Class Exercise – 10.1

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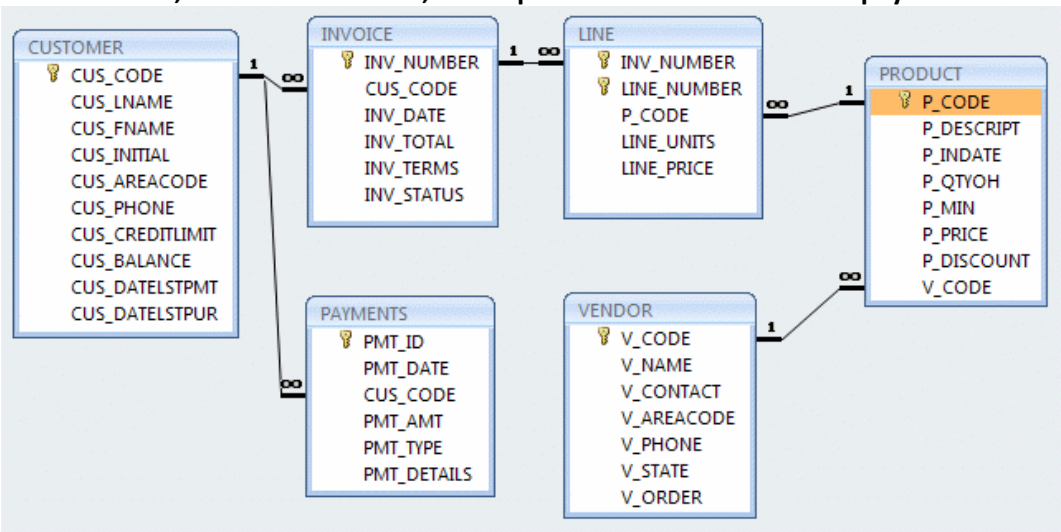
Transactions

ABC Markets sell products to customers. The relational diagram shown in Figure P10.6 represents the main entities for ABC's database. Note the following important characteristics:

- **A customer may make many purchases, each one represented by an invoice.**
  - **The CUS_BALANCE is updated with each credit purchase or payment and represents the amount the customer owes.**
  - **The CUS_BALANCE is increased (+) with every credit purchase and decreased (-) with every customer payment.**
  - **The date of last purchase is updated with each new purchase made by the customer.**
  - **The date of last payment is updated with each new payment made by the customer.**
- **An invoice represents a product purchase by a customer.**
  - **An INVOICE can have many invoice LINEs, one for each product purchased.**
  - **The INV_TOTAL represents the total cost of invoice including taxes.**
  - **The INV_TERMS can be "30," "60," or "90" (representing the number of days of credit) or "CASH," "CHECK," or "CC."**
  - **The invoice status can be "OPEN," "PAID," or "CANCEL."**
- **A product's quantity on hand (P_QTYOH) is updated (decreased) with each product sale.**
- **A customer may make many payments. The payment type (PMT_TYPE) can be one of the following:**
  - **"CASH" for cash payments.**
  - **"CHECK" for check payments**
  - **"CC" for credit card payments**
- **The payment details (PMT_DETAILS) are used to record data about check or credit card payments:**
  - **The bank, account number, and check number for check payments**
  - **The issuer, credit card number, and expiration date for credit card payments.**



Using this database, write the SQL code to represent each one of the following transactions. Use BEGIN TRANSACTION and COMMIT to group the SQL statements in logical transactions. [Note: Not all entities and attributes are represented in this example. Use only the attributes indicated.]

1. **On May 11, 2016, customer '10010' makes a credit purchase (30 days) of one unit of product '11QER/31' with a unit price of $110.00; the tax rate is 8 percent. The invoice number is 10983, and this invoice has only one product line.**

```
BEGIN TRANSACTION

INSERT INTO INVOICE
      VALUES(10983, '10010', '11-May-2018', 118.80,'30', 'OPEN');
INSERT INTO LINE
      VALUES(10983, 1, '11QER/31', 1, 110.00);
UPDATE PRODUCT
      SET P_OTYOH= P_QTYOH-1
      WHERE P_CODE = '11QER/31';
UPDATE CUSTOMER
      SET CUS_DATELSTPUR = '11-May-2018'
      CUS_BALANCE=CUS_BALANCE+118.80
      WHERE CUS_CODE = '10010';

COMMIT
```

2. **On June 3, 2016, customer '10010' makes a payment of $100 in cash. The payment ID is 3428.**

```
BEGIN TRANSACTION

INSERT INTO PAYMENTS

      VALUES(3428,'03-Jun-2016','10010',100.00,'CASH', 'None');

UPDATE CUSTOMER

      SET CUS_DATELSTPMT = '03-Jun-2016',

      CUS_BALANCE= CUS_BALANCE - 100.00

      WHERE CUS_CODE = '10010';

COMMIT
```