User Authentication

How do we know that someone is who they say they are?

- How do we tell in real life?

- How do we tell on the phone?

- How do we tell on the internet?

Authenticating in Real Life

- What kind of situations do we need to provide authentication in?

Authenticating Online

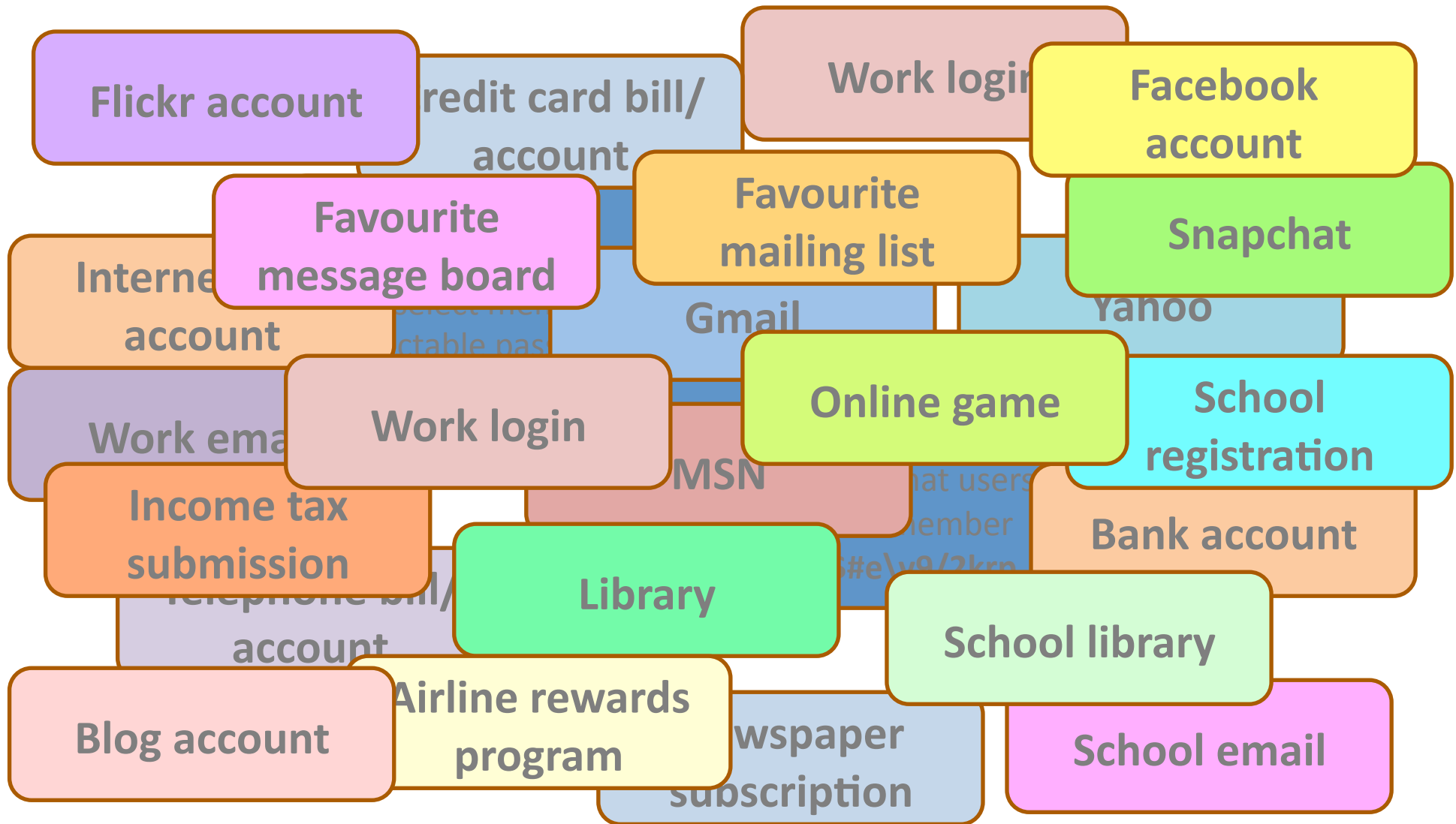- Where do we have to prove our identity on the internet?

A Shared Secret

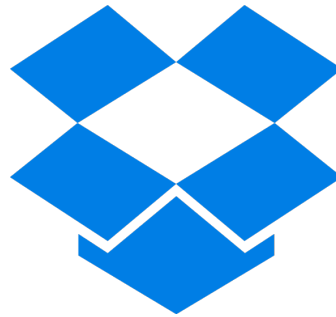name = username

secret = password

3 Different Ways to Authenticate

- Something you *know*
- Something you *have*
- Something you *are*

The Password Problem

Password Attacks

Ethics

- Learning about how to be secure often means learning how to exploit insecurities

- We will discuss techniques for "hacking" or bypassing security mechanisms

- Using these skills on other people's phones and accounts is *illegal* and *immoral*

Instructions

- Divide into groups of 4 people
  (one group of 5)
  - Most activities will be done in pairs
- Groups rotate through 6 activities
  - Each group will get a card showing their activity ordering
- Wrap-up and discussion at end

Discussion

Creating Good Passwords

- What were the strongest passwords you were able to create?

  – Could you remember these passwords?

- What strategies would you recommend for creating strong passwords?

Password Cracking

- How many passwords could you guess?

- What are the differences between brute force and dictionary attacks?

- How many 4-digit PINs are there?

- Why doesn't this guessing strategy work on websites?

Personal Knowledge Questions

- How many of these questions were you able to answer?

- Which of these questions is most secure? Least secure?

- Why shouldn't we use personal information in authentication? Does this apply to passwords too?

Graphical Passwords

- Graphical passwords vs. text passwords
  - Which do you like better?
  - Which do you think is more secure?

- PassTiles
  - How many possible passwords are there?
  - What differences did you notice between the three variations?
  - Possible attacks?

Biometrics

- What are the advantages of biometrics?

- Are there any privacy problems when using fingerprints for authentication?

- Is it possible to change your "password" when using fingerprints for authentication?
  - How many times can you change your password?