Prep 10

In lecture this week, we introduced XPath, a language for extracting information from XML files. This prep will make sure you can write and run simple XPath queries.

Trying out XPath

Before you begin this task, you may find it helpful to review our slides, our XPath by example demo, and our XPath summary (all posted on the main page of our website). Jennifer Widom's youtube videos on XPath are another helpful resource. I have posted links on Piazza, where this prep is announced.

Download party.xml, a simple XML file containing some information about a guest list for a party. Open it up and review its contents; it contains information about the event (e.g., its start time is 2:00pm) and its guests (e.g., "Otis" is 2 years old).

Then, create four new files called `q1.xp`, `q2.xp`, `q3.xp`, and `q4.xp`. In them, write XPath expressions for each of these questions.

1. Find all `Invitee` elements in the party. [Traversing the tree structure]
2. Find all first and last names of invitees to the party. [Using `|`]
3. Find the email addresses of all invitees to the party. [Displaying attributes] **Note**: You do *not* need to wrap the attribute in a call to `data` like in the video.
4. Find the first name of every invitee who responded "yes". [Conditions on attributes]

Make sure each query file is in the same directory as `party.xml`. You can run each of your files on CDF using the following command:

```
> galax-run q1.xp
```

Once you are convinced that your queries are correct, create a demonstration of this to hand in: run each query in sequence one more time and cut and paste your interaction with `galax-run` into a file called `prep10_demo.txt`. Submit your four query files and file `prep10_demo.txt` on MarkUs.

Functional Dependencies

Suppose we have a relation on attributes P, Q, R, S, and T.

1. Create an instance of this relation with two tuples that violates $R \rightarrow T$.
2. Create an instance of this relation with two tuples that violates $Q \rightarrow RP$.
3. Create an instance of this relation with two tuples that violates $SR \rightarrow P$.
4. Create an instance of this relation with four tuples, all of which have the value 1 for Q. This instance must satisfy all three of the FDs listed above.

Draw your instances using Word, LaTeX or another appropriate tool, and submit a pdf file called prep10.pdf on MarkUs.