

Lab#2 – Delegate

Due Date: Midnight of Friday week#4

Purpose: The purpose of this assignment is to help you:

- Understand delegation

Instructions: Be sure to read the following general instructions carefully:

This lab should be completed individually by all the students. Please submit your solution **through the dropbox**, and name your submission according to the following pattern: **studentID(yourlastname)_Labnumber.zip**. e.g., 300123456(smith)_Lab#2.zip

Rubric

<u>Functionality</u>	<u>Marks</u>
GUI	3
When Subscribe button is clicked, an object of SendViaEmail or/and an object of SendViaMobile is/are instantiated , and should be added to corresponding collection(s) if the email or/and mobile has/have not been subscribed before; finish the subscription	2*2
When UnSubscribe button is clicked, removed the corresponding object of SendViaEmail or/and an object of SendViaMobile from corresponding collection(s) if the email or/and mobile has/have subscribed before; finish un-subscription	2*2
Validate email	0.5
Validate mobile	0.5
Publish notification	1
Use two collections to hold SendViaEmail objects and SendViaMobile objects respectively	0.5*2
Overall (code readability, app usability, etc.)	1

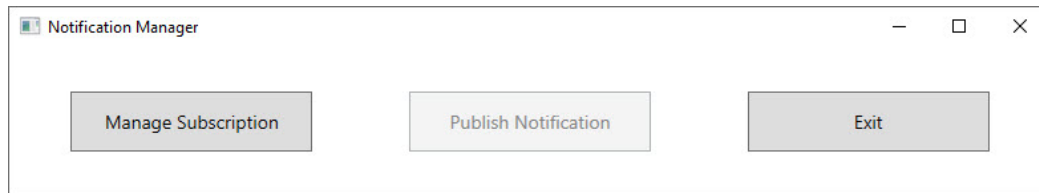
Question[15 marks]

In the real world, the notification management system consists of two parts, one is to allow clients to subscribe/unsubscribe the notification, and the other is to facilitate administrator(s) to publish the notification. This assignment simplifies the problem, and merges two parts as one. In this assignment, you are asked to implement a .NET **WinForm application** to mimic notification management system.

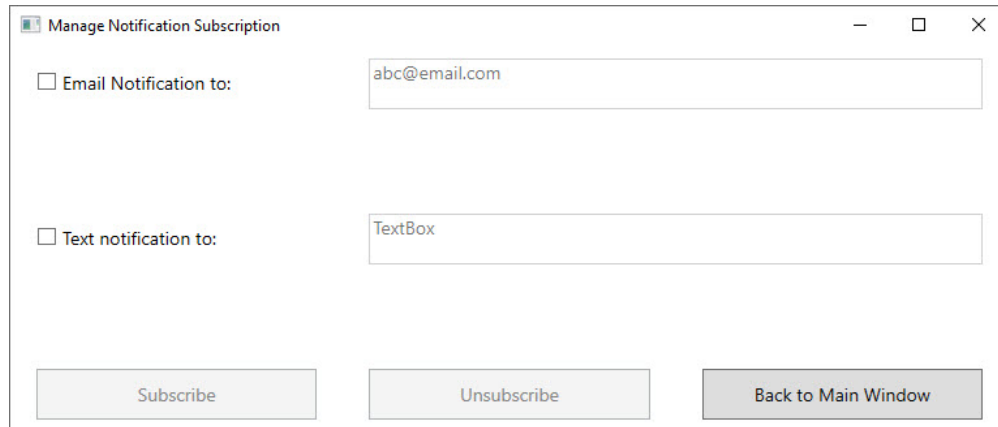
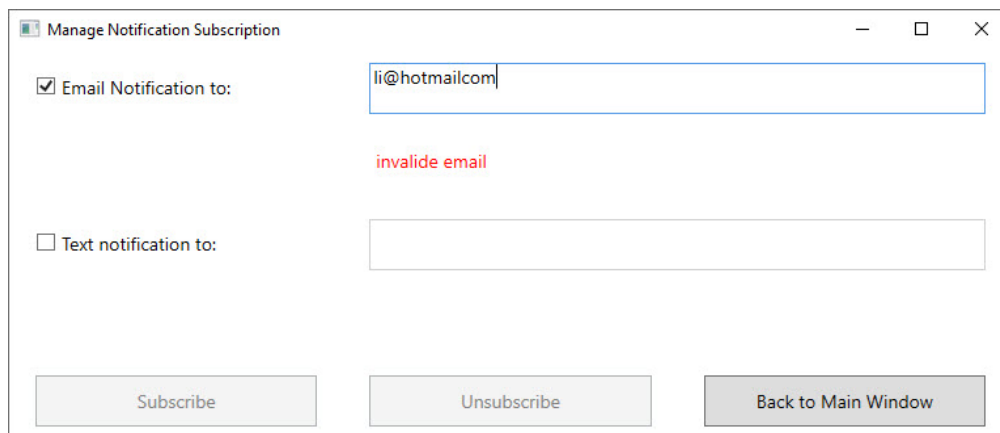
You are required to use delegate.

