**Newfound Fitness – Introductory Paragraph**

A local commercial gym offers a wide range of fitness programs, exercise equipment, nutritional supplements, and classes to its members. The local gym only has one location, but offers a wide variety of services including: personal training, group fitness classes, and memberships. It also has other revenues of income such as selling workout supplements. Newfound Fitness is currently in the market for developing a database to better track their incoming revenue, staff, and membership information. By implementing this database system, they hope to optimize their resource allocation and improve member engagement by assessing data trends.

Like most businesses, Newfound Fitness will require a Point of Sale (PoS) system to keep track of both member and sales transactions. For the members, they pay their membership fees monthly and classes as they are needed. Workout supplements and protein shakes are also purchased through the same PoS system. Owners ultimately want to track inventory trends such as what products sell the most, what census is buying what product, and when products are being sold. They also want to keep track of what fitness classes are most popular and the age cohorts for each class. Knowing this information will help them better serve their clients and provide fitness options that are in line with their client’s needs.

**Entities:**

* Location: Location of gym and future gyms.
* Staff: Information about staff working at the gym including full name, salary, and employee number
* Membership Plans: Information about all of the current offered plans for gym members.
* Equipment: A complete inventory of all gym equipment including purchase date, muscle group, and maintenance schedule
* Fitness classes: A list of current offered classes that describes the type of class, max capacity, and instructor
* Supplements: complete list of supplements available
* Receipt: information about sales to the member, this will include all information found on the receipt.

*Note – other entities exist such as addresses, inventories, services employee has skills, etc. Consider these… make sample data in a spreadsheet, think it through, normalize.*

**ERD Relationships:**

* 1. **Person/Manager/Staff Member/ Gym Member to Address/Personal Info (One to One)**
* Each person can have one personal information
* Each set of personal information can only contain one person
  1. **Gym Location to Manger (Many to One)**
* Each gym location can have one manager
* Each manager can manage more than one gym
  1. **Staff members and Salary (Many to One)**
     + Each staff member can have one salary
     + There are many different salaries for each staff member
  2. **Equipment and Gym Location (Many to One)**
     + Each piece of equipment is located in one gym
     + Each gym location has many pieces of equipment
  3. **Fitness Class and Instructor (Many to one)**
     + Each class has one instructor
     + Each instructor can teach many classes
  4. **Price and Supplement/Membership (Many to one)**
     + Each supplement/membership has one price
     + There are many different prices for each supplement/membership
  5. **Receipt Item and Receipt (Many-to-One)**
     + Each receipt item is part of one receipt
     + Each receipt can have multiple receipt items
  6. **Receipt Item and Price (Many-to-One)**
     + Each receipt item has one price
     + Each price can be associated with multiple receipt items

**ERD Tables**

**Person Info:**

* Name\_ID (Primary Key)
* First name
* Last name
* Email

**Address:**

* Address\_ID (Primary Key)
* Street name
* City
* Province
* Postal Code

**Salary:**

* Salary\_ID (Primary Key)
* Salary amount

**Price:**

* Price\_ID (Primary Key)
* Price amount

**Gym Location:**

* Gym\_ID (Primary Key)
* Address\_ID (Foreign Key)
* Manager\_ID (Foreign Key)

**Manager:**

* Manger id (Primary Key)
* Name\_ID (Foreign Key)
* Address\_ID (Foreign Key)
* Salary\_ID (Foreign Key)

**Staff:**

* Employee id (Primary Key)
* Salary\_ID (Foreign Key)
* Name\_ID (Foreign Key)

**Member:**

* Member\_ID (Primary Key)
* Name\_ID (Foreign Key)
* Memership\_ID (Foreign Key)
* Date joined

**Membership:**

* Membership\_ID (Primary Key)
* Price\_ID (Foreign Key)
* Membership length

**Equipment:**

* Equipment \_ID (Primary Key)
* Equipment name
* Purchase date
* Availability status

**Fitness class:**

* Class\_ID (Primary Key)
* Employee\_ID as Class Instructor (Foreign Key)
* Max capacity

**Supplement:**

* Supplement\_ID (Primary Key)
* Price\_ID (Foreign Key)
* Supplement Name
* Current stock
* Reorder number

**Receipt:**

* Receipt\_ID (primary Key)
* Member\_ID (Foreign Key)
* Payment Method
* Tax\_ID (Foreign Key)
* Subtotal
* Total Amount

**Tax:**

* Tax\_ID (Primary Key)
* Tax Rate

**Receipt Item:**

* Receipt Item ID (Primary Key)
* Receipt\_ID (Foreign Key)
* Supplement ID (Foreign Key)
* Quantity
* Price\_ID (Foreign Key)