In-class Exercises: XPath and XQuery

Given the example XML file quiz.xml, find the following:

1. Get the solution to every question (regardless of the question type).

   **Solution:**
   ```xquery
   fn:doc("quiz.xml")/quiz/questions/*/@solution
   or
   fn:doc("quiz.xml")/quiz/questions//@solution
   ```

2. Get the elements of the true-false questions only.

   **Solution:**
   ```xquery
   fn:doc("quiz.xml")/quiz/questions/tf-question
   ```

3. Get the text of the multiple-choice (mc) question which has the QID ‘Q888’.

   **Solution:**
   ```xquery
   fn:doc("quiz.xml")/quiz/questions/mc-question[@qid="Q888"]
   --see what happens when you remove @
   --This returns the entire mc-question element. Now get the text of the question:
   doc("quiz.xml")/quiz/questions/mc-question[@qid="Q888"]/question/text()
   ```

4. For the student with the ID s555555555, list the second response answer recorded for them.

   **Solution:**
   ```xquery
   fn:doc("quiz.xml")/quiz/class-responses/student[@sid="s555555555"]/response[2]/@answer
   ```

5. Now return that answer to question 4, enclosed by a `<secondAns>` tag.

   **Solution:**
   ```xquery
   <secondAns>
   fn:doc("quiz.xml")/quiz/class-responses/student[@sid="s555555555"]/response[2]/@answer
   </secondAns>
   ```

6. Write an XQuery FLWOR expression that returns the text for each multiple-choice question in quiz.xml, along with the number of options available for that question. Hint: you can use `count(option)`.

   **Solution:**
   ```xquery
   for $q in doc('quiz.xml')/quiz/questions/mc-question
   return ($q/question/text(), $q/count(option))
   ```

   And as we noticed when running the demo in class, using `count()` this way also works:
   ```xquery
   return ($q/question/text(), count($q/option))
   ```