

# Normalisation

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## Port Tours Available

### UNF

PORT (port\_code, port\_name, country\_code, country\_name, (pt\_month, pt\_ave\_high, pt\_ave\_low), (tour\_no, tour\_name, tour\_desc, tour\_hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time))

### 1NF

PORT (port\_code, port\_name, country\_code, country\_name)

PORT\_TEMP (port\_code, pt\_month, pt\_ave\_high, pt\_ave\_low)

TOUR (port\_code, tour\_no, tour\_name, tour\_desc, tour\_hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time)

Partial Dependency based on Candidate keys

No partial dependencies present

### 2NF

PORT (port\_code, port\_name, country\_code, country\_name)

PORT\_TEMP (port\_code, pt\_month, pt\_ave\_high, pt\_ave\_low)

TOUR (port\_code, tour\_no, tour\_name, tour\_desc, tour\_hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time)

Transitive Dependency

Country\_code -> country\_name

## 3NF

PORT (port\_code, port\_name, country\_code)

COUNTRY (country\_code, country\_name)

PORT\_TEMP (port\_code, pt\_month, pt\_ave\_high, pt\_ave\_low)

TOUR (port\_code, tour\_no, tour\_name, tour\_desc, tour\_hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time)

### Full Dependency

port\_code -> port\_name, country\_code

country\_code -> country\_name

port\_code, pt\_month -> pt\_ave\_high, pt\_ave\_low

port\_code, tour\_no -> tour\_name, tour\_desc, tour\_hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time

# Port – Tour Participant Report

## UNF

TOUR\_OFF (port\_code, tour\_no, tour\_name, tour\_date, tour\_start\_time, (pass\_id, pass\_name, pass\_principal\_lang, cruise\_id, cruise\_name, tour\_part\_pay\_received))

## 1NF

TOUR\_OFF (port\_code, tour\_no, tour\_date, tour\_name, tour\_start\_time)

TOUR\_PART (port\_code, tour\_no, pass\_id, pass\_fname, pass\_lname, pass\_principal\_lang, cruise\_id, cruise\_name, tour\_part\_pay\_received)

### Partial Dependency based on Candidate keys

port\_code, tour\_no -> tour\_name, tour\_start\_time

pass\_id -> pass\_fname, pass\_lname, pass\_principal\_lang, cruise\_id, cruise\_name

## 2NF

TOUR\_OFF (port\_code, tour\_no, tour\_date)

TOUR (port\_code, tour\_no, tour\_name, tour\_start\_time)

TOUR\_PART (port\_code, tour\_no, pass\_id, tour\_part\_pay\_received)

PASSENGER (pass\_id, pass\_fname, pass\_lname, pass\_principal\_lang, cruise\_id, cruise\_name)

### Transitive Dependency

Cruise\_id -> cruise\_name

## 3NF

TOUR\_OFF (port\_code, tour\_no, tour\_date)

TOUR (port\_code, tour\_no, tour\_name, tour\_start\_time)

TOUR\_PART (port\_code, tour\_no, pass\_id, tour\_part\_pay\_received)

PASSENGER (pass\_id, pass\_fname, pass\_lname, pass\_principal\_lang, cruise\_id)

CRUISE (cruise\_id, cruise\_name)

### Full Dependency

port\_code, tour\_no -> tour\_name, tour\_start\_time

port\_code, tour\_no, pass\_id -> tour\_part\_pay\_received

pass\_id -> pass\_fname, pass\_lname, pass\_principal\_lang, cruise\_id

cruise\_id -> cruise\_name

## COLLECTED 3NF RELATIONS:

1. PORT (port\_code, port\_name, country\_code)
2. COUNTRY (country\_code, country\_name)
3. PORT\_TEMP (port\_code, pt\_month, pt\_ave\_high, pt\_ave\_low)
4. TOUR (port\_code, tour\_no, tour\_name, tour\_desc, tour\_hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time)
5. TOUR\_OFF (port\_code, tour\_no, tour\_date)
6. TOUR (port\_code, tour\_no, tour\_name, tour\_start\_time)
7. TOUR\_PART (port\_code, tour\_no, pass\_id, tour\_part\_pay\_received)
8. PASSENGER (pass\_id, pass\_fname, pass\_lname, pass\_principal\_lang, cruise\_id)
9. CRUISE (cruise\_id, cruise\_name)

## ATTRIBUTES SYNTHESIS

4 & 6

TOUR (port\_code, tour\_no, tour\_name, tour\_desc, hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time)

## FINAL 3NF:

- 1) PORT (port\_code, port\_name, country\_code)
- 2) COUNTRY (country\_code, country\_name)
- 3) PORT\_TEMP (port\_code, pt\_month, pt\_ave\_high, pt\_ave\_low)
- 4 & 6) TOUR (port\_code, tour\_no, tour\_name, tour\_desc, tour\_hour\_req, tour\_cost\_person, tour\_wheel\_chair\_access, tour\_availability, tour\_start\_time)
- 5) TOUR\_OFF (port\_code, tour\_no, tour\_date)
- 7) TOUR\_PART(port\_code, tour\_no, pass\_id, tour\_part\_pay\_received)
- 8) PASSENGER (pass\_id, pass\_fname, pass\_lname, pass\_principal\_lang, cruise\_id)
- 9) CRUISE (cruise\_id, cruise\_name)