

Exercise 1

1. Which data has to be managed?

- federal land
 - id
 - name
 - number of residents
 - number of seats
 - year of election
- Wahlkreis
 - id
 - name
 - federal land
 - number of residents
 - winner
 - (candidates)
 - year of election
- party
 - id
 - federal land
 - number of Erststimmen
 - number of Zweitstimmen
 - number of Wahlkreise won
 - number of seats
 - 5%-Hürde
 - year of election
- Landesliste
 - id
 - party
 - (federal land)
 - (candidates)
 - year of election
- candidate
 - id
 - name
 - Wahlkreis
 - place in Landesliste
 - (federal land)
 - party
 - number of Erststimmen
 - year of election
- elector
 - id
 - Wahlkreis
 - Erststimme
 - Zweitstimme
 - year of election

2. Advantages:

- fast and efficient access to the data of all elections
- real-time capability (predictions, ...)
- capable of managing large data sets
- reduction of manual tasks
- concurrent transactions
- avoids redundancy and consequently the appearance of inconsistency in the dataset
- integrity conditions can be checked, e.g. a party has to have a minimum of five percent of the seats to get into the parliament

3. UML diagram:

