

Object-oriented Analysis and Design

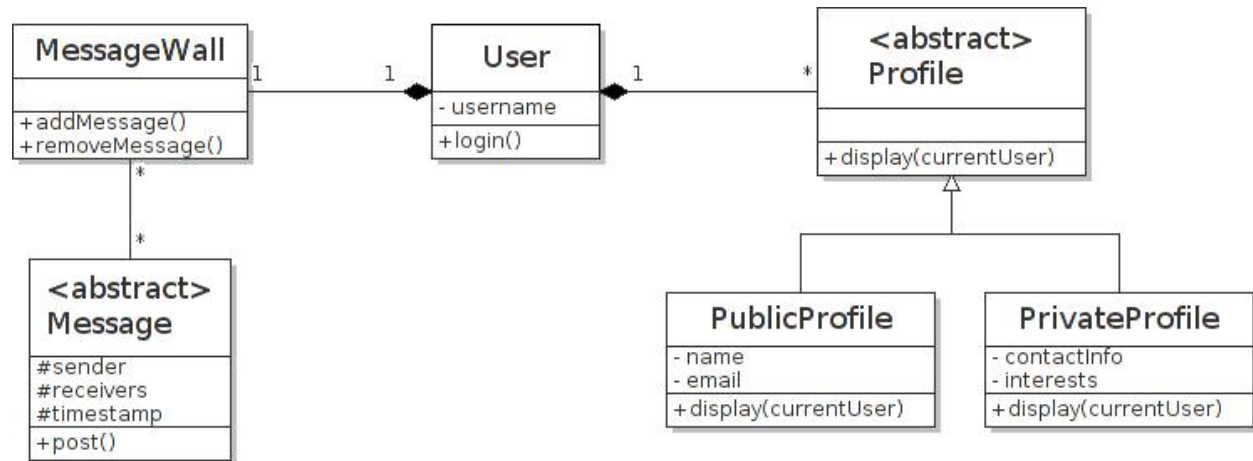
Sessional 1, Spring 2014

Date: February 27, 2014

Marks: 60

Time: 90 mins.

Note: Please read the case and answer the questions



Consider the UML class diagram above illustrating a partial design of a social networking website such as Facebook. Each user has a public profile (visible to everybody) and a private profile (visible to user and her friends only). Moreover, each user has a message wall to which messages can be added.

Question 1

20 points

We need to support addition and removal of friends. A user's friend is another user. User can add a friend and remove a friend. When a user adds a friend, then both records are updated. For instance: a user Ali adds a friend Ahmed, then Ali has a friend Ahmed and Ahmed has a friend Ali. The same applies to removal functionality.

- (a) Show the changes required in UML diagram to support the functionality
- (b) Write C++ code to implement functionality

Question 2

20 points

Write a polymorphic program to display user profiles and show corresponding C++ implementations of Profile class and its subtypes. Please note that private profile is visible to friends only. Parameter `currentUser` refers to the user who is currently logged in and trying to view the profile of another user.

Question 3

20 points

Two types of messages can be posted on user's message wall: Text message having a simple description and Event info having event time, venue and details.

- (a) Show changes to UML diagram required to support these message types
- (b) Show C++ implementation of `addMessage()` method in `MessageWall` to support multiple message types