**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 an 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