

Wholesale Management system

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I. Project Description

I will be building a wholesale management database dealing with rock climbing gear. The reason that I chose my product to be rock climbing gear at a gym is that I have 6 years of experience using a POS in a rock climbing gym. This system aims to help rock climbing gyms keep track of their inventory. The system's job is to act as POS, which is a point of sale. This allows the companies to track their sales, know how much inventory they have, and see each item in the system. The problem they face is being able to keep track of what gear is still in stock. Not being able to search past sales with keywords inside the system, having trouble looking for specific items in the system, and looking up members by other information besides their name. These flaws that the old system had been going to be resolved in this new system by updating systems computing and the human error with it. The database will update each time we get a shipment and add the number of new items to stock before putting the items away. The new system will allow the users to enter the database to check the item in stock, see the quantity of that specific item at other gyms, and also be seen as a worker or gym employee in the system. In this system the admin is able to change the number of the items each time they get a new shipment, they can request the items from both other gyms or the manufacturer of the item, and be seen as either the retail manager or a sales representative. The products are going to be used for keeping track of sales, the quantity of an item, keeping track of customers' invoices, and more.

II. Use Cases

1. Actor: joe(sales manager)
 - a. Joe is sales manager who works at a regional distribution center for a climbing brand. He wants to ensure that he has the correct number of sales each time he inputs it into the database; for him to do that, he needs to log in as an admin. This allows him to see the company's past sales, the projected amount of sales for this year, and the new sales for the month in the database.
2. Actor: Linda(representative)
 - a. Linda is a representative for a climbing gear brand. Her job is to go to the climbing gym and sell the rock climbing gear from her company. With this job, she has admin access to the system. This allows her to know which gyms have been visited and what gear has been brought to these gyms. The one problem however is she doesn't know what the gym's inventory looks like for each of the products, so when she goes she doesn't know if the gym already has their products.
3. Actor: Alex(sales manager)
 - a. Alex is a sales manager of a climbing brand who is in charge of climbing gear sales. Each time climbing gear is sold, Alex checks the inventory to see if it is the right amount of gear has been sold. Once he does this, he makes a mark if the new data in the system is incorrect or if the number of items isn't correct.
4. Actor: Lilo(retail manager)
 - a. Lilo is a retail manager for a rock climbing gym who has been wondering where the order she made was. To see the order progress, she has to log in to the system as a user to see the orders. While accessing this, only give her permission to buy, which allows her to see her order progress and how much she has purchased for her gym. However, it does not allow her to get in contact with the representative if the items were sent to the wrong gym.

5. Actor: Ted(gym front desk)
 - a. Ted is a gym front desk at a rock climbing gym. His job is selling gear to new members and guests at the gym. He is a user in the system and this only allows him access to see the gym inventory for a certain item throughout the gyms. Because he can see the quantity of the items he knows whether or not the item is in the inventory. If the item is not in that gym's inventory he also is able to see if the item is at another gym and the quantity of that certain item.

III. Database Requirement

1. User
 - 1.1. A user can request an invoice for each month's bill.
 - 1.2. A user can make a one or zero sales account
2. Admin
 - 2.1. Admin shall be able to see many gym profits.
 - 2.2. Admin can see many invoices
 - 2.3. A admin can be register an account for many manufacture.
 - 2.4. An admin can be only be one gym director
 - 2.5. An admin can see many inventory
 - 2.6. An admin can see many stock
 - 2.7. An admin can see zero or one manufacturer sales
3. Sales account
 - 3.1. A sales account can be made by only one user
 - 3.2. A sales account can be accessed by many managers
 - 3.3. A sales account be made by at least one sale manager
 - 3.4. A sale account is associated with only one brand
4. Manager
 - 4.1. A manager can order many climbing gears
 - 4.2. A manager can talk to many representatives
 - 4.3. A manager can speak to many regional distribution centers.
 - 4.4. A manager can work with many workers
 - 4.5. A manager can see at many sales accounts
5. Representative
 - 5.1. A representative can go to many gyms
 - 5.2. A representative can sell many rock climbing gear
 - 5.3. A representative can talk to many managers
 - 5.4. A representative can work with many gym front desk
 - 5.5. A representative can represent one or zero brands
 - 5.6. Representatives can contact zero or one RDC
 - 5.7. A representative can see many brand sales
6. Worker
 - 6.1. A worker can work with many representatives
 - 6.2. A worker can work with many managers
 - 6.3. A worker can work at zero or one manufacturer
7. Gym staff
 - 7.1. A gym staff can be many front desks
 - 7.2. A gym staff can have many directors
 - 7.3. A gym staff shall be at at least one location
8. Gym front desk

