

# Data Redundancy

- Data redundancy can lead to inconsistency
  - Update anomaly
    - ▶ The same information can be expressed on multiple rows, therefore updates to the relation may result in logical inconsistencies
  - Insertion anomaly
    - ▶ Certain facts cannot be recorded at all
  - Deletion anomaly
    - ▶ Deletion of data representing certain facts necessitates deletion of data representing completely different facts