Normalisation – Class Staffing Report

**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

**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