- 8.1. A gym front desk can work with at many representatives
- 8.2. A gym front desk can check many inventories
- 8.3. A gym front desk can send out many invoices
- 8.4. A gym front desk can be zero or one gym staff
- 8.5. A gym front desk can talk to many rock climbers
- 8.6. Gym front desk can sell many items
- 9. Brand
 - 9.1. A brand can have many representatives
 - 9.2. A brand can have many manufacturers
 - 9.3. A brand has many sales accounts
- 10. Gym
 - 10.1. A gym can have many locations
 - 10.2. A gym can deal with many representatives
 - 10.3. A gym can have many gym profits
 - 10.4. A gym can receive many orders of climbing gear
 - 10.5. A gym can have many rock climbers
 - 10.6. A gym can have many deliverer
- 11. Manufacture
 - 11.1. A manufacturer can have many manufacturer workers
 - 11.2. A manufacturer can do business with one or zero brands
 - 11.3. A manufacturer can have many admins
 - 11.4. A manufacturer can have many workers
 - 11.5. A manufacturer can have many deliverers
- 12. Climbing gear
 - 12.1. Climbing gear can be shown by many representatives
 - 12.2. Climbing gear can be sold by many front desks
 - 12.3. Climbing gear can be ordered by many managers
 - 12.4. Climbing gear can be sent by many gyms
 - 12.5. Climbing gear can be bought by many rock climbers
 - 12.6. Climbing gear can be zero or one harness
 - 12.7. Climbing gear can be zero or one rope
 - 12.8. Climbing gear can be zero or one climbing sho
- 13. Manufacturer Sales
 - 13.1. Manufacturer sales can be seen by many admins
 - 13.2. manufacturer's sales can be used by at least one sales manager
- 14. Regional distribution center (RDC)
 - 14.1. An RDC can contact many representatives
 - 14.2. An RDC can contact one or zero managers
- 15. Rock climber
 - 15.1. A rock climber can buy many climbing gears

- 15.2. A rock climber can talk to one or zero gym front desk
- 15.3. Rock climbing can go to many gyms
- 15.4. A rock climber can go to many stores
- 15.5. A rock climber can buy zero or one pair of climbing shoes
- 16. Inventory
 - 16.1. An inventory can be checked by many at a gym front desk
 - 16.2. An inventory can be checked by many manufacturer workers
 - 16.3. An inventory can be seen by one or zero admin
- 17. Brand sales
 - 17.1. Brand sales can be made by many brand works
 - 17.2. Brand sales can be seen by at least one representative
 - 17.3. A brand can talk to many other brands
- 18. Workers
 - 18.1. Workers can work with anyone or zero managers
 - 18.2. Workers can work with many manufacturer workers
- 19. Brand worker
 - 19.1. A brand worker works for at least one brand
 - 19.2. A brand worker makes at least one brand sales
- 20. Manufacturer worker
 - 20.1. A Manufacturer worker can work for at least one manufacturer
 - 20.2. A manufacturer worker can check many inventories
- 21. Stock
 - 21.1. A stock can be updated by atleast one retail manager
 - 21.2. A stock can be updated by only one sales manager
- 22. Stores
 - 22.1. A store can sell to many rock climbers
 - 22.2. A store can sell many items
- 23. Deliverer
 - 23.1. A deliverer can drive to zero or one gym
 - 23.2. A deliverer can work for zero or one manufacturer
- 24. Harness
 - 24.1. A harness can be at least one climbing gear
- 25. Climbing shoes
 - 25.1. A climbing shoe can be bought by many rock climbers
 - 25.2. A climbing shoe can be many types of moderate shoes
 - 25.3. A climbing shoe can be many types of aggressive shoes
 - 25.4. Climbing shoes can be at least one climbing gear
- 26. Ropes
 - 26.1. A rope can be at least one climbing gear

