Due Date: Tuesday May 13, 2014 11:00 PM
Points: 40 points max
Turn In: The script and spool files turned in via the assignment drop box

General Directions

Use the a_xml database.

These tasks focus on the use the of XML techniques in MySQL. Consequently, you **must use XML techniques indicated in the task description** to solve the problems. You need to meaningfully use XPath expressions and methods to solve the tasks. If the task description says to use a particular technique, you must use that technique to get credit for the task.

All of these queries will use the ExtractValue function.

You may need to use additional techniques to complete a task but you may not simply shred the XML string into values and then do all of the work using the traditional SQL techniques.

The string used to store the xml data will follow the following rules. When I say an element has a value that means there is at least one character in the value. See the script for sample rows.

- The root element for each string will be <client>
- The <client> element will have an attribute for the cl_id that has a value. The client id values will be unique.
- Each <client> element has a subelement for the client name that has a value.
- Each <client> element has a subelement <pets>. It is possible that the <pets> element has no subelements.
- The <pets> element may have multiple <animal> subelements.
- The <animal> element has
  one <an_id> subelement,
  one <an_type> subelement,
  one or more <an_name> subelements, and
  one <an_price> subelement.
  The an_id, an_type and an_price subelements always contain a value; the an_name element might be empty.

Preliminary Tasks

Create and populate a table named **a_testbed.xml_animals** using the sql provided.

Tasks

Task 01: Display the client name and the client id for clients who own a cat. Use the regular sql Like operator for this.

```
Sample display
+--------+----------+
| Client | ClientID |
+--------+----------+
| Anders | 1234     |
| Leeson | 5678     |
```

Task 02: Display the client name and the client id for clients who own a cat. Use the XPath Count function to determine which clients have a cat.

Task 03: Display the client name and the client id for clients and the number of animals they have. Display the clients with the most animals first.

```
+---------+----------+-----------------+
| Client  | ClientID | NumberOfAnimals |
+---------+----------+-----------------+
| Albert  | 1111     | 6               |
| Boyd    | 1345     | 6               |
| Caley   | 4567     | 4               |
| Winters | 4876     | 0               |
```

Task 04: Display the client name and the client id and the type and name(s) of the client's first animal. The animal type and name is concatenated as shown.

```
Sample display
+---------+----------+-----------------------------------+
| Client  | ClientID | Animal_First                      |
+---------+----------+-----------------------------------+
| Johnson | 3344     | turtle named Fluffy               |
| Oliver  | 4433     | bobcat named Whiskers Stalker     |
```

If the client has a first animal and the animal has no name, then you can chose one of the following two displays

```
| Wilson  | 8745     | turtle named                      |
```

or

```
| Wilson  | 8745     | turtle named (No name provided)   |
```

Task 05: Display the client name and the client id and the type and name of the client's first animal. If the animal has more than one name, display the animal's **last name** (the last name in the sequence). If the animal has only one name, then display that name. If the animal has no name or a blank name, then display the animal type and the message 'with no name'.

```
+---------+----------+-------------------------+
| Client  | ClientID | Animal_First            |
+---------+----------+-------------------------+
| Johnson | 3344     | turtle named Fluffy     |
| Oliver  | 4433     | bobcat named Stalker    |
| Madison | 4444     | bird with no name       |
| Elise   | 1011     | elephant named Yeller   |
| Leeson  | 676      | spider monkey named Mink |
```

Task 06: Display the client name and the client id for clients who own at least two animals but no more than three animals. Do not use a count function for this.

Task 07: Display the client name and the client id for clients who own a bird that costs 250.

Task 08: Display the client name and the client id for clients who own a bird that costs 250 and the client also owns more than one cat.