

FIT3171 Assignment 1B- Normalization

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Monash Movement Class Staffing Report

UNF

CLASS(centre_id, centre_name, centre_street, centre_town, centre_postcode, class_no, class_duration, facility_room_no, class_start_date_time, class_no_of_sessions, (staff_id, staff_name, staff_class_leader, staff_first_aid_cert))

Identified Primary Key – centre_id, class_no

1NF

CLASS(centre_id, class_no, centre_name, centre_street, centre_town, centre_postcode, facility_room_no, class_start_date_time, class_no_of_sessions)

CLASS_STAFF(centre_id, class_no, staff_id, staff_name, staff_class_leader, staff_first_aid_cert)

Partial dependencies:

centre_id -> centre_name, centre_street, centre_town, centre_postcode

staff_id -> staff_name, staff_first_aid_cert

2NF

CLASS(centre_id, class_no, facility_room_no, class_start_date_time, class_no_of_sessions)

CENTRE(centre_id, centre_name, centre_street, centre_town, centre_postcode)

CLASS_STAFF(centre_id, class_no, staff_id, staff_class_leader)

STAFF(staff_id, staff_name, staff_first_aid_cert)

Transitive dependencies

No transitive dependencies present

3NF

CLASS(centre_id, class_no, facility_room_no, class_start_date_time, class_no_of_sessions)

CENTRE(centre_id, centre_name, centre_street, centre_town, centre_postcode)

CLASS_STAFF(centre_id, class_no, staff_id, staff_class_leader)

STAFF(staff_id, staff_name, staff_first_aid_cert)

Full dependencies

centre_id -> centre_name, centre_street, centre_town, centre_postcode

centre_id, class_no -> facility_room_no, class_start_date_time, class_no_of_sessions

centre_id, class_no, staff_id -> staff_class_leader

staff_id -> staff_name, staff_first_aid_cert

Class Attendance Report

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CLASS(centre_id, centre_name, class_no, class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions, (member_no, member_payment_date, (session_date, member_attended), member_total_attendance))

1NF

Identified Primary Key – centre_id, class_no

CLASS(centre_id, class_no, centre_name, class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions)

CLASS_MEMBER(centre_id, class_no, member_no, member_payment_date, member_total_attendance)

MEMBER_SESSION(centre_id, class_no, member_no, session_date, session_attended)

Partial dependencies:

centre_id -> centre_name

2NF

CLASS(centre_id, class_no, class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions)

CENTRE(centre_id, centre_name)

CLASS_MEMBER(centre_id, class_no, member_no, member_payment_date, member_total_attendance)

MEMBER_SESSION(centre_id, class_no, member_no, session_date, session_attended)

Transitive dependencies

No transitive dependencies present

3NF

CLASS(centre_id, class_no, class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions)

CENTRE(centre_id, centre_name)

CLASS_MEMBER(centre_id, class_no, member_no, member_payment_date, member_total_attendance)

MEMBER_SESSION(centre_id, class_no, member_no, session_date, session_attended)

Full dependencies

centre_id -> centre_name

centre_id, class_no -> class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions

centre_id, class_no, member_no -> member_payment_date, member_total_attendance

centre_id, class_no, member_no, session_date -> session_attended

Collected 3NF relations

1. CLASS(centre_id, class_no, facility_room_no, class_start_date_time, class_no_of_sessions)
2. CENTRE(centre_id, centre_name, centre_street, centre_town, centre_postcode)
3. CLASS_STAFF(centre_id, class_no, staff_id, staff_class_leader)
4. STAFF(staff_id, staff_name, staff_first_aid_cert)
5. CLASS(centre_id, class_no, class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions)
6. CENTRE(centre_id, centre_name)
7. CLASS_MEMBER(centre_id, class_no, member_no, member_payment_date, member_total_attendance)
8. MEMBER_SESSION(centre_id, class_no, member_no, session_date, session_attended)

Attribute synthesis

1 and 5

CLASS(centre_id, class_no, class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions)

2 and 6

CENTRE(centre_id, centre_name, centre_street, centre_town, centre_postcode)

3.

CLASS_STAFF(centre_id, class_no, staff_id, staff_class_leader)

4.

STAFF(staff_id, staff_name, staff_first_aid_cert)

7.

CLASS_MEMBER(centre_id, class_no, member_no, member_payment_date, member_total_attendance)

8.

MEMBER_SESSION(centre_id, class_no, member_no, session_date, session_attended)

Considering the logical model diagram, CLASS_MEMBER is the same relation as ENROLLMENT in the logical model. MEMBER_SESSION is renamed to be MEMBER_ATTENDANCE in the logical model.

Therefore, the final normalized relations are,

CLASS(centre_id, class_no, class_type, class_desc, facility_room_no, class_start_date_time, class_no_of_sessions)

CLASS_STAFF(centre_id, class_no, staff_id, staff_class_leader)

STAFF(staff_id, staff_name, staff_first_aid_cert)

ENROLLMENT(centre_id, class_no, member_no, member_payment_date, member_total_attendance)

MEMBER_SESSION(centre_id, class_no, member_no, session_date, session_attended)