

Exercise 9: Voting Process

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Voting Process:

- Elector enters the polling station
- Elector identifies himself with his id card and his right to vote at the desk
- Elector receives a token to identify himself at the 'Wahlinformationssystem'
- Elector logs in at the 'Wahlinformationssystem' with his token and his date of birth
- Elector can see the ballot paper for his 'Wahlkreis'
- Elector has the possibility to vote, he can also choose an invalid vote
- Elector sends his voting
- Elector is logged out automatically after he sent his vote
- Elector leaves the polling station

Data privacy:

- A direct connection between the vote and the elector does not exist in the database
- The token is only used for authentication and to mark if an elector has voted
- The vote is generated by the voting and is stored without a trace to the token
- The date of birth can not be reviewed by any person working for the election

Pervention of election fraud:

- Elector has to identify himself with his id card and his right to vote
- Elector has to log in with his token and his date of birth, which no one else can know as a pair
- Each elector only receives one token
- Each token is different from any other
- After an elector has sent his vote his token is blocked and can not be used again
- After an elector has sent his vote he is logged out automatically and can not send another vote

Method for generating the token:

- The token is stored in the database. Each elector has its own token.
- The token consists only of numbers
- The token is generated as an ascending sequence on the data in the database

- Advantages:
 - The token consists only of numbers, which means that an SQL Injection in the login input field is not possible
 - The electors are stored randomly in the databases, which means that no token can be assigned to a person just on guessing
- Disadvantages:
 - The number of electors is well known
 - All tokens can be guessed, but the token is just one part of the authentication