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# Normalization

## 1. Class Staffing Report

### UNF

CLASS (cent\_id, cent\_name, cent\_street, cent\_town, cent\_postcode, class\_no, class\_duration, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions, (staff\_id, staff\_givenname, staff\_famname, staffing\_classleader, staffing\_firstaidcertified))

Repeating groups:

- STAFFING

PKs:

- cent\_id, class\_no, staff\_id

### 1NF

CLASS (cent\_id, class\_no, cent\_name, cent\_street, cent\_town, cent\_postcode, class\_duration, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions)  
STAFFING (staff\_id, cent\_id, class\_no, staff\_givenname, staff\_famname, staffing\_classleader, staffing\_firstaidcertified)

Partial dependencies:

- cent\_id -> cent\_name, cent\_street, cent\_town, cent\_postcode
- cent\_id, class\_no -> class\_duration, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions
- staff\_id -> staff\_givenname, staff\_famname

### 2NF

CENTRE (cent\_id, cent\_name, cent\_street, cent\_town, cent\_postcode)  
CLASS (cent\_id, class\_no, class\_duration, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions)  
STAFF (staff\_id, staff\_givenname, staff\_famname)  
STAFFING (staff\_id, cent\_id, class\_no, staffing\_classleader, staffing\_firstaidcertified)

Transitive dependencies:

- No transitive dependencies present

### 3NF

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

CLASS ( cent\_id, class\_no, class\_duration, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions)  
STAFF (staff\_id, staff\_givenname, staff\_famname)  
STAFFING (staff\_id, cent\_id, class\_no, staffing\_classleader, staffing\_firstaidcertified)

Full dependencies:

- cent\_id -> cent\_name, cent\_street, cent\_town, cent\_postcode
- cent\_id, class\_no -> class\_duration, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions
- staff\_id -> staff\_givenname, staff\_famname
- staff\_id, cent\_id, class\_no -> staffing\_classleader, staffing\_firstaidcertified

## 2. Member Class Attendance Report

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CLASS\_MEMBER\_ATTENDANCE (cent\_id, cent\_name, class\_no, class\_type, class\_desc, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions, (member\_no, pay\_date, (session\_date, session\_attendance), total\_attendance))

I made a new attribute "session\_attendance" because there needs to be an attribute for the data that represents whether a member was present or absent for a given session in a given class in a given centre.

Repeating groups:

- MEMBER\_CLASS\_ATTENDANCE
- MEMBER\_SESSION\_ATTENDANCE

PKs:

- cent\_id, class\_no, member\_no, session\_date

1NF

CLASS (cent\_id, cent\_name, class\_no, class\_type, class\_desc, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions)

MEMBER\_CLASS\_ATTENDANCE (cent\_id, class\_no, member\_no, pay\_date, total\_attendance)

MEMBER\_SESSION\_ATTENDANCE (member\_no, cent\_id, class\_no, session\_date, session\_attendance)

Partial dependencies:

- cent\_id -> cent\_name

- cent\_id, class\_no -> class\_type, class\_desc, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions

## 2NF

CENTRE (cent\_id, cent\_name)

CLASS (cent\_id, class\_no, class\_type, class\_desc, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions)

MEMBER\_CLASS\_ATTENDANCE (cent\_id, class\_no, member\_no, pay\_date, total\_attendance)

MEMBER\_SESSION\_ATTENDANCE (member\_no, cent\_id, class\_no, session\_date, session\_attendance)

Transitive dependencies:

- No transitive dependencies present

## 3NF

CENTRE (cent\_id, cent\_name)

CLASS (cent\_id, class\_no, class\_type, class\_desc, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions)

MEMBER\_CLASS\_ATTENDANCE (cent\_id, class\_no, member\_no, pay\_date, total\_attendance)

MEMBER\_SESSION\_ATTENDANCE (member\_no, cent\_id, class\_no, session\_date, session\_attendance)

Full dependencies:

- cent\_id -> cent\_name
- cent\_id, class\_no -> class\_type, class\_desc, fac\_roomno, class\_startdate, class\_starttime, class\_numofsessions
- cent\_id, class\_no, member\_no -> pay\_date, total\_attendance
- member\_no, cent\_id, class\_no, session\_date -> session\_attendance

Note: I renamed MEMBER\_CLASS\_ATTENDANCE to CLASS\_REGISTRATION, and in the logical model, I renamed PAYMENT to CLASS\_REGISTRATION because all the attributes were the same and I only needed to add a new attribute, total\_attendance, to CLASS\_REGISTRATION in the logical model.

I also renamed MEMBER\_SESSION\_ATTENDANCE to just ATTENDANCE in the logical model to shorten the length of the name.