# ITS335 – User Authentication Notes

| username | password |
|---|---|
| john | mysecret |
| sandy | ld9a%23f |
| daniel | mysecret |
| ... | ... |
| steve | h31p_m3? |

Figure 1: Password Storage - Cleartext password; Lecture 07

| username | H(password) |
|---|---|
| john | 06c219e5bc8378f3a8a3f83b4b7e4649 |
| sandy | 5fc2bb44573c7736badc8382b43fbeae |
| daniel | 06c219e5bc8378f3a8a3f83b4b7e4649 |
| ... | ... |
| steve | 75127c78fd791c3f92a086c59c71ece0 |

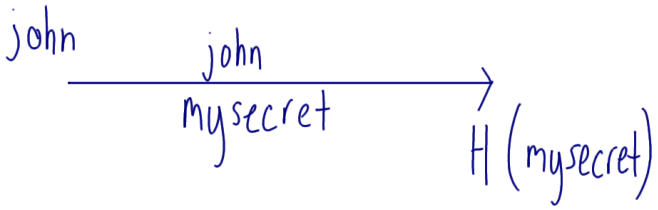


Figure 2: Password Storage - Hash of password and verification; Lecture 07

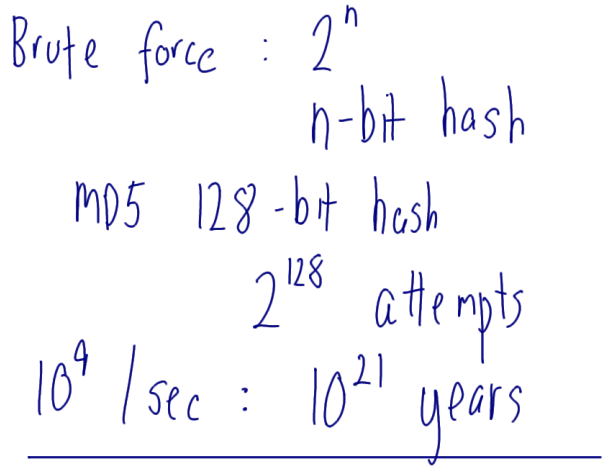


Figure 3: Password Storage - Brute Force on One Way Hash; Lecture 07

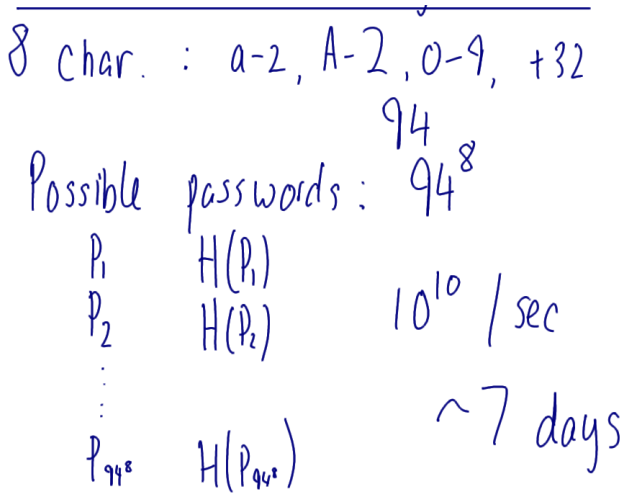


