Assignment 2

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Q1: Given the schema

item(<u>itemid</u>, name, category, price)
itemsale(<u>transid</u>, itemid, quantity)
transaction(<u>transid</u>, custid, date)
customer(<u>custid</u>, name, street-addr, city)

1. Find the name and price of the most expensive item (if more than one item is the most expensive, print them all).

```
SELECT price, name
FROM item
WHERE price=(
  SELECT MAX(price)
  FROM item);
```

2. Print the total sales (in terms of units and total price) of every item category in every customer-city.

```
  SELECT i.name, cust.city, i.category,
  SUM(i.price * sale.quantity) AS totalprice
  FROM item i
    JOIN itemsale sale
    JOIN transaction trans
    JOIN customer cust
  GROUP BY i.category, cust.city
```

3. Find items with no sales at all to customers in Mumbai.

```
SELECT i.name
FROM item i JOIN itemsale sale JOIN transaction trans JOIN
    customer cust
WHERE cust.city='Mumbai'
  AND i.itemid NOT IN (
    SELECT itemid
    FROM itemsale);
  AND trans.transid=sale.transid
  AND trans.custid=cust.custid
```

4. Find customers who bought the same quantity of the same item on subsequent dates.

5. Find all the customers who did not buy any item in category "Electronics".

```
SELECT customer.name
FROM customer
WHERE (
  customer.custid NOT IN (
    SELECT customer.custid
    FROM customer
    INNER JOIN transaction ON (customer.custid=transaction.
    custid)
    INNER JOIN itemsale ON (transaction.transid=itemsale.transid
    )
    INNER JOIN item ON (itemsale.itemid=item.itemid)
    WHERE item.category!='Electronics'
    )
  );
```

Q2: Given the schema

member(<u>memb_no</u>, name, age)
book(<u>isbn</u>, title, authors, publisher)
borrowed(<u>memb_no</u>, <u>isbn</u>, date)

1. Print the names of members who have borrowed any book published by "McGraw-Hill".

```
SELECT name
FROM member memb JOIN borrowed borr JOIN book bk
WHERE memb.memb_no=borr.memb_no
  AND borr.isbn=bk.isbn
  AND bk.publisher='McGraw-Hill'
```

2. Print the names of members who have borrowed all books published by "McGraw-Hill".

```
SELECT member.name
FROM member
```

```
  INNER JOIN borrowed ON (member.memb_no=borrowed.memb_no)
  INNER JOIN book ON (borrowed.isbn=book.isbn)
WHERE book.publisher='McGraw-Hill'
GROUP BY member.name
HAVING (
  COUNT(book.isbn)=(
    SELECT COUNT(borrowed.isbn)
    FROM borrowed
      INNER JOIN member ON (borrowed.memb_no=member.memb_no)
    INNER JOIN book ON (book.isbn=borrowed.isbn)
  WHERE (book.publisher='McGraw-Hill')
  )
);
```

3. For each publisher, print the names of members who have borrowed more than five books of that publisher.

```
SELECT member.name, book.publisher
FROM member
  INNER JOIN borrowed ON (member.memb_no=borrowed.memb_no)
  INNER JOIN book ON (book.isbn=borrowed.isbn)
GROUP BY member.name, book.publisher
HAVING (COUNT(borrowed.memb_no)>5)
```

4. Print the total number of books borrowed per member. Take into account that if a member does not borrow any books, then that member does not appear in the borrowed relation at all.

```
SELECT member.name, COUNT(borrowed.isbn)
FROM member
  INNER JOIN borrowed ON (member.memb_no=borrowed.memb_no)
  INNER JOIN book ON (borrowed.isbn=book.isbn)
GROUP BY member.name
```