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Relational Model

MEMBER (M.ID, M.FIRSTNAME, M,LASTNAME, M.DOB, M.EMAIL, M.GENDER, M.PASSWORD, TRAINERID*,OWNERID*)

MEMBERWORKOUTPLAN (W.PLAN_ID, W.MEMBERID, W.TITLE, W.GOAL, W.EXPERIENCE, W.SCHEDULE)

MEMBER.EXERCISE (E.ID, E.PLAN_ID*, E.SETS, E.NAME, E.TARGETMUSCLE, E.MACHINEREQ, E.REPS, E.RESTINTERVAL)

DIETPLAN (D.ID, MEMBERID*, D.TITLE, D.TYPE, D.PURPOSE, FATS, CARBS, FIBRE, PROTEIN, PEANUTS, GLUTEN, LACTOSE)

PERSONALTRAININGSESSION (S.ID, MEMBERID*, TRAINERID*, DURATION, DATETIME, FEEDBACK)

TRAINER (T.ID, T.SPECIALITY, T.PASSWORD, T.FIRSTNAME, T.LASTNAME, T.EMAIL, T.RATING,OWNERID*)

APPOINTMENT (A.ID, A.DATETIME, SCHEDULE, RESCHEDULE, CANCEL, TRAINERID*, MEMBERID*)

FEEDBACK (F.ID, MEMBERID*, GYMID*, TRAINERID*, RATING, COMMENTS)

TRAINER.WORKOUTPLAN (T.PLAN_ID, T.MEMBERID*, T.TRAINERID*, T.TITLE, T.GOAL, T.DETAILS)

TRAINER.DIETPLAN (D.ID, TRAINERID*, MEMBERID*, D.TITLE, D.D.OBJECTIVE, MEALOPTIONS, PORTIONSIZE, NUTRITIONAL)

GYMOWNER (OWNER_ID, O.FIRSTNAME, O.LASTNAME, O.EMAIL, O.PASSWORD, TYPEOFMEMBERSHIP, MEMBERSHIPDURATION, RATING, EXPERIENCE)

GYM (GYMID, GYMNAME, OWNERID*, LOCATION_ID*) -location is multivalued.

ADMIN (ADMIN.ID, MEMBERID*, TRAINERID*, USERNAME, PASSWORD, INSERT, DELETE)

GYMPERFORMANCEREPORT (REPORTID, GYMID*,ADMINID*, MEMBERSHIPREPORT, FINANCIALPERFORMANCE, CLASSATTENDANCERATE, CUSTOMERSATISFACTION)

APPROVAL REPORT (REQ_ID, GYMID*, OWNERID*, ADMINID*, REVIEWDATE, COMMENTS, SUBMITTEDDETAILS, REQDATE, STATUS)

AFTER NORMALIZATION:

MEMBER (M.ID, M.FIRSTNAME, M.LASTNAME, M.DOB, M.EMAIL, M.GENDER, M.PASSWORD)

TRAINER_MEMBER (TRAINERID, M.ID)

GYM_MEMBERSHIP (OWNERID, M.ID)

- Separate table if its many to many relationship between members and owners and trainers avoid redundancy

MEMBERWORKOUTPLAN (W.PLAN_ID, W.MEMBERID,)

WorkOutPlan (W.PLAN_ID, W.TITLE, W.GOAL, W.EXPERIENCE, W.SCHEDULE)

- If any N-to-N relation use separate table

MemberDIETPLAN (D.ID, MEMBERID*)

DietPlan (D.ID, D.TITLE, D.TYPE, D.PURPOSE, FATS, CARBS, FIBRE, PROTEIN, PEANUTS, GLUTEN, LACTOSE)

- To manage the relationship between members and their diet plans, especially if a diet plan can be shared among multiple members or a member can switch plans.

PERSONALTRAININGSESSION (S.ID, MEMBERID*, TRAINERID*, DURATION, DATETIME, FEEDBACK)

TRAINER (T.ID, T.SPECIALITY, T.PASSWORD, T.FIRSTNAME, T.LASTNAME, T.EMAIL, T.RATING,OWNERID*)

APPOINTMENT (A.ID, A.DATETIME, SCHEDULE, RESCHEDULE, CANCEL, TRAINERID*, MEMBERID*)

- There's no partial dependency and all non key attribute fully dependent on A.iD
- Every appointment is uniquely identified by **A_ID**, which also helps in ensuring that there is no partial dependency.

FEEDBACK (F.ID, MEMBERID*, GYMID*, TRAINERID*, RATING, COMMENTS)

- already normalize it because membered,gymid,trainer id and other non key not dependent on each other and all depents on F.Id which is primary key here
- How bcnf checks…. ?

{F.ID} -> {MEMBERID, GYMID, TRAINERID, RATING, COMMENTS} (Trivial)

{MEMBERID} -> {F.ID, GYMID, TRAINERID, RATING, COMMENTS} (Non-trivial)

{GYMID} -> {F.ID, MEMBERID, TRAINERID, RATING, COMMENTS} (Non-trivial)

{TRAINERID} -> {F.ID, MEMBERID, GYMID, RATING, COMMENTS} (Non-trivial)

{F.ID, MEMBERID} -> {GYMID, TRAINERID, RATING, COMMENTS} (Non-trivial)

{F.ID, GYMID} -> {MEMBERID, TRAINERID, RATING, COMMENTS} (Non-trivial)

{F.ID, TRAINERID} -> {MEMBERID, GYMID, RATING, COMMENTS} (Non-trivial)

- Table is already in BCNF
- MEMBERID, GYMID, and TRAINERID should be moved to separate tables if they represent distinct entities

TRAINER.WORKOUTPLAN (T.PLAN_ID, T.MEMBERID*, T.TRAINERID*, T.TITLE, T.GOAL, T.DETAILS)

TRAINER.DIETPLAN (D.ID, TRAINERID*, MEMBERID*, D.TITLE, D.D.OBJECTIVE, MEALOPTIONS, PORTIONSIZE, NUTRITIONAL)

- Its normalized form… because all non key attribute fully dependent on primary key attribute. Neither non key attribute depends on non key to violates 3nf and transitivity and partial dependencies occur
- MEMBERID and TRAINERID should be moved to separate tables if they represent distinct entities.

GYM (GYMID, GYMNAME, OWNERID*, LOCATION_ID*)

- location is multivalued.
- Use separate table

LOCATION (LOCATION_ID, STREETNO, AREACODE, CITY)

GYMOWNER (OWNER_ID, O.FIRSTNAME, O.LASTNAME, O.EMAIL, O.PASSWORD, TYPEOFMEMBERSHIP, MEMBERSHIPDURATION, RATING, EXPERIENCE)

ADMIN (ADMIN_ID, USERNAME, PASSWORD)

ADMIN_PERMISSIONS (ADMIN_ID*, MEMBER_ID*, TRAINER_ID*, INSERT,DELETE)

- INSERT and DELETE represent permissions granted to admins for performing insert and delete operations, respectively, on members or trainers.

GYMPERFORMANCEREPORT (REPORTID, GYMID*,ADMINID*, MEMBERSHIPREPORT, FINANCIALPERFORMANCE, CLASSATTENDANCERATE, CUSTOMERSATISFACTION)

APPROVAL REPORT (REQ_ID, GYMID*, OWNERID*, ADMINID*, REVIEWDATE, COMMENTS, SUBMITTEDDETAILS, REQDATE, STATUS)

- For distinct entites should moved into separate table gymid,adminid and reported in gymperformancereport table
- And other table should reported and other attributes except adminid and gymid
- Same for approval process