Student Password Habits

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How do we work on passwords now?

- Password Security is a race
  - We make stronger defenses
  - They make faster attacks and stronger decryption
  - Both get faster hardware
- We are winning the race for now, but just barely.

What do we know about people?

- They are bad at making random passwords
  - This is why dictionaries work
  - Hackers are using targeted dictionaries
- Different people think differently
  - Stereotypes include Germans are organized and Latinos are friendly

Does this translate to passwords?

What did We do about this?

- We also asked them to tell us a little bit about themselves.
  - Gender
  - Age
  - Primary Language
  - Do you work in/Study technology?

- We asked students to make up passwords for us.
  - “You are made aware that your email account has been compromised and are required to change the password for your personal email that is linked to your bank account log-in and social media accounts. You are told that you cannot reuse the same passwords but are given no other criteria. Please provide a newly generated password.

    Note: You should not use any of your real passwords.”

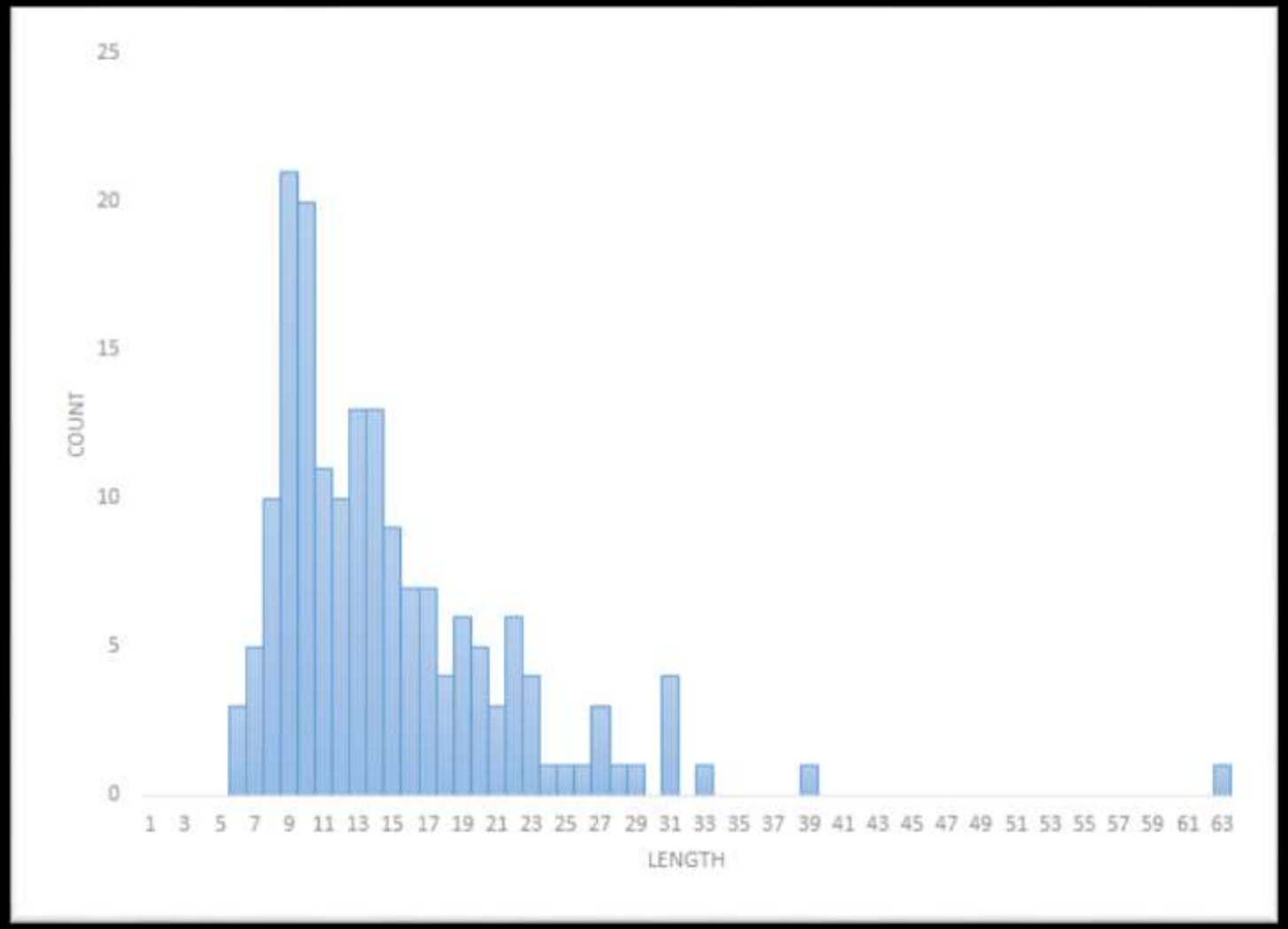
What did we check for?

- Length of passwords
  - Average length
  - Minimum of 8 characters
- Mixed capitalization
  - Existence of characters
  - Placement of these characters
- Presence of non-alphabetical characters
  - Existence of characters
  - Placement of these characters

Findings!

