Programming on Cloud (Fall 2017) - Assignment 1 Due October 26th 2017 23:55

Individual Assignment

Problem Statement

In this assignment, write a client/server program to develop a "price quote" scenario. The scenario is a client sends a 'Request For Quote(RFQ)', and the server replies an 'Response for Price(RFP)' for each conversation.

The client's RFQ includes:

1. RFQ ID
2. Account ID
3. Product Number
4. Product Category
5. Quantity

The server's reply includes:

1. The unit price
2. Price validation period

You are responsible for the design of the data model, and implementation of the data communication. You do not have to develop a full-fledged database system. Data can be stored in files or other types of storage.

Technical Requirement

1. Data Communication

The data should be communicated between the client and server through data serialization/deserialization in **two methods**, namely text based (de)-serialization and binary (de)-serialization. For example,

(1) XML or JSON can be used for text based (de)-serialization. (2) Protocol Buf or Thrift can be used for binary (de)-serialization.

For each method, your program should be able to retrieve the price for each RFQ.

2. Programming Language

You can program this application in any language.

3. Application

Your client/server can be a standalone program or you build on any software framework that supports client/server. You can choose the protocol your prefer TCP, or HTTP.

Bonus point (2 points towards the final grade).

Running your server program on a cloud instance (e.g. AWS instance) or with in a cloud platform (e.g. Google App Engine).

Submission

The deliverables include the following artifacts and they should be submit to moodle site

. 1) Pack all your source code and executable application in a single zip file. .gz .tar or .zip are acceptable. Please do NOT use .rar file. The file should have this naming convention **[STUDENT ID]_A1_source.zip.** Also, place a scanned copy (pdf) of the **signed originality form** in the zip file: www.concordia.ca/content/dam/encs/docs/Expectations-of-Originality-Feb14- 2012.pdf

. 2) The complete data model files for each method (XML, JSON, Proto and etc). Please follow the naming convention **[STUDENT ID]_A1_data.zip.**

. 3) A report in PDF with the naming convention **[STUDENT ID]_A1_report.pdf** that includes the following sections. The report should follow the format of IEEE publication. https://www.ieee.org/conferences_events/conferences/publishing/templates.html You can either use Word or Latex template. Make

your report within 4 pages for the section i to v. section vi can take as many pages as you wish.

i. how to run your application

ii. design of the data model

iii. methods used to data serialization/de-serialization

iv. how ii) and iii) are applied in the data communication of your application

v. discuss the libraries or software packages you choose to deal with data serializations (e.g. pros or cons given your experience)

vi. Screenshots of running your application.

Marking Criteria

. 1) Executable application that fulfills the function of the animal game. [30 Marks]

. 2) Quality of the design of data models [10 Marks (5 for each method)]

. 3) Quality of the report –The required items are addressed in clear description with detailed information provided. [10 Marks]