

INF 551 – Fall 2017 (Afternoon section)

Quiz 6: XML & ER (10 points), 15 minutes

1. [6 points] Consider an XML document containing a catalog of CD's as shown on the right. Write an XPath expression for each of the following questions.

- a. Find all CDs (elements) by "Bob Dylan".

`/CATALOG/CD[ARTIST="Bob Dylan"]`

- b. Find the titles of all CDs produced by "Columbia" and with price < 10, return values only.

`/CATALOG/CD[COMPANY="Columbia"][PRICE<10]/TITLE/text()`

- c. Find the artists of CDs produced after 1985 and rated 3 or above, return values only.

`/CATALOG/CD[YEAR>1985][@rating>=3]/ARTIST/text()`

```

▼ <CATALOG>
  ▼ <CD rating="3">
    <TITLE>Empire Burlesque</TITLE>
    <ARTIST>Bob Dylan</ARTIST>
    <COUNTRY>USA</COUNTRY>
    <COMPANY>Columbia</COMPANY>
    <PRICE>10.90</PRICE>
    <YEAR>1985</YEAR>
  </CD>
  ▼ <CD rating="2">
    <TITLE>Hide your heart</TITLE>
    <ARTIST>Bonnie Tyler</ARTIST>
    <COUNTRY>UK</COUNTRY>
    <COMPANY>CBS Records</COMPANY>
    <PRICE>9.90</PRICE>
    <YEAR>1988</YEAR>
  </CD>

```

2. [4 points] Draw an ER diagram to model the product-sale application with the following requirements.

- For each product, record its id, name, and manufacturer.
- For each person, record its SSN, name, and address.
- For each store, record its id, name, and city.
- If a product is a software product, record its operating system as well.
- For each purchase, record its date.
- Underline the key attributes.
- Indicate the multiplicity and type of relationship.
- All relationships in the ER diagram should be **binary**.

