



PA220: Database systems for data analytics

Data Warehouse Modelling

- More on Dimensions
- Case Study

Contents

- More on dimensions
 - revision of SCD on other examples
 - time zone issues
 - country specifics
- Case study of a grocery chain
 - sales and inventory
 - bus matrix creation

Revision of SCD on other examples

- See [admt07_dw.pdf](#)

Time zones and location

- A business operating in multiple countries
 - transactions in different time zones
 - country specific information
 - holidays, holiday shop opening hours, cargo-delivery limitations
 - location data
 - latitude, longitude

Time zones

- UTC, GMT – can be used to conform the time events
- Time zone offset as a degenerate dimension in the fact table?
 - + consolidates/normalizes events over different time zones
 - + can still differentiate time zones
 - - grouping data by time periods (morning / rush hours / ...)

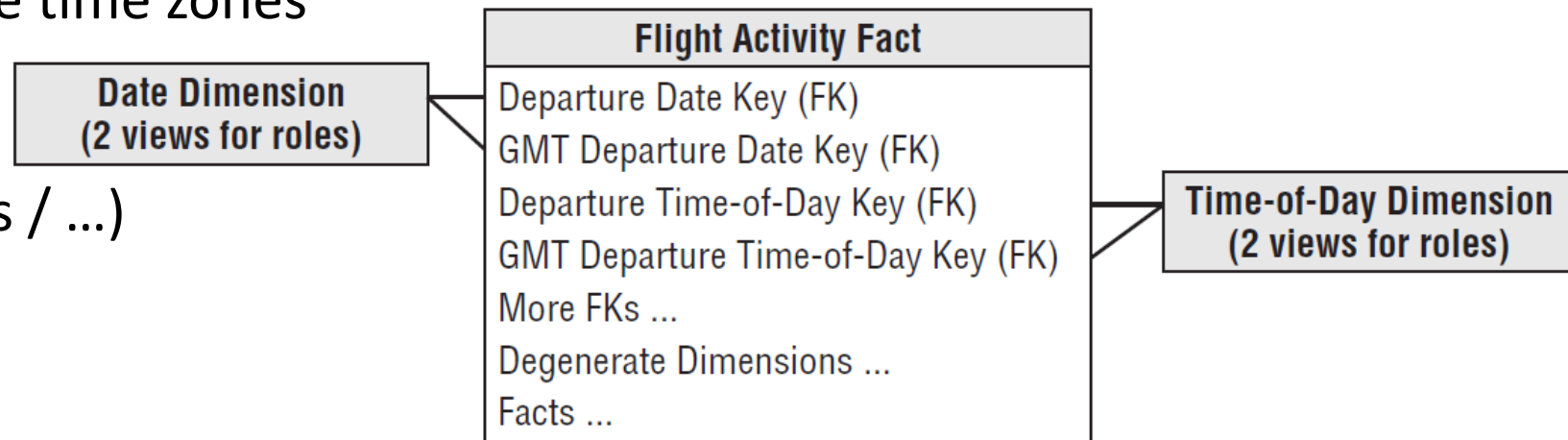


Figure 12-9: Local and equivalized date/time across time zones.

Country Specifics

- Holidays vary from country to country
 - other law implications

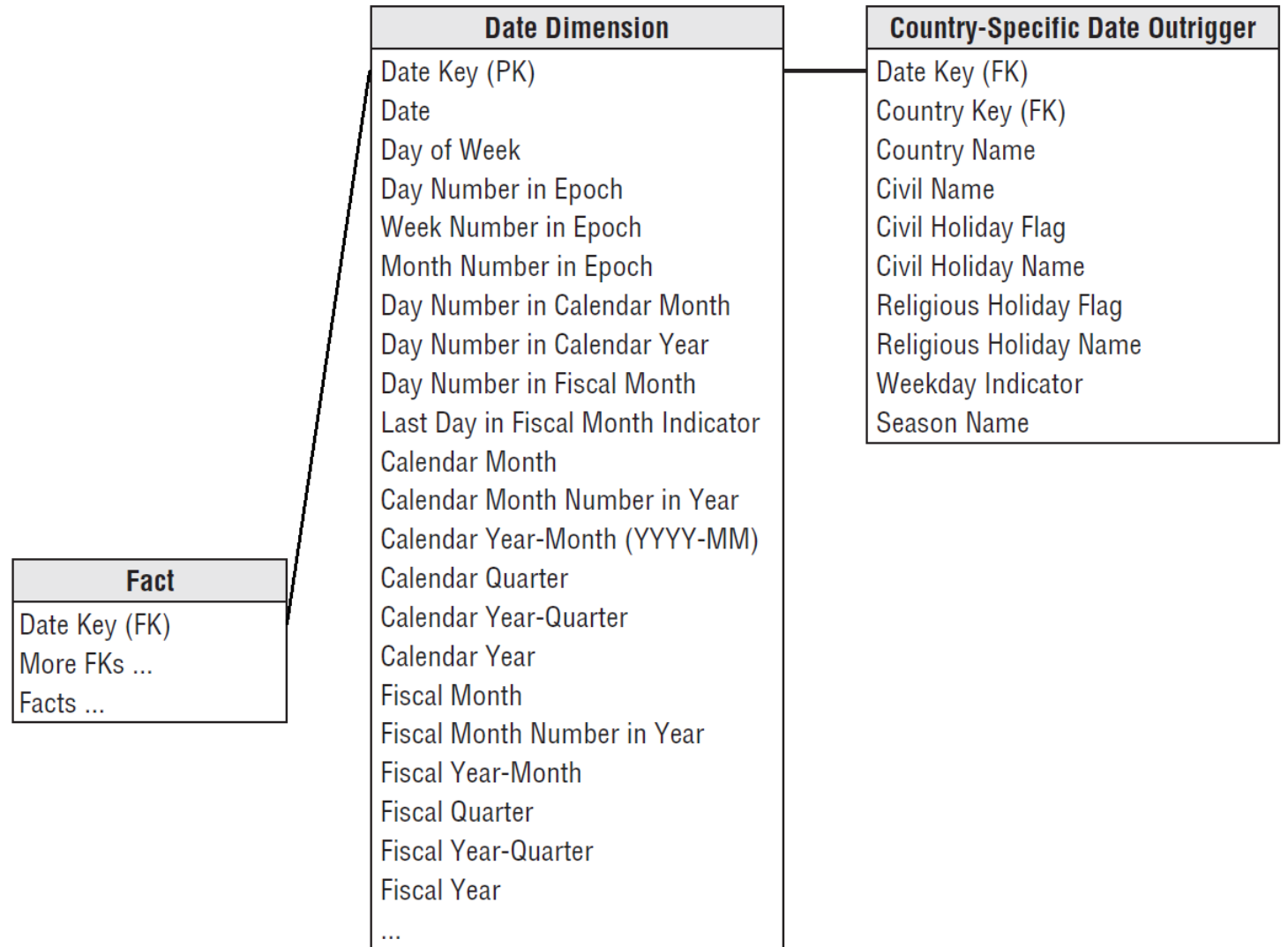


Figure 12-8: Country-specific calendar outrigger.

Source: The Data Warehouse Toolkit, by Kimbal

Location Data

- GPS coordinates - longitude, latitude
 - location of a shop, airport, ...
 - position of an aircraft, car, device, ...
- many different values → cannot be “enumerated”
 - not a regular dimension
 - not a measure
- Attributes in a dimension – e.g., shop location
- Degenerate dimension – e.g., aircraft position during flight

Case study on a grocery chain

- See [admt06_dw.pdf](#)