") passwords in Registry
  - Free tools readily available to recover them.
  - Delete in IE8 with Tools->Internet Options->General->Browsing history->Delete, check the "Passwords" box
- Firefox had built-in tool to view them and delete them (Tools->Options->Security->Saved Passwords); be sure to use a "Master Password" to protect the stored passwords



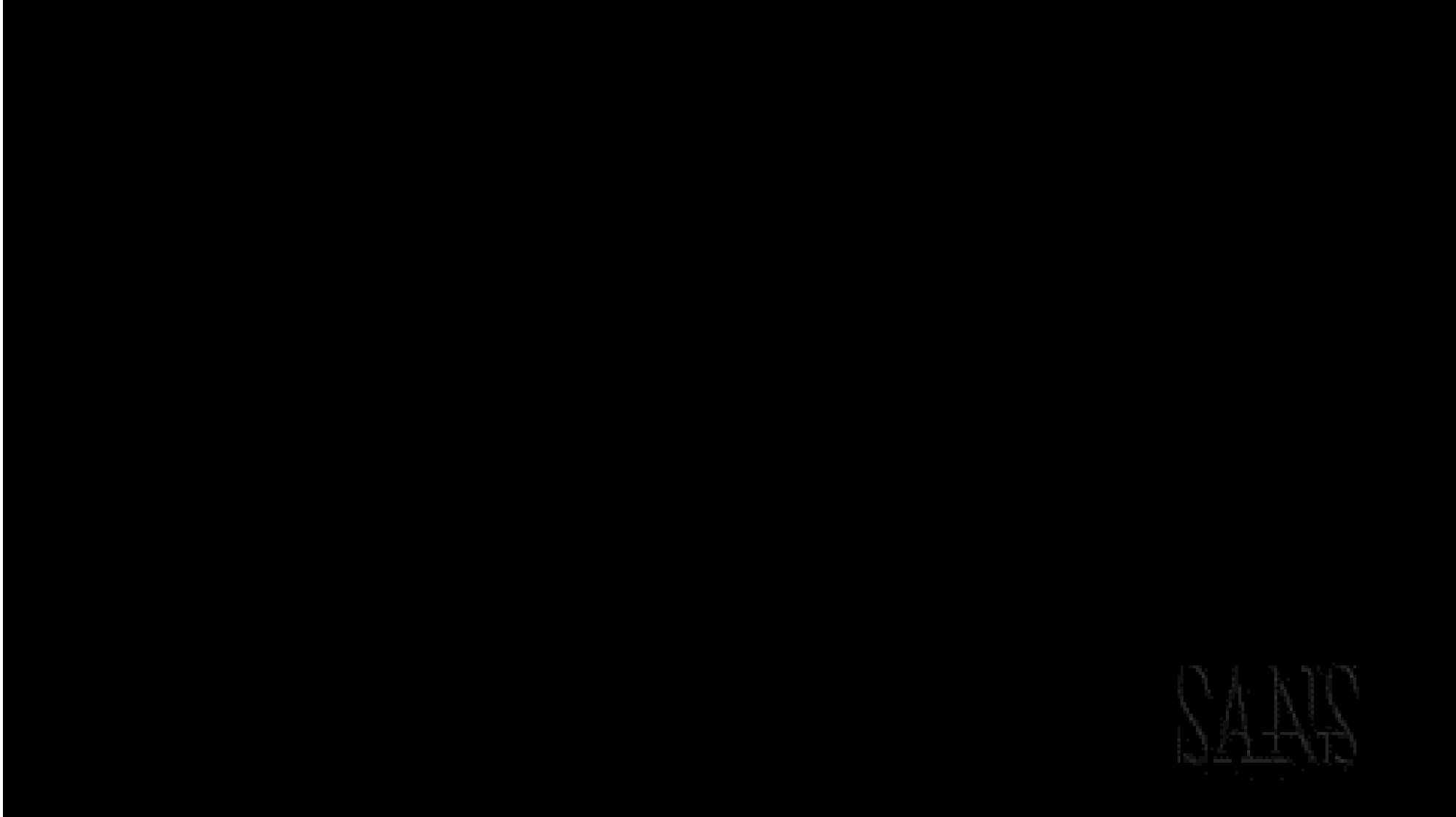
# WHY PASSWORDS ARE IMPORTANT?