- As expected:
  - Some groups are better at certain aspects of complexity
    - Not always by a significant margin
- Some are very similar
  - Presence of Numbers and special characters

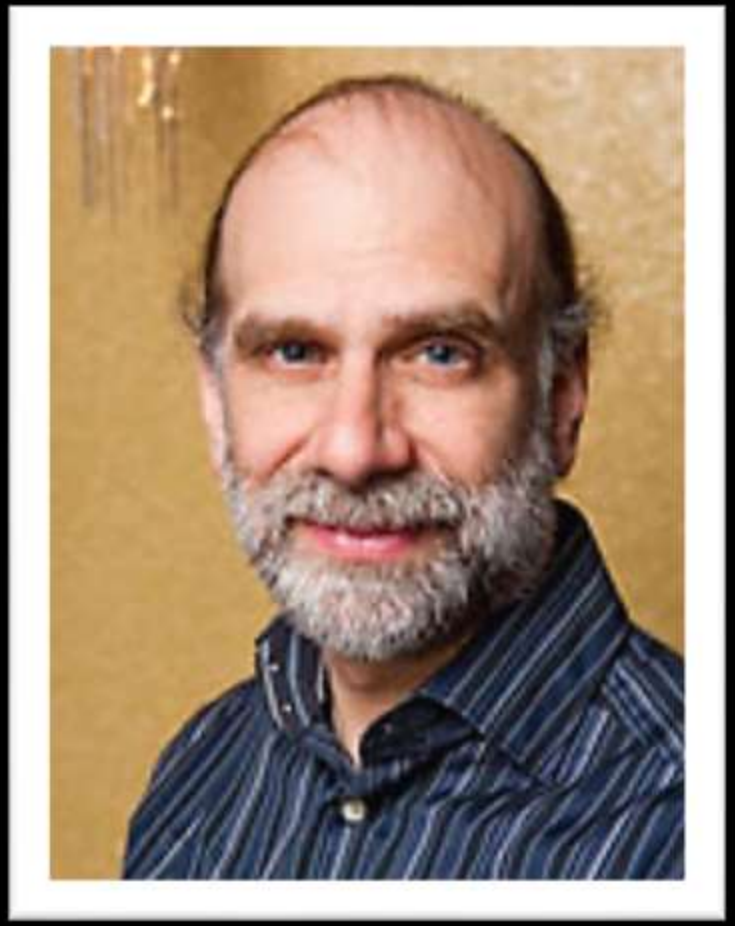
Password Length Distribution



Why check for placement?

- We used to quip that "password" is the most common password. Now it's "password1." Who said users haven't learned anything about security?

  -Bruce Shneier (Schneier on Security)



Are students better at passwords?

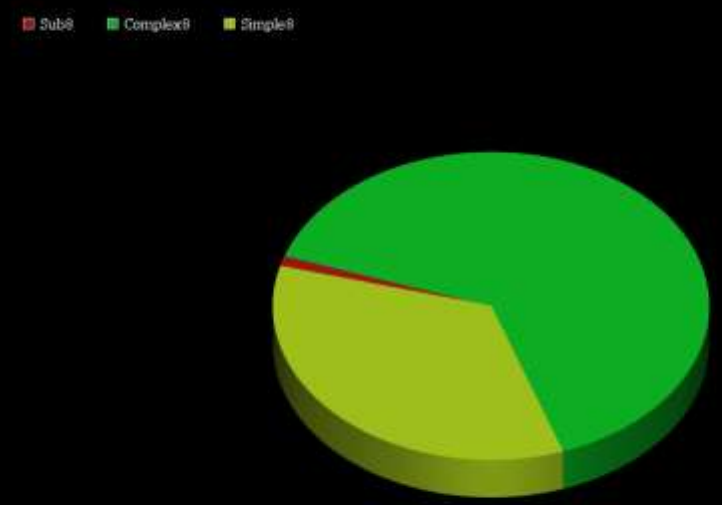
- Just over 7% of Complex8 passwords break our topology predictions
  - 39% are a dictionary word followed by digits or special characters
    - 64% of those start with a capital letter (24% of total)
- Just over just over 9% have no numbers or special characters

Findings!

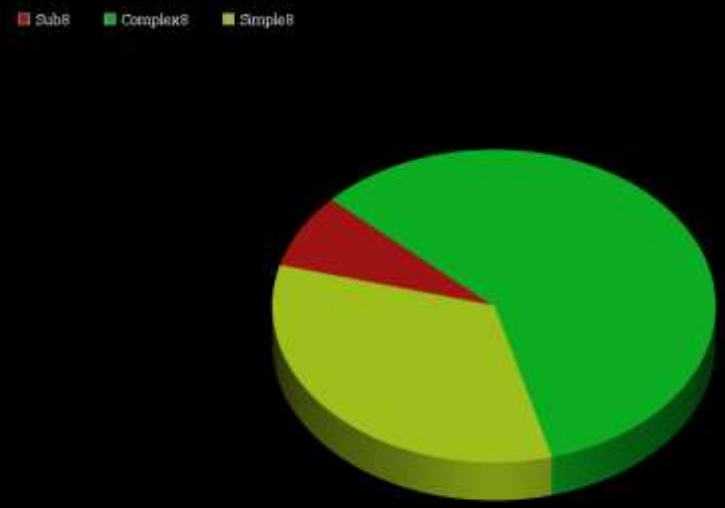
- Checking by genders:
  - When comparing them the average password length differed by over 2.7 characters.
  - Presence of special characters was very similar
- Checking by age:
  - Length varied by 2.4 characters
    - 18-21 : Average of 16.4 characters
    - Over 21: Average of 14 characters

Findings!

In Tech:



Not in Tech



Average lengths:

15.7 characters

13.6 Characters

Conclusions

- Youth has learned to follow the standards.
  - Maybe too well…
- There is diversity in tendencies when making passwords
  - Diversity is a good place to start working on.
- Even the people studying/working with computers are at fault for weak passwords

Questions