Database Assignment 2

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# **Conceptual Design**

## **Business rules**

* Clients can have only one personal trainer at a time
* A personal Trainer can have more than one client
* Some of the staff can be personal trainers
* All the personal trainers are part of the staff
* Personal trainers can have more than one specialty
* Allot of specialties can a personal trainer have
* Clients can visit the gym many times
* Clients can only have one training program
* One training program is assigned to one client
* Many personal trainers can write a training program
* Many training programs can be written by many personal trainers
* Clients can only have one package
* One package can be assigned to many clients

Many clients can join the gym and they can only have one personal trainer at a time if they which to have one. A personal trainer can have many clients that they must train. The clients can only have one training program each and the training programs can be written by many trainers. All the trainers are part of the staff and some of the staff are personal trainers. Each trainer can have many specialties that they specialize in and many specialties can be obtain by many trainers. The clients can visit the gym many times to exercise. Each client that have joined the gym can choose a package that they are on and can only choose one package and only one package can be assigned to many clients that have chosen a specific package.

## **1.2 ER Diagram**

CLIENTS

C\_IDNumber (PK)

C\_FName

C\_LName

C\_Gender

C\_Nationality

C\_PhoneNumber

C\_Email

C\_Weight

C\_BodyFat

C\_Picture

C\_TotalVisit

C\_Password

C\_DateJoined

C\_City

C\_Area

C\_StreetName

C\_StreetNumber

C\_PotalCode

P\_ID

PERSONAL TRAINER

PT\_ID (PK)

PT\_FName

PT\_LName

PT\_IDNumber

PT\_Gender

PT\_Race

PT\_PictureLink

PT\_PhoneNumber

PT\_CostPerSession

PT\_Password

SPECIALITY

SP\_ID (PK)

SP\_BodyPart

(1,N)

(1,N)

(1,N)

(1,1)

(1,1)

(1,1)

(1,N)

(1,1)

was

have

obtain

has

owned

Has a

PACKAGE

P\_ID (PK)

P\_Description

P\_Cost

STAFF

S\_ID (PK)

S\_FName

S\_LName

S\_IDNumber

S\_Picture

S\_Password

S\_City

S\_Area

S\_StreetName

S\_StreetNumber

S\_PostalCode

S\_PhoneNumber

S\_Email

S\_isAdmin

S\_ContactStartDate

GYMVISITS

G\_ID (PK)

C\_IDNumber (FK)

G\_ClockinDate

TRAINER SPECIALITY

PT\_ID (PK)(FK)

SP\_ID (PK)(FK)

# **Logical Design**

## **2.1 Logical data model**

**CLIENTS** (C\_IDNumber, C\_FName, C\_LName, C\_Gender, C\_Nationality, C\_PhoneNumber, C\_Email, C\_Weight, C\_BodyFat, C\_Picture, C\_TotalVisit, C\_Password, C\_JoinedDate, C\_City, C\_Area, C\_StreetName, C\_StreetNumber, C\_PostalCode)

PRIMARY KEY: C\_IDNumber

**STAFF** (S\_ID, S\_FName, S\_LName, S\_IDNumber, S\_Picture, S\_Password, S\_City, S\_StreetName, S\_StreetNumber, S\_PostalCode, S\_PhoneNumber, S\_Email, S\_isAdmin, S\_ContractStartDate)

PRIMARY KEY: S\_ID

**GYMVISITS** (G\_ID, *C\_IDNumber*, G\_ClockinDate)

PRIMARY KEY: G\_ID

FOREIGN KEY: C\_IDNumber REFERNCE CLIENTS

**SPECIALITY** (SP\_ID, SP\_Description, SP\_BodyPart)

PRIMARY KEY: SP\_ID

**TRAINERSPECIALITY** (*PT\_ID, SP\_ID*)

PRIMARY KEY: PT\_ID

SP\_ID

FOREIGN KEY: PT\_ID REFERNCE PERSONALTRAINER

SP\_ID REFERENCE SPECIALITY

**STAFFTRAINER** (*S\_ID, PT\_ID*)

PRIMARY KEY: S\_ID

PT\_ID

FOREIGN KEY: S\_ID REFERNCE STAFF

PT\_ID REFERENCE PERSONALTRAINER

**PRESONALTRAINER** (*PT\_ID, C\_IDNumber*)

PRIMARY KEY: PT\_ID

C\_IDNumber

FOREIGN KEY: PT\_ID REFERENCE PERSONALTRAINER

C\_IDNumber REFERNCE CLIENTS

**TRAININGPROGRAM** (TP\_ID, TP\_Description, TP\_Picture*, C\_IDNumber*)

PRIMARY KEY: TP\_ID

FOREIGN KEY: C\_IDNumber REFERNCE CLIENTS

**PACKAGE** (G\_ID, G\_Description*, C\_IDNumber*)

PRIMARY KEY: G\_ID

FOREIGN KEY: C\_IDNumber REFERNCE CLIENTS

**TRIANERSPROGRAM** (*TP\_ID, PT\_ID*)

PRIMARY KEY: TP\_ID

PT\_ID

FOREIGN KEY: TP\_ID REFERNCE TRAININGPROGRAM

PT\_ID REFERNCE PERSONALTRAINER