- 27. Gym director
 - 27.1. A gym director can have many gym front desk
 - 27.2. A gym director can work for one or zero gyms
- 28. Sales manager
 - 28.1. A sales manager can see many stocks
 - 28.2. A sales manager can have to make at least one sale account
 - 28.3. A sales manager can look at many manufacturer sales
- 29. Invoice
 - 29.1. An invoice can be requested by many users
 - 29.2. An invoice shall be sent by zero or one front desk
 - 29.3. An invoice can be seen by many admins
- 30. Item
 - 30.1. An item can be sold by at least one gym front desk
 - 30.2. An item can be sold at zero or one store
- 31. Retail manager
 - 31.1. A retail manager can check many stocks
 - 31.2. Retail managers can see many gym profits
- 32. Shirts
 - 32.1. A shirt can be at least one gear
- 33. Pants
 - 33.1. A pair of pants can be at least one gear
- 34. Gym profits
 - 34.1. Gym profits can be seen by zero or one retail manager
- 35. Location
 - 35.1. A location can be used by zero or one gym
 - 35.2. A location can have many gym staff
- 36. Deliveries
 - 36.1. Delivery shall be sent out by at least one sales manager
 - 36.2. Delivery shall be received by at least one retail manager
- 37. Sports harness
 - 37.1. A sports harness can be only one harness
- 38. Aggressive shoes
 - 38.1. An aggressive shoe can be only one type of climbing shoe
- 39. Moderate shoes
 - 39.1. A moderate can be only one type of climbing shoe
- 40. Carabiner
 - 40.1. A carabiner is at least one locking carabiner
 - 40.2. A carabiner is at least one screw gate carabiner
 - 40.3. A carabiner is zero or one gear
- 41. Locking carabiner

