# Calculating Password Strength





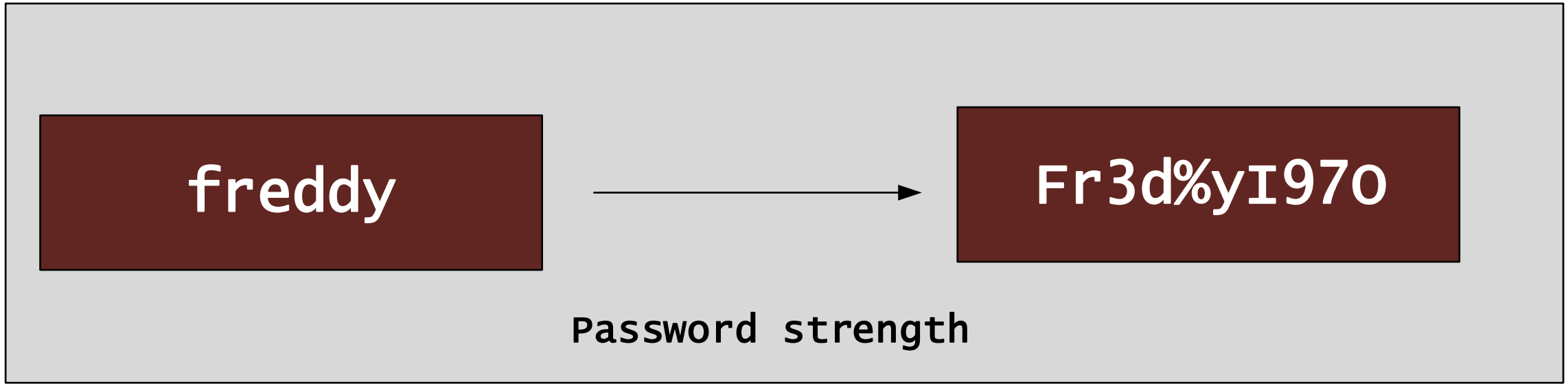
## No. of passwords

**http://asecuritysite.com**

**Author:** Prof Bill Buchanan

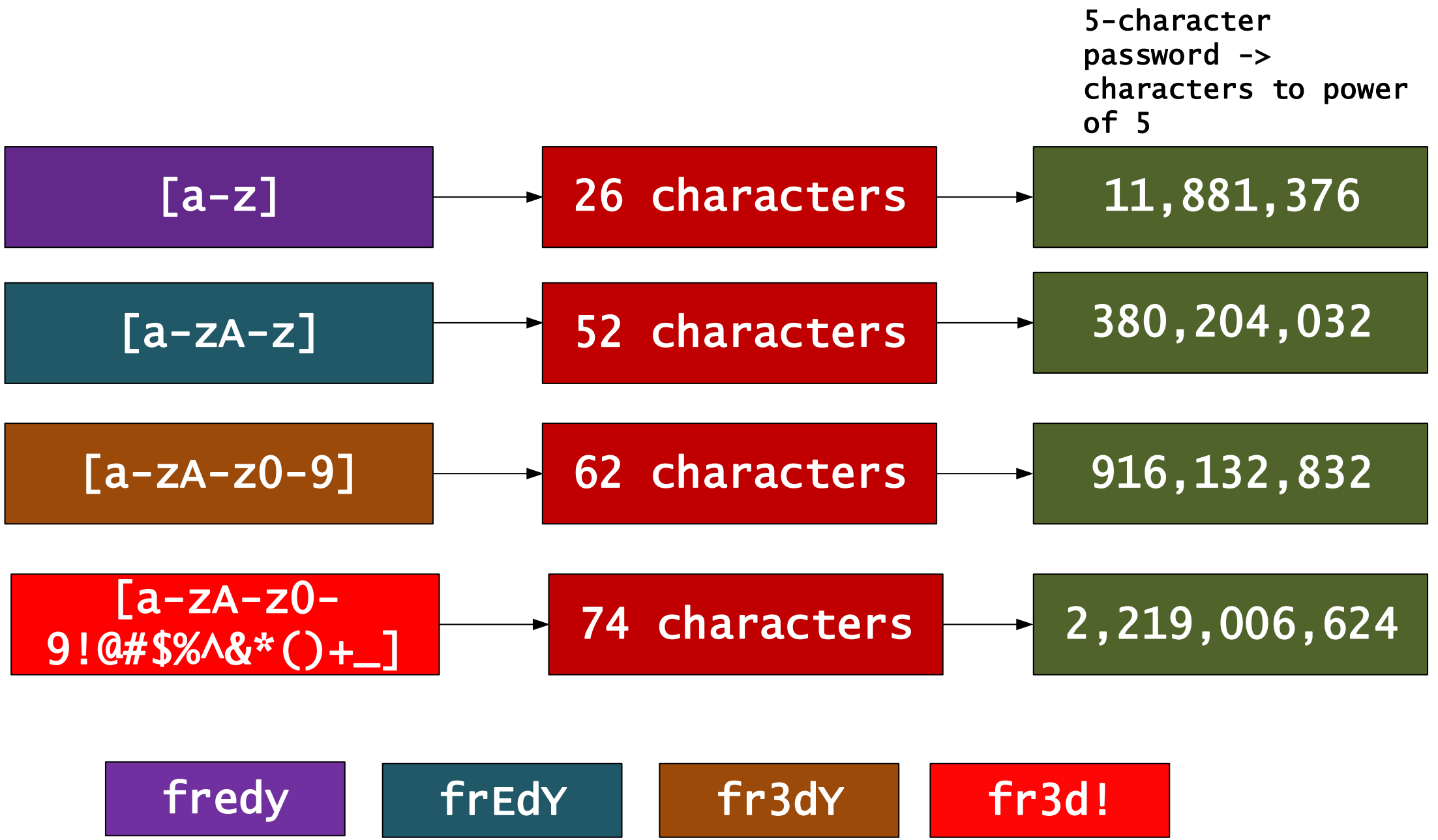
Character set

Number of characters




Bruce force speed

Avoidance of dictionary attacks


5-character password -> characters to power of 5
[a-z]
26 characters
11,881,376
[a-zA-z]
52 characters