Figure 4: Password Storage - Try all passwords; Lecture 07

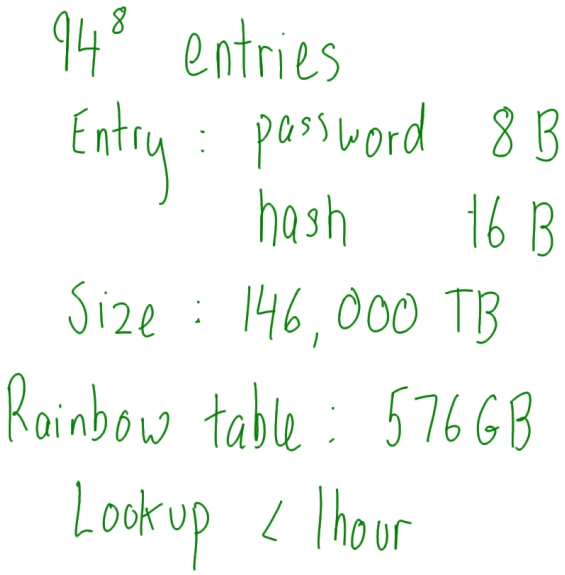


Figure 5: Password Storage - Rainbow Table Summary; Lecture 08

| username | salt | H(password \|\| salt) |
|---|---|---|
| john | a4H*1 | ba586dcb7fe85064d7da80ea6361ddb6 |
| sandy | U9(-f | 816a425628d5dee17839fffeafb67144 |
| daniel | 5<as4 | 11842ced4203d4067ed6a6667f3f18d9 |
| ... | ... | ... |
| steve | LqM4^ | 184b7f9c6126c568ee50cd3364257973 |

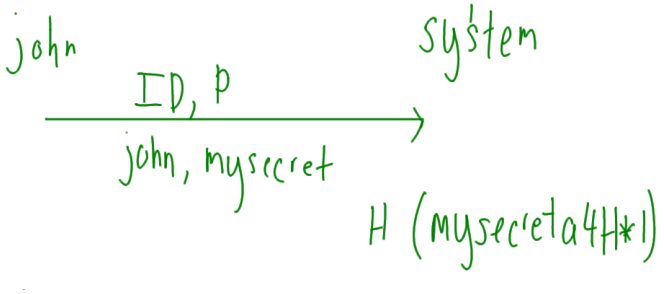


Figure 6: Password Storage - Salted Password; Lecture 08

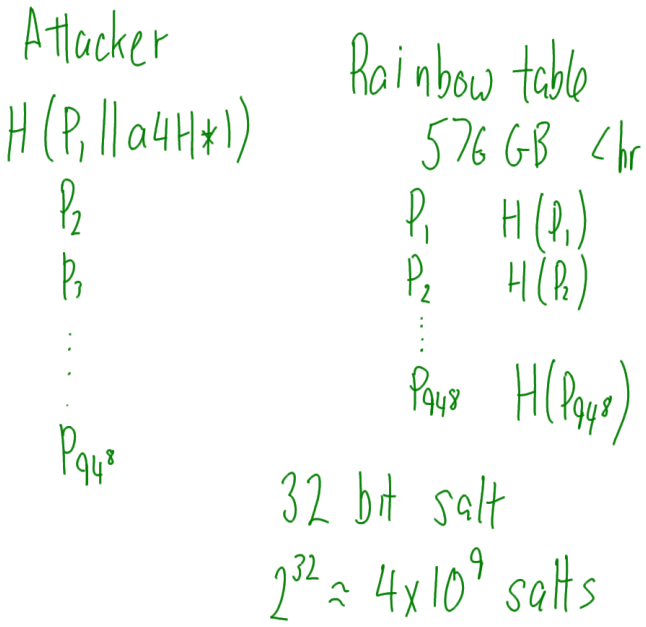


Figure 7: Password Storage - Salted Password and Rainbow Table; Lecture 08

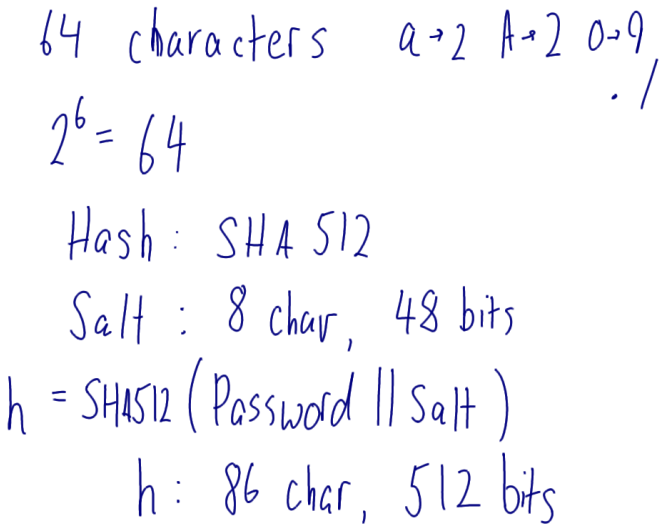


Figure 8: Linux Password Storage Example; Lecture 09