[90 min] DO: Assignment 8 / Build XML Structure A↴

Due Apr 11 by 11:59pm   **Points** 100   **Submitting** a file upload
File Types xml and rmd   **Available** until Apr 12 at 4:59pm

This assignment was locked Apr 12 at 4:59pm.

Format

Individual.

Instructions

Question 1 (80 Points)

Create a sample XML document that implements the conceptual data model expressed in UML and shown below. Invent 5-10 instances that allow you to demonstrate the structure. Create an appropriate internal DTD. This is a specific set of instances -- you can come up them as you see fit. Be sure to view the XML to ensure it validates. Use `<txns>` as the name of the "root" element of the XML document.

Example Instances

Your XML file must contain instances; you can "make them up". Here are some examples; you need to add more:

- Customer: {(100,"Smith, J.",123998),(200,"Lancet, M.",453998)}
- Security: {("MSFT",235.75),(GOOG,2061.92),(FB,268.40)}
- Trade: {(1,"03/15/21",100,233.50,MSFT,100)}

Question 2 (20 Points)

Read the XML into R (with validation) and then use XPath to find the total number of trades for some Security (pick on of your example). Print the result to show that your XML was correctly encoded, validates, and can be processed. **Hint**: you cannot use `xmlToDataFrame()` to read the XML back into a single data frame.

Submission

Submit two files in total: an R Notebook for Question 2 and the XML document from Question 1 that contains sample instances as well as an embedded DTD.

UML Diagram

The UML Diagram above was rendered using **yuml.me** ⤤ **(https://yuml.me/)**, an online script-based visualization tool. This is the script:

```
[Security]1-0..*[Trade]
[Security|cusip : text; market : real]
[Trade|tid : int; tdate : date; tqty : int; tprice : real]
[Customer|cid : int; cname : text; pvalue : real]
[Trade]0..*-1[Customer]
```

CS5200.A8.Rubric

Criteria	Ratings						Pts
XML represents the UML model	**40 pts** **Only very minor issues**	**35 pts** **A few issues, most are minor**	**30 pts** **A few issues**	**20 pts** **Significant issues, but acceptable**	**10 pts** **Many mistakes**	**0 pts** **No Marks**	40 pts
DTD	**30 pts** **No issues**	**25 pts** **Very minor issues**	**20 pts** **Some issues**	**10 pts** **Significant issues**		**0 pts** **No Marks**	30 pts
XML validates	**10 pts** **Passes validation**				**0 pts** **No Marks**		10 pts
Sample content	**20 pts** **Sample content demonstrates XML & DTD**		**10 pts** **Demonstrates most aspects of the XML but has some issues**			**0 pts** **No Marks**	20 pts
						Total Points: 100	