Assignment 5

CSCI 5410 (Serverless Data Processing)
Date Given: Nov 18, 2021
Due Date: Dec 2, 2021, at 11:59 pm

To avoid any additional charges for resource consumption - Delete any AWS service, storage, database after fulfilling the assignment submission requirements

Objective:
This assignment will help you learn some key services of AWS platform. In this assignment, you are required to work on AWS Lambda/SQS/SNS

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 of application knowledge.	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 an evidence of some effort.	There is no novelty	Part A
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 B

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 2 parts. Part A is related to background study and report writing. Part B is related to coding, development, and testing

Part A. Explore & Build a Use Case:

Read an overview of AWS Kinesis, and check how it works. Now, build a use case based on a hypothetical scenario, where you can use AWS Kinesis, and any other required AWS service(s). The use case should be unique (not copied from online sources/ friends/ colleagues), and it should reflect your understanding of AWS or any other cloud services.

You need to write about your hypothetical scenario and the use case in two paragraphs (less than 1 page). In addition, you need to provide a block diagram or activity diagram or workflow of the use case. Two things are very important in this assignment (1) Novelty and (2) Use of the appropriate service

Part A - Submission requirement:

A pdf file with the use case, graphical representation, and citation (if any).

Part B. Use AWS Lambda-SQS-SNS:

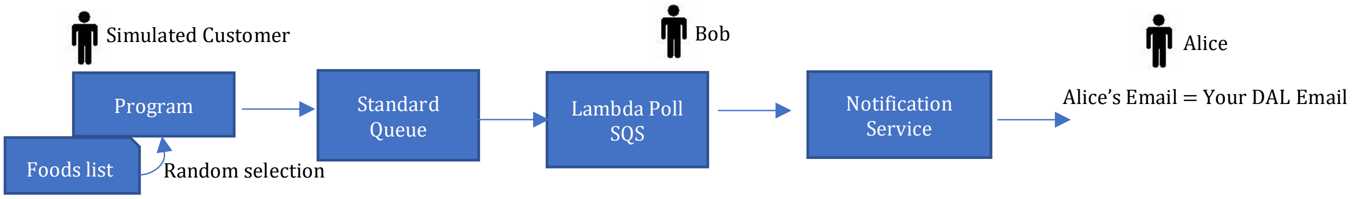
take screenshots at every step and submit as part of the PDF:

a. Alice and Bob work at HalifaxDine, which is an online food delivery service. They receive orders online. Alice delivers the food, and Bob prepares it.

b. The customers' orders are added to a Queue (standard SQS) –
   - Assume a program is sending random food order messages to HalifaxDine
   - This message simulates how a customer places an order to an online store. (You can ignore, price/tax etc)
   - The program should randomly pick food quantity and food item names from a list, create a message body, and send to HalifaxDine

c. Bob periodically (every 5 minutes) checks, if there is any order in the Queue.

d. If message is available, it is assumed Bob has prepared the food, and then a notification service (SNS) is triggered which sends the details to Alice's email (Your email in this case)



Part C - Submission requirement:

Submit screenshots of every steps. Please do not exclude any steps. Include all screenshots as part of a PDF file. In addition, provide the program/scripts in gitlab.