

# Authentication Flaws

# ✗ Typical Flaws in Authentication


- Permits brute force or other automated attacks
- Permits default, weak, or well-known passwords
- Uses weak or ineffective credential recovery and forgot-password processes (e.g. "knowledge-based answers")
- Uses plain text, encrypted, or weakly hashed passwords
- Has missing or ineffective multi-factor authentication
- Exposes Session IDs in the URL
- Does not rotate Session IDs after successful login
- Does not properly invalidate Session IDs

# Risk Rating

## Broken Authentication

Exploitability	Prevalence	Detecability	Impact	Risk
● Easy	◆ Common	◆ Average	● Severe	A2
( 3	+ 2	+ 2 ) / 3	* 3	= 7.0

# Exercise

1. Watch [How To Keep Your Passwords Safe](#) 
2. Log in with MC SafeSearch's user account (⭐⭐)

## Password Strength Controls

- Enforce minimum password length of at least 10 characters
- Maximum length should allow 64 characters or more
- No periodic password resets as users rely on predictable patterns
- Avoid password complexity rules as *all of them* are predictable
- Ban bad passwords or ones which have appeared in data breaches
  - e.g. [Troy Hunt's 10GB+ list](#) or [Daniel Miesler's various lists](#)
- Allow convenience features on password fields
  - Offer *Show Password while typing* option
  - Allow pasting from clipboard into password fields

## Other Authentication Controls

- **Transmit passwords only over TLS**
  - The "login landing page" must be served over TLS as well
- **Prevent Brute-Force Attacks** (e.g. throttling or periodic lockout)
- Require re-authentication for sensitive features
- **Offer optional 2FA / MFA**
  - Consider strong transaction authentication

## Enterprise Controls

- Use centralized corporate authentication system (if in place)

# Exercise

1. Log in as admin exploiting its insufficient *Password Strength* (★ ★)
2. *Reset Jim's Password* by answering his secret question (★ ★ ★)
3. *Login Bjoern* using his Gmail account (★ ★ ★ ★)