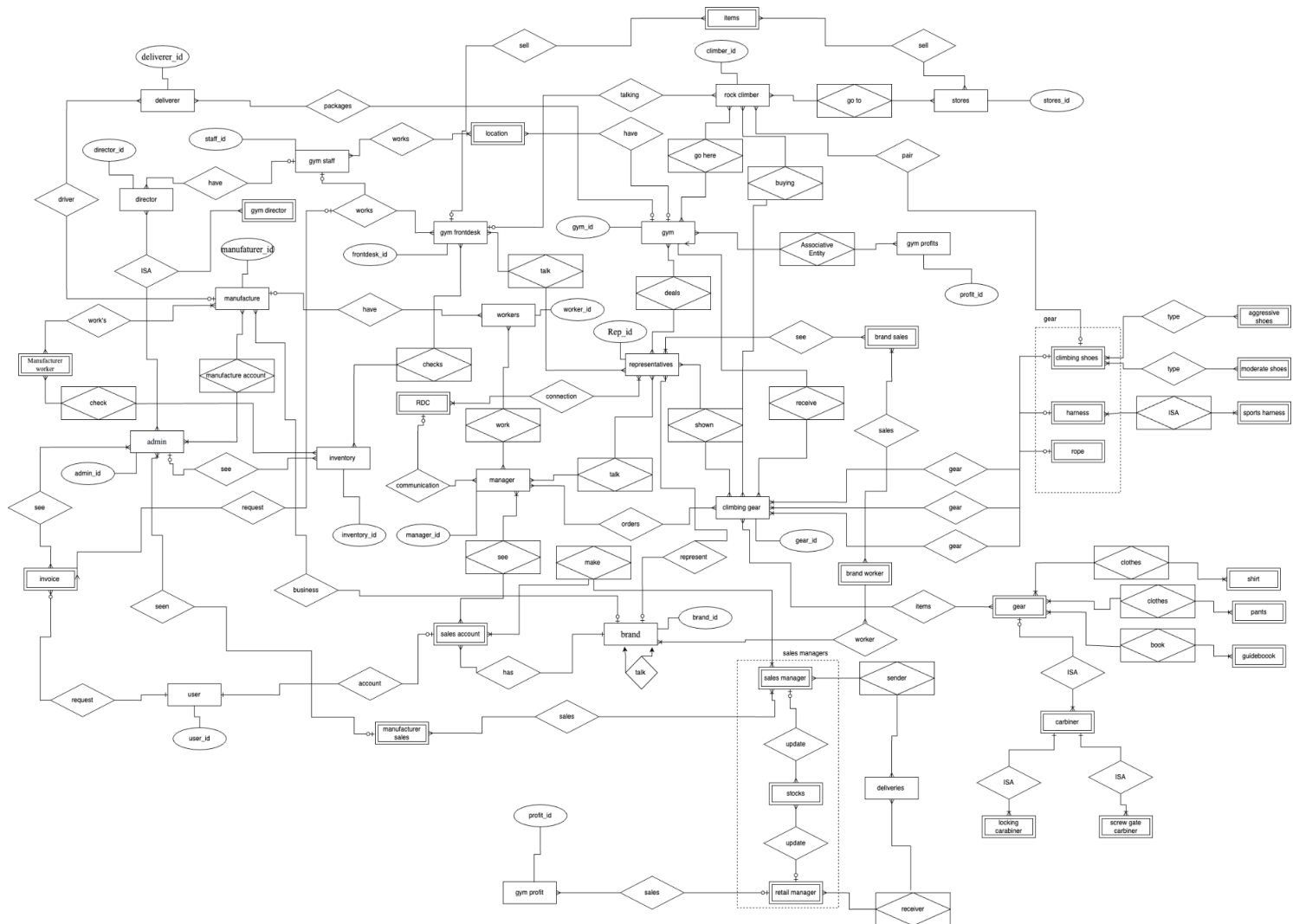
- 41.1. A locking carabiner can be only one carabiner
- 42. Screw gate carabiner
 - 42.1. A screw gate carabiner can be only on carabiner
- 43. Guide book
 - 43.1. a guidebook can be at least one gear
- 44. Gear
 - 44.1. A gear is many pieces of climbing gear
 - 44.2. Gear is at least one guidebook
 - 44.3. Gear is at least one shirt
 - 44.4. Gear is at least one pants
 - 44.5. Gear is at least one carabiner
- 45. Director
 - 45.1. A director can be one or zero admin
 - 45.2. A director can be one or zero gym staff

IV. Detailed List of Main Entities, Attributes, and Keys

1. User (strong)
 - user_id: key, alphanumeric
 - Name: alphanumeric
 - Age: numeric
2. Brand (strong)
 - brand_id: key, alphanumeric
 - Name: alphanumeric
 - place: alphanumeric
3. admin (strong)
 - admin_id: key, numeric
 - Name: alphanumeric
 - Person: alphanumeric
4. manager (Strong)
 - manager_id: key, numeric
 - Admins: alphanumeric
 - Age: numeric
5. Gym staff(strong)
 - staff_id: key, alphanumeric
 - user: key, numeric
 - Age: key. Numeric
6. director (strong)
 - Director_id: key, numeric
 - Admin: alphanumeric
 - Age: numeric
7. gym(strong)
 - gym_id: key, alphanumeric
 - Name: alphanumeric
 - Place: alphanumeric
8. Climbing gear(stong)
 - gear_id: key.numeric
 - Name: alphanumeric
 - Price: numeric
9. Deliverer (strong)
 - deliverer_id: key, numeric
 - Driver: alphanumeric
 - Age: numeric
10. Manufacturer (strong)
 - manufaturer_id: key, numeric
 - Name: alphanumeric

- Place: alphanumeric
- 11. Representative (strong)
 - Rep_id: key, numeric
 - name: key, alphanumeric
 - Age: numeric
- 12. Gym profits (strong)
 - profits_id: key, numeric
 - profit: numeric
 - Price: numeric
- 13. Rock climber (strong)
 - climber_id: key, numeric
 - Name: alphanumeric
 - age: numeric
- 14. Gym frontdesk(strong)
 - frontdesk_id: key, numeric
 - Name: alphanumeric
 - age: numeric
- 15. Worker (strong)
 - worker_id: key, numeric
 - name: alphanumeric
 - Age: numeric
- 16. Stores (strong)
 - store_id: key, numeric
 - Name: key, alphanumeric
 - Place: alphanumeric

V. Entity Relationship Diagram (ERD)



VI. DATABASE Model /EER

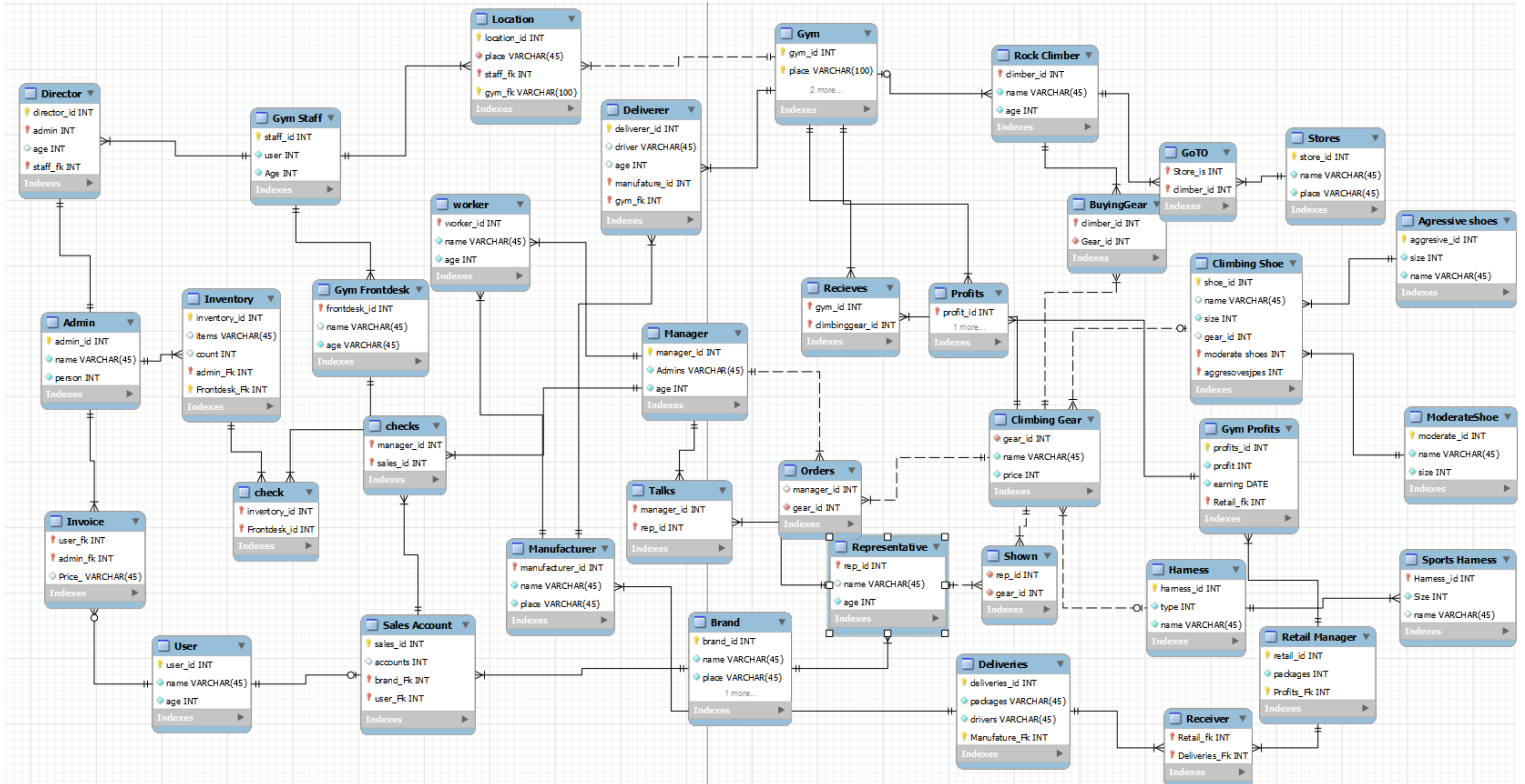


Table	FK	On Delete	On Update	Comment
Climbing Gear	ClimbingShoes, Harness	Set cascade	Set cascade	If climbing shoes and harness are deleted, then the harness and climbing shoes from that user should be deleted
Deliverer	Manufacture	Set cascade	Set cascade	If a Manufacturers deleted, then the deliverer from that manufacture should be deleted
Director	Admin, staff	Set cascade	Set null	If an admin and staff is deleted, then the admin and staff is set as unassigned by the director until a new one is an assigned
Gym Frondesk	staff	Set cascade	Set cascade	If staff is deleted, then the staff is deleted from gym front desk
Gym Profits	manager	Set cascades	Set null	If a manager is deleted then the gym profits become unassigned until a new gym manager is chosen
Manufacture	Deliveries	Set cascade	Set null	If the deliveries are deleted then the manufacturer is set as unassigned until new ones are assigned.
Representative	Brand	Set cascade	Set null	If the brand is deleted, then the Representative is set to unassigned until a new brand is made
Rock climber	gym	Set cascade	Set cascade	If a gym is deleted, then the gym should be deleted from that rock climber
Worker	Manager, Manufacturer	Set cascade	Set cascade	If a worker is deleted, then that worker should be deleted from both the manager and manufacturer.
BuyingGear	Rock climber, climbing gear	Set cascade	Set cascade	If rock climbing gear and rok climber are deleted, then they should be deleted from buying gear
Type	Harness, Climbing shoes, aggressive shoes,	none	none	none

	moderate shoes, sports harness			
GoTo	Rock Climber, Store	Set null	Set null	If goto is set to null, then this means that both the store and rock climbers are both nulls
Receives	Gym, climbing gear	Set cascade	Set cascade	If the gym and climbing gear are deleted, then they are deleted from the receives after the items are received
Order	Manager, gear	Set cascade	Set Null	If manager and gear are deleted then the orders are set to null until they are assigned
Shown	Climbing gear, representative	No action	No action	none
Talks	Manager, representative	No action	No action	None
Profits	Gym profits, Gym	Set cascade	Set null	If the gym and gym profits are deleted, then set the profits to null until the sales account is assigned.
Sales Account	Brand, user	Set cascade	Set null	If the brand and user are deleted, then the sales account is set to null until it is assigned to a new one.
Checks	Manager, inventor, sales, gym front desk	Set cascade	Set cascade	If all of the checks are deleted, then they are deleted from the checks after looking at
Reciever	deliveries, retail	Set cascade	Set cascade	If the deliveries and retail manager are deleted then we delete them from the receiver
Inventory	admin	Set cascade	Set cascade	If an admin is deleted, then they are deleted from the inventory
Invoice	User, admin	Set cascade	Set cascade	If the user and admin are deleted, then they are going to be deleted by the invoices
Location	Gym, staff	Set Cascade	Set cascade	If the gym and gym staff are deleted, then they are gonna be deleted from the location they are in.