North South University
Department of Electrical and Computer Engineering
CSE327 - Software Engineering
Assessment, Spring 2021
Total Marks - 20, Due - 11:59pm, 11th Of May, 2021 (Google Classroom)

There are two questions in this assessment. They are both based on the following case study.

Case Study

You are required to design and implement a software service and a corresponding mobile app that can be used to manage a user's personal shopping. Users typically sign up for the service using their email address and can then download the app on their mobile phone.

The backend service monitors the prices of goods from multiple online sources. A user can choose to see information from all the sources, or select a subset. Whenever the service adds new sources, users should get a notification about it in their application, and they (the users) have the option to see information from the new sources. Information is not just about price, it can also be about whether a particular source has a particular good in their inventory. This latter one is true particularly for sources who do not publish their price, but instead pursue a strategy where users can negotiate a price.

A user can choose to monitor the price of particular goods. This can be done in one of three ways: the first one being a basic notification about the price of the goods in the different sources (for sources that publish price), the second one being a notification about the availability of a good in different sources (for all types of sources) and the third one allows the user to set a threshold price and the user is notified if the price of a good in a particular source falls below that price. This last one is also applicable for sources that publish their price.

Task 1 (10 marks):

Consider the problem(s) mentioned in the second paragraph (lines 5 - 11). What design pattern(s) will you use to design the solution to this part of the system?

Task 2 (10 marks):

Using the pattern(s) mentioned in your answer to Task 1, draw a UML class diagram depicting the design of your solution to the problem(s) mentioned in the second paragraph.