CS 451/551 - User Interface Design

Fall 2021

Assignment 2-a

To be submitted on or before Oct 13, 2020 (Wednesday)

COVID Testing

UWL has a COVID Testing center established for UWL community (faculty members, staff, students, custodians, ...). Any UWL community member who wants to do COVID testing must first register with the center. Registration details include the following:

- Firstname
- Lastname
- UWL email address (should be validated against the UWL directory; create your own internal directory with some data)
- Phone number (must be 10 digits)
- Has COVID symptoms (boolean)

Upon successful registration, the person will get a unique registration number (must be internally generated). Using this number, the person can set up an appointment with the testing center. Appointments are available Monday through Friday from 10:00 A.M. to 2:00 P.M. in 30 minutes interval (10:00, 10:30, 11:00, ...). Due to shortage of staff members at the testing center, only four persons are allowed at each appointment time.

When a person shows up at the center, the staff member verifies that the person has the appointment at that time and then allows the person to do the testing. The test result will be given right after the test (though it takes around 15 to 30 minutes to get the result, for the purpose of this assignment, we could ignore that time). You can randomly generate the test result inside your code. Depending on the test result, the person should be given another appointment; see the table below for this detail. There

Had no symptoms and test result is Negative	no need for another appointment
Had no symptoms and test result is Positive	should get an appointment a week later
Had symptoms and test result is Negative	no need for another appointment
Had symptoms and test result is Positive	should get an appointment within a week

is no need to register again if a person who is tested Positive, is returning for an appointment based on previous test result. Notice that a person who is tested Negative can come back at any time, but he/she is required to register again; the previous registration will become invalid automatically when the person is tested Negative.

Submission

- Draw the use case diagram for the above problem. You are strongly encouraged to use a UML tool instead of a drawing tool.
- Write the use case narratives for the use case model you developed. Follow the same structure shown in your class notes.
- Draw sketch of the Graphical User Interface (