380,204,032
[a-zA-z0-9]
62 characters
916,132,832
[a-zA-z0-9!@#$%^&*()+_]
74 characters
2,219,006,624
fredy
frEdY
fr3dY
fr3d!

5-character password

aaaaa

aaaab

$26^5$ Passwords = 11,881,376

1million passwords per second

$T_{max} = 26^5 / 1e6 = 11.88$ seconds

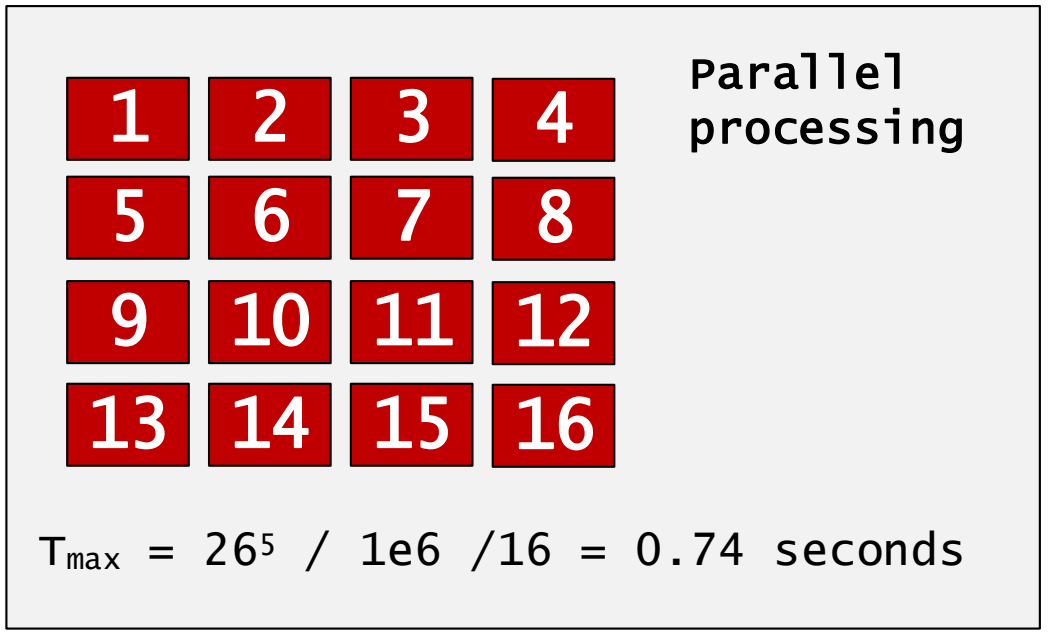
1

zzzzw

zzzzx

zzzzy

zzzzz



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