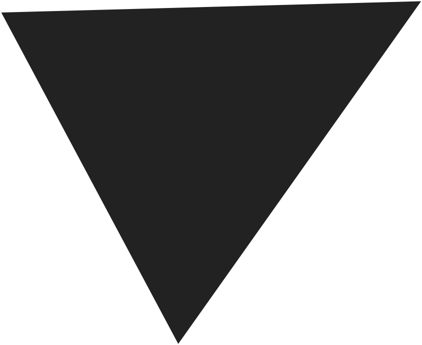
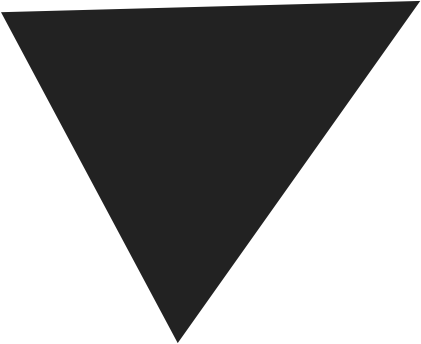
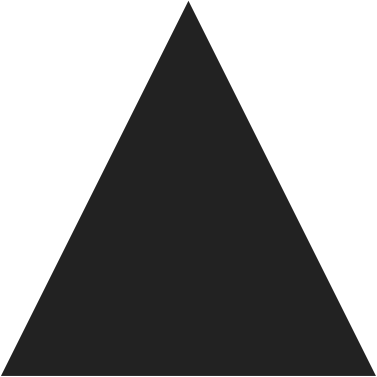
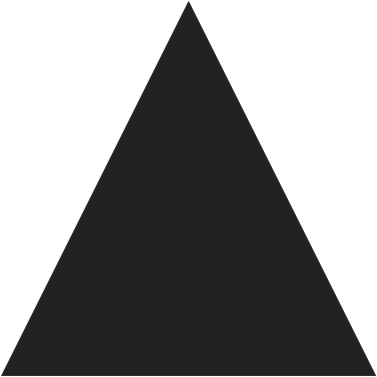
JENS NEUHALFEN









SECRET SHARING

GOOD CRYPTOGRAPHY

63

Problem: What happens when Alice forgets her password?

Solution: Use cryptographic secret sharing for recovery

Alice

Justus

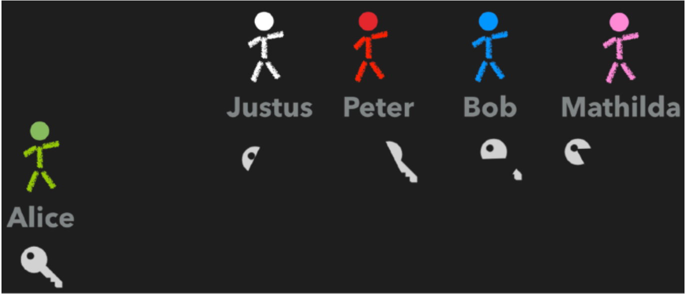
Peter

Mathilda

Bob

Alice will split her secret key (e.g. with Shamir) in such a way, that any three of her four trusted friends can restore the key.

Alice trusts her friends only so far. But she thinks it is very unlikely that three of them conspire together against her.



Justus

Peter

Bob

Mathilda

Alice

Problem: What happens when Alice forgets her password?

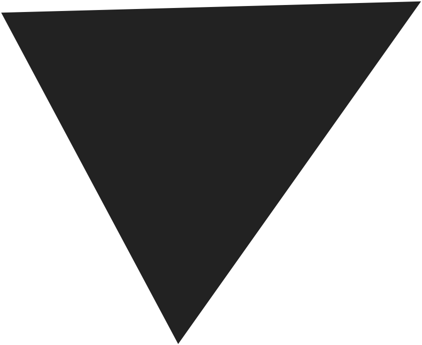
Solution: Use cryptographic secret sharing for recovery any three of her four trusted friends can restore the key.

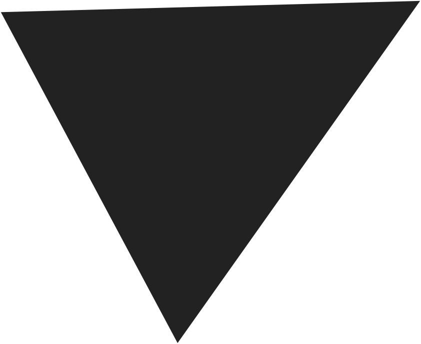
Alice will split her secret key (e.g. with Shamir) in such a way, that

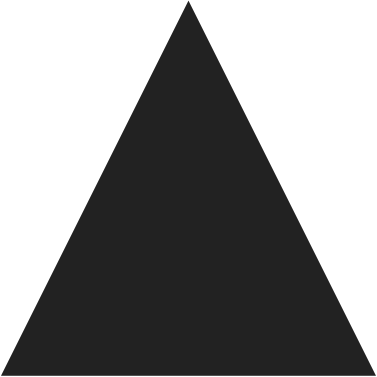
a single point of trust (failure).

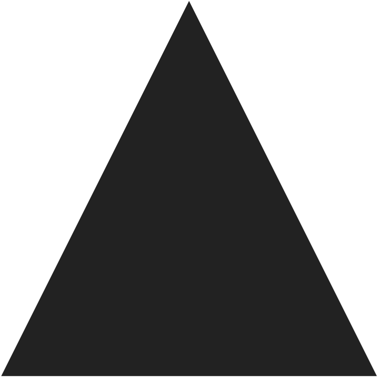
Secret sharing (“t out of n”) shares a secret

This can be used for secret recovery without such, that the secret can be restored with any t (here 3) of the n (here 4) parts.









64

Alice

Justus

Peter

Mathilda

Bob