Assignment 1

CSCI 5410 (Serverless Data Processing)
Date Given: Sep 17, 2021
Due Date: Sep 27, 2021 at 11:59 pm
Late Submissions are not accepted.
A deduction of 10% per day will be applied for late submission.

To avoid any additional charges for resource consumption - Delete the AWS S3 storage, and AWS DynamoDb after fulfilling the assignment submission requirements.

Objective:
This assignment covers some basic concepts of cloud computing and services. The primary objective of this assignment is to introduce you to the cloud computing platform and perform a cloud computing literature review.

Plagiarism Policy:

- This assignment is an individual task. Collaboration of any type amounts to a violation of the academic integrity policy and will be reported to the AIO.
- Content cannot be copied verbatim from any source(s). Please understand the concept and write in your own words. In addition, cite the actual source. Failing to do so will be considered as plagiarism and/or cheating.
- The Dalhousie Academic Integrity policy applies to all material submitted as part of this course. Please understand the policy, which is available at: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Assignment Rubric - based on the discussion board rubric (McKinney, 2018)

	Excellent (25%)	Proficient (15%)	Marginal (5%)	Unacceptable (0%)	Problem # where applied
Completeness including Citation	All required tasks are completed	Submission highlights tasks completion. However, missed some tasks in between, which created a disconnection	Some tasks are completed, which are disjoint in nature.	Incorrect and irrelevant	**Part A**
Correctness	All parts of the given tasks are correct	Most of the given tasks are correct However, some portions need minor modifications.	Most of the given tasks are incorrect. The submission requires major modifications.	Incorrect and unacceptable	**Part B**
Novelty	The submission contains novel contribution in key segments, which is a clear indication	The submission lacks novel contributions. There are some evidence of novelty, however, it is not significant	The submission does not contain novel contributions. However, there is	There is no novelty	**Part C**

	of application knowledge.		an evidence of some effort.		
Clarity	The written or graphical materials, and developed applications provide a clear picture of the concept and highlights the clarity.	The written or graphical materials, and developed applications do not show clear picture of the concept. There is room for improvement	The written or graphical materials, and developed applications fail to prove the clarity. Background knowledge is needed.	Failed to prove the clarity. Need proper background knowledge to perform the tasks.	**Part A**

Citation:
McKinney, B. (2018). The impact of program-wide discussion board grading rubrics on students' and faculty satisfaction. Online Learning, 22(2), 289-299.

Tasks:

This assignment has three parts. Part A has a small reading task, and part B, part C have small programming tasks:

Part A. Read the following paper and write a summary (visit IEEE from libraries.dal.ca)

> T. Salah, M. J. Zemerly, C. Y. Yeun, M. Al-Qutayri and Y. Al-Hammadi, "Performance comparison between container-based and VM-based services," 2017 20th Conference on Innovations in Clouds, Internet and Networks (ICIN), 2017, pp. 185-190, doi: 10.1109/ICIN.2017.7899408.

- It can be approximately 1 page summary and must be written in your own words. The summary should include - (a) what the authors have presented in the paper, (b) if any specific issue is addressed, (c) if any experiments or studies performed, (d) analysis or findings made by the authors.

Part A - Submission requirement: A pdf file with the summary

Part B. AWS S3 Storage experiment:

Using AWS Educate account, perform the following:
take screenshots at every step:

a. Create a text file (empty file) in your computer and rename it with your "First Name", E.g., "Alice.txt".
b. Explore AWS SDK for Java - and write a Java program using the SDK specification for creating a S3 bucket.
c. Using another Java program or method, upload the file from your computer to the S3 bucket you created.
d. Create a flowchart using draw.io/ word or any similar tool to show the steps that you have performed in this experiment.

Part B - Submission requirement: A pdf file with the (i) flowchart, (ii) a paragraph on your overall observation of the Java SDK, (iii) screenshots of the S3 buckets and operations (capture all steps) (iv) copy-paste the program script in the pdf. (In addition, submit the source in gitlab)

Part C. AWS DynamoDb service experiment:

Using AWS Educate account, perform the following:

take screenshots at every step.

a. Using AWS DynamoDb service - Create one collection of "Super_Volcanos"
   Visit this site:
   https://www.arcgis.com/apps/MapJournal/index.html?appid=a546b46a7fb942008455e072c69ea767
b. Collection should contain name, place, properties, and/or size of the volcano.
c. Write a Java program to update and add a new item in the Collection, which is "**last_eruption_period**" for all the Super volcanoes (if no date or time period found, you can keep the field empty for that specific volcano)

Part C - Submission requirement: A pdf file with the (i) screenshots of the DynamoDb, (ii) also copy-paste program code in the pdf. (**In addition, submit the source in gitlab**), (iii) output – displays empty DynamoDb, data inserted DynamoDb, updated DynamoDb.