According to the ER Diagram, we convert the relationship to relation in the following way.

1. Convert strong and not subtype Entities

HUMAN (ID, FNAME, MNAME, LNAME, PHONE, EMAIL)

ID is the primary key; FNAME means first name; MNAME means middle name; LNAME means last name; PHONE means phone number; EMAIL means email address.

ITEM (IID, INAME, PRICE, IEDITION, ICONDITION, TAX, IDETAIL, FRESHIP, PROMO, SALE, DISCOUN, TPRICE, REWARD)

IID is the primary key, means Item ID; INAME means Item name; Price means Item price; IEDITION means Item edition(Standard/Plus Expansion Pass); ICONDITION means Item condition(New/Pre-Owned/Digital); FRESHIP is a bool type attribute, it means whether the item is free shipping or not; PRONO is a bool type attribute, it means whether this item can be bought by a coupon or not; SALE is a bool type attribute, it shows the item is on sale or not; DISCOUNT means the discount the item has; TPRICE shows the total price after adding or minoring DISCOUNT, TAX, etc.; REWARD shows how many user can get after buying this item.

PAYMENT (PID, CARDNUM, EXPMON, EXPYEAR, CVN, CFNAME, CLNAME)

PID is the primary key, it shows different type of payment method CARDNUM is card number; EXPMON is the expected month; EMPYEAR is the expected year; CVN is the card's CVN; CFNAME is the first name on care; CLNAME is the last name on card.

BILLINGINFO (BID, ADDRESS, OPTLINE, CITY, STATE, ZIPCODE, COUNTRY, CONTACT)

BID is the primary key; it shows different type of billing method. ADDRESS is the billing address; OPTLINE is the optional second line of address; CITY is the billing city; STATE is the billing state; ZIPCODE is the address zip code; CONTRY is the billing country; CONTACT is the phone number/email, etc.

2. Convert not strong or subtype Entities

Employee($ID^{\dagger}$)

Each Employee has an employee ID. ID is a primary key and also a foreign key from HUMAN.

User($ID^{\dagger}$)

Each User has a User ID. ID is a primary key and also a foreign key from HUMAN.

3. Convert Relationship

For Employee(1,n) – Item(1,n) : STORE ($ID^{\dagger}$, $IID^{\dagger}$, QTY)

ID is the employee ID, it's a foreign key from Human(Employee). IID is the item ID, it's a foreign key from Item. Employee sell items for their store, QTY is the quantity for each Item.

For User(1,n) – Item(1,n) : CART ($ID^{\dagger}$, $IID^{\dagger}$, SELEQTY)

ID is the User ID, it's a foreign key from Human(User). IID is the item ID, it's a foreign key from Item. User select Item to their shopping cart, SELEQTY is the quantity for the selected Items.

For User(1,1) – Pay (1,n) : (PID, $ID^{\dagger}$) ---- > use big table method to merge two table : PAYMENT (PID, $ID^{\dagger}$, CARDNUM, EXPMON, EXPYEAR, CVN, CFNAME, CLNAME)

PID is the Payment ID, it's the primary key. ID is a foreign key from Human(User), it means the User ID.

For User(1,1) – Bill(1,n) :(BID, $ID^{\dagger}$) ---- > use big table method to merge two table : BILLINGINFO (BID, $ID^{\dagger}$, ADDRESS, OPTLINE, CITY, STATE, ZIPCODE, COUNTRY, CONTACT)

BID is the Billing ID, it's the primary key. ID is a foreign key from Human(User), it means the User ID.

For Employee(1,n) – Item(1,n) – User(1,n) : ORDERSTATUS ($ID^{\dagger}$, $IID^{\dagger}$, $ID^{\dagger}$, STATUS, NOTE)

The first ID is part of the primary key, it's also the foreign key from Human(User), it shows the User ID. IID is part of the primary key, it's also the foreign key from Item. The second ID is part of the primary key, it's also the foreign key from Human(Employee), it shows the Employee ID.