Project 1, Monday 09/12

# Business Processes

1. **Adding Clients**,
   1. Record details including clients name & address & unique client ID & balance
   2. Generate Client ID, each Client has a unique ID
2. **Adding Products**
   1. Record details including product name, amount in stock, sale price.
   2. Generate product ID, each product has a unique product ID
3. **Track client transactions,**
   1. Record details including invoice date, descriptive string, and number for dollar amount.
   2. Add transaction to database
4. **Remember Client Wishlist**
   1. Add product and quantity
   2. Remove product and quantity
5. **Generate Invoices**
   1. go through client’s wishlist and for each item ask if it should be ordered and quantity
   2. ask if any additional items and quantities to include (referenced by product ID),
   3. Then Generates an Invoice, listing products available to purchase, quantities, and prices
   4. Items available are included in transaction, items that are unavailable have the client’s ID added to the waitlist with quantity needed.
   5. Bills the amount of the transaction to the client’s account balance
   6. occurs when client orders are accepted or when wait-listed items are available.
6. **Accepting clients payment,**
   1. credit amount for wait-listed items to client.
   2. Apply payment amount to client’s balance
7. **Accepting shipment,** 
   1. Update available amounts of received product
   2. Add any new products to product list
8. **Query the Database**
   1. List client transactions
   2. List products, price, and quantity available
   3. List clients with outstanding balances
9. **Additional Queries**
   1. List specific clients with an outstanding balance
   2. List products with waitlists
   3. List clients on the waitlist for a particular product
   4. List specific transaction from a client

# Entities

1. **Client**
2. **Product**
3. **Wishlist**
4. **Waitlist**
5. **Invoice**
6. **Transaction History**
7. **Transaction**
8. **Payment**
9. **Inventory**
10. **Shipment**

# Explanation

Explain why these and not others, client is an object that would need to be instantiated for each client to order, and would have various attributes associated with it. Same with product. Wishlist, waitlist, and transaction history are large enough structures to warrant their own objects which would be associated to their respective client or product. Invoices are unique to a particular transaction and client, but have additional details as attributes which aren’t recorded in the transaction history. Inventory is the collection of products that are to be sold. Shipments are a collection of products with their own attributes that update the inventory.