- They are the entry point to your
  - Email, Twitter, Facebook, Myspace ← Ha Ha Myspace...
  - Online Banking
  - Amazon, eBay, and other sites where you spend \$\$\$\$
- IT and other enterprise resources.
- They provide access to the VPN, e-mail servers, and the network.
- Misused or stolen passwords can give intruders access to your personal info.

# INTERNAL PASSWORD THEFT IS EASY

- “Social engineering” is one of the easiest ways for intruders to compromise networks and other organizational systems.
- Others can hear you give a password to someone you trust.
- Someone looking over your shoulder can discover a password.
- Don’t keep a copy of your password in a desk drawer, on a monitor, or under a keyboard.

# SOCIAL ENGINEERING





# PROTECT YOUR PASSWORD

- Your password is yours alone.
- Don't share it with anyone, including supervisors, personal assistants, or IT personnel.
- Never write down your password.
  - You wouldn't write your PIN number for your ATM card, would you?
- Do NOT:
  - Say your password aloud.
  - E-mail your password to a co-worker.
  - Offer anyone hints about what your password might be.

# EXAMPLES OF BAD PASSWORDS

- Sports teams or terms: LouvilleSlgr
- Number sequence: \*12345\*
- Letter string: AAAAAA
- Mixed-case sequence: ABcdEFgh
- Company name: AcmeIT
- Keyboard sequence: QwERty or ASdFgh

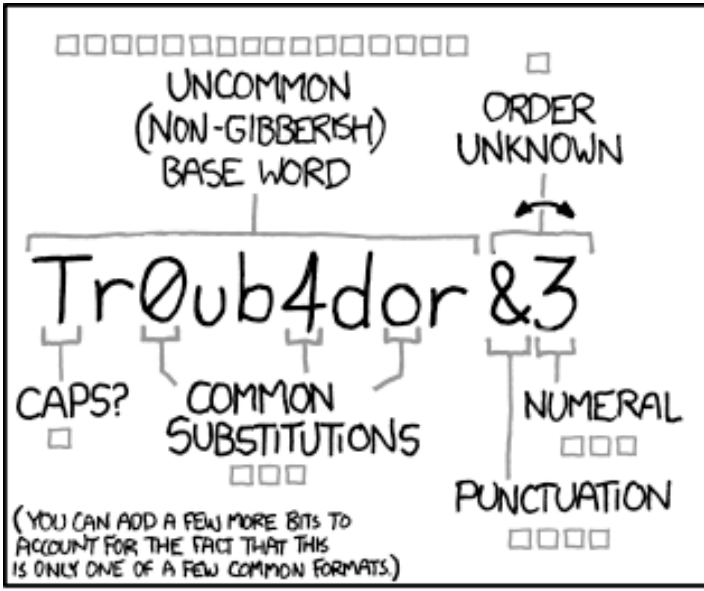
**LETS LOOK AT SOME**  
**BAD PASSWORDS**

# CREATE A STRONG PASSWORD

- Are eight characters or longer
- Can't contain any part of a user's full name or username
- Don't use any term that could easily be guessed by someone who is familiar with you
- Should not include any personal information, e.g., the name of a spouse or a street address
- Should not contain personal identification numbers, including those on a license plate, your telephone number, birth date, or any part of your Social Security number.
- Contain characters from three of the four classes of characters

# THE FOUR CHARACTER CLASSES ARE:

- English uppercase letters (A, B, C).
- English lowercase letters (a, b, c).
- Arabic numerals (1, 2, 3).
- Special characters ( !, \*, \$, or other punctuation symbols).



~28 BITS OF ENTROPY

$2^{28} = 3 \text{ DAYS AT } 1000 \text{ GUESSES/SEC}$

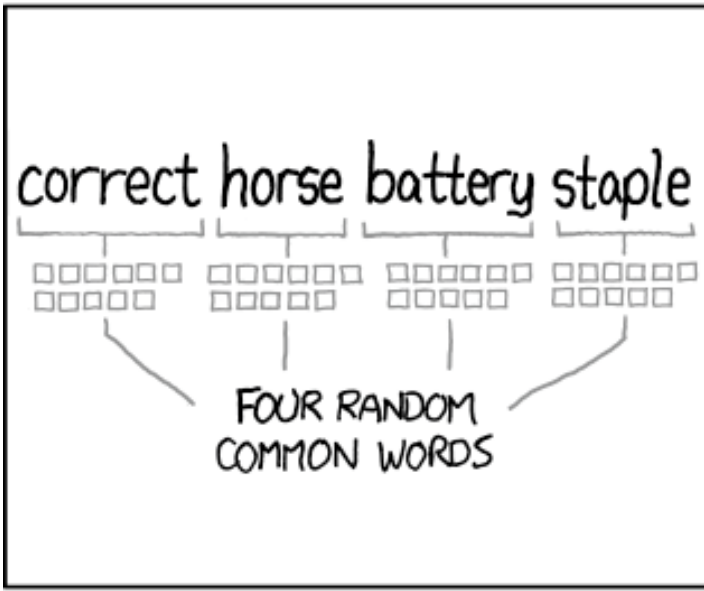
(PLAUSIBLE ATTACK ON A WEAK REMOTE WEB SERVICE. YES, CRACKING A STOLEN HASH IS FASTER, BUT IT'S NOT WHAT THE AVERAGE USER SHOULD WORRY ABOUT.)

DIFFICULTY TO GUESS: **EASY**

WAS IT TROMBONE? NO, TROUBADOR. AND ONE OF THE 0s WAS A ZERO?

AND THERE WAS SOME SYMBOL...

DIFFICULTY TO REMEMBER: **HARD**



~44 BITS OF ENTROPY

$2^{44} = 550 \text{ YEARS AT } 1000 \text{ GUESSES/SEC}$

DIFFICULTY TO GUESS: **HARD**

THAT'S A BATTERY STAPLE.

CORRECT!

DIFFICULTY TO REMEMBER: **YOU'VE ALREADY MEMORIZED IT**

THROUGH 20 YEARS OF EFFORT, WE'VE SUCCESSFULLY TRAINED EVERYONE TO USE PASSWORDS THAT ARE HARD FOR HUMANS TO REMEMBER, BUT EASY FOR COMPUTERS TO GUESS.

[xkcd.com](http://xkcd.com)

[xkcd 936 explained](#)

# SAME PASSWORD FOR SIMILAR CATEGORIES OF ACCOUNTS?

- Have at least four categories:
  - Financial
  - eID and other important K-State accts
  - Shopping accts that store your credit card info
  - Innocuous accts w/ no sensitive information
- #1 and #2 should be long, complex, and changed regularly
- #3 not as long, less complex, changed less often
- #4 can be short, simple, never changed
- Differing password rules may pose a challenge



# HERE IS WHAT I DO

- Use A Strong Password
  - Longer than 8 Characters
  - Mix CAPITAL, lower, number & characters
- Use Different Types Of Passwords For Deferent Situations
  - My Email ← Strongest
  - Banks / Credit Cards
  - School
  - Any Account that has a Credit card
  - Any Account that has my PayPal
  - Account I care about, but don't have \$\$ attached (facebook, Instagram, etc)
  - Account that are just because I had to sign up...

# HERE IS WHAT I DO

Phrase with a few words 1234\$%#@+3 letters of CONText

Correct battery horse staple + Numbers + Characters + "+" ABCD



# LAST WORDS

- A password is the key to your Online presence & resources.
- A strong password can protect your personal account.
- Take strides to make strong passwords that are not obvious to someone familiar with you.
- Remember to change your password on a regular basis.
- [Ellen's Password minder protector minder...](#)

Season 10

ellen