Your app facilitates clients to subscribe/unsubscribe notification as well as send notification to all subscribers. Your App needs to make sure that the provided email address is valid and provided cell phone number is following the specified format.

After the app has been launched, following GUI (or similar one) should be presented. As there is no subscriber when the app just launches, “Publish Notification” button is disabled.



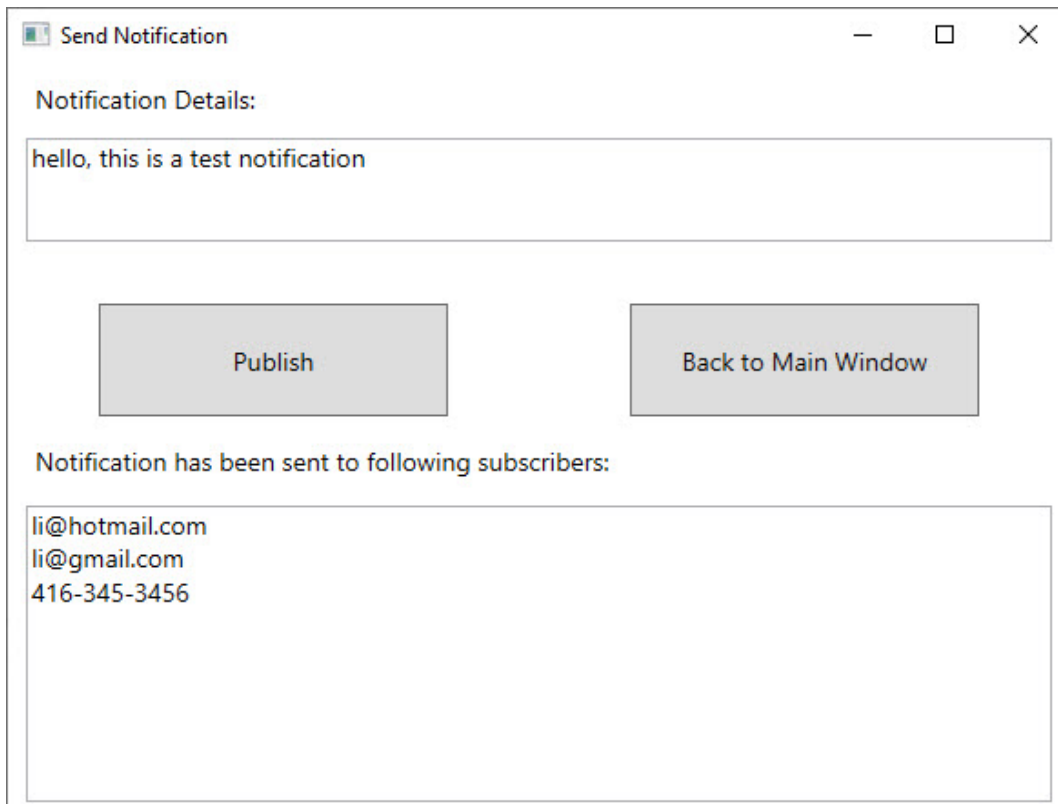
After **Manage Subscription** button clicked, following GUI (or similar one) should be popped up to allow clients to subscribe or unsubscribe notification. If an invalid email address has been provided, error message should be provided.

A screenshot of a window titled "Manage Notification Subscription". It has two checkboxes: "Email Notification to:" and "Text notification to:". The "Email Notification to:" checkbox is checked, and its corresponding text box contains "abc@email.com". The "Text notification to:" checkbox is unchecked, and its corresponding text box contains "TextBox". At the bottom, there are three buttons: "Subscribe", "Unsubscribe", and "Back to Main Window".A screenshot of a window titled "Manage Notification Subscription". It has two checkboxes: "Email Notification to:" and "Text notification to:". The "Email Notification to:" checkbox is checked, and its corresponding text box contains "li@hotmailcom". Below the text box, the text "invalid email" is displayed in red. The "Text notification to:" checkbox is unchecked, and its corresponding text box is empty. At the bottom, there are three buttons: "Subscribe", "Unsubscribe", and "Back to Main Window".



A screenshot of a window titled "Manage Notification Subscription". It contains two checkboxes: "Email Notification to:" which is checked and has a text input field with "li@hotmail.com"; and "Text notification to:" which is unchecked and has an empty text input field. At the bottom, there are three buttons: "Subscribe", "Unsubscribe", and "Back to Main Window".

After **Publish Notification** button clicked, following GUI is presented to facilitate notification publish.



A screenshot of a window titled "Send Notification". It has a section "Notification Details:" with a text input field containing "hello, this is a test notification". Below this are two buttons: "Publish" and "Back to Main Window". At the bottom, it says "Notification has been sent to following subscribers:" followed by a text area listing "li@hotmail.com", "li@gmail.com", and "416-345-3456".

Please make sure:

1. No duplication subscription is allowed; in other words, if user tries to subscribe using the same email to subscribe again, your app should prompt warning message.
2. Your app should be able to deal with many subscribers. [hint: use collections to hold the subscribers' information]