

## Normalisation – Class Staffing Report

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### UNF:

CLASS (centre\_id, centre\_name, centre\_add, class\_num, class\_duration, fac\_roomnum, class\_startdate, class\_sessions, (staff\_id, staff\_name, class\_lead, staff\_firstaid))

### 1NF:

CLASS (centre\_id, class\_num, centre\_name, centre\_street, centre\_town, centre\_postcode, class\_duration, fac\_roomnum, class\_startdate, class\_sessions)

CLASS\_STAFF (class\_num, staff\_id, staff\_fname, staff\_lname, class\_lead, staff\_firstaid)

#### Partial Dependencies:

centre\_id -> centre\_name, centre\_street, centre\_town, centre\_postcode

staff\_id -> staff\_fname, staff\_lname, staff\_firstaid

#### Notes:

- **class\_duration, fac\_roomnum, class\_startdate, and class\_sessions, do not have partial dependencies**, because class\_num is not enough to determine them. If only class\_num is known, you have no idea which class that is, class 140 could be seven completely different classes depending on which centre you're talking about. Thus, centre\_id also required.

### 2NF:

CLASS (centre\_id, class\_num, class\_duration, fac\_roomnum, class\_startdate, class\_sessions)

CENTRE (centre\_id, centre\_name, centre\_street, centre\_town, centre\_postcode)

CLASS\_STAFF (class\_num, staff\_id, class\_lead)

AID (staff\_id, staff\_fname, staff\_lname, staff\_firstaid)

#### Transitive Dependencies:

No transitive dependencies whatsoever, in any of the 4 relations we have in 2NF, explanation as to why, is in notes.

#### Notes:

- I figured **class\_lead** was dependent upon BOTH **class\_num**, and **staff\_id**, because a staff member may only be qualified to lead some classes (yoga), but not other classes (spin), so both are required.
- I believe there are no transitive dependencies, because for CENTRE, as the client stated, multiple centres can have the same name, thus the attributes that come from centre\_add (address), must be dependent upon centre\_id.

For AID, staff\_firstaid must be dependent upon staff\_id (multiple staff members with same name), and finally, for CLASS, those 4 non-PK attributes cannot determine each other. For example, fac\_roomnum determined by class\_duration, would make no sense.

#### 3NF:

CLASS (centre\_id, class\_num, class\_duration, fac\_roomnum, class\_startdate, class\_sessions)

CENTRE (centre\_id, centre\_name, centre\_street, centre\_town, centre\_postcode)

CLASS\_STAFF (class\_num, staff\_id, class\_lead)

AID (staff\_id, staff\_fname, staff\_lname, staff\_firstaid)

#### Full Dependencies:

centre\_id, class\_num -> class\_duration, fac\_roomnum, class\_startdate, class\_sessions

centre\_id -> centre\_name, centre\_street, centre\_town, centre\_postcode

class\_num, staff\_id -> class\_lead

staff\_id -> staff\_fname, staff\_lname, staff\_firstaid

#### Note:

- Because there are no transitive dependencies in 2NF, 3NF is identical to 2NF.

## Normalisation – Class Attendance Report

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### UNF:

CLASS (centre\_id, centre\_name, class\_num, class\_type, class\_desc, fac\_roomnum, class\_startdate, class\_sessions, (member\_num, classmem\_paydate, (session\_date, session\_attendstatus) total\_attend))

### 1NF:

CLASS (centre\_id, class\_num, centre\_name, class\_type, class\_desc, fac\_roomnum, class\_startdate, class\_sessions)

CLASS\_PAY (centre\_id, class\_num, member\_num, classmem\_paydate, total\_attend)

SESSION\_ATTENDANCE (centre\_id, class\_num, member\_num, session\_date, session\_attendstatus)

### Partial Dependencies:

centre\_id -> centre\_name

### Notes:

- I believe centre\_id must be part of CLASS\_PAY PK, because it is possible for a member to attend two sessions on the same day, that have the same class number, but are at DIFFERENT CENTERS (and those 2 classes are of different types, one might be spin, the other yoga).
- I believe classmem\_paydate is not dependent upon just class\_num, and member\_num (so does not have a partial dependency), as it is possible for a member to purchase class 153, at one centre (might be a spin class), and a few months later, purchase class 153, at another centre (might be a yoga class), thus centre\_id required too. Same logic for total\_attend.

## 2NF:

CLASS (centre\_id, class\_num, class\_type, class\_desc, fac\_roomnum, class\_startdate, class\_sessions)

CENTRE (centre\_id, centre\_name)

CLASS\_PAY (centre\_id, class\_num, member\_num, classmem\_paydate, total\_attend)

SESSION\_ATTENDANCE (centre\_id, class\_num, member\_num, session\_date, session\_attendstatus)

### Transitive Dependencies:

No transitive dependencies, see notes:

### Notes:

- None of the non-PK attributes in CLASS, have transitive dependencies based on each other, as it's all determined solely by centre\_id, and class\_num (which specific class we're talking about).
- I initially thought that class\_desc would have a transitive dependency on class\_type, however this turns out to not be the case. As stated by the client, though 2 classes may be of the exact same type (HIT), their descriptions can still differ (HIT – Beginner, HIT – Intermediate). Thus, no functional (transitive) dependency between class\_type and class\_desc, we also need centre\_id and class\_num for the dependency.

## 3NF:

CLASS (centre\_id, class\_num, class\_type, class\_desc, fac\_roomnum, class\_startdate, class\_sessions)

CENTRE (centre\_id, centre\_name)

CLASS\_PAY (centre\_id, class\_num, member\_num, classmem\_paydate, total\_attend)

SESSION\_ATTENDANCE (centre\_id, class\_num, member\_num, session\_date, session\_attendstatus)

### Full Dependencies:

centre\_id, class\_num -> class\_type, class\_desc, fac\_roomnum, class\_startdate, class\_sessions

centre\_id -> centre\_name

centre\_id, class\_num, member\_num -> classmem\_paydate, total\_attend

centre\_id, class\_num, member\_num, session\_date -> session\_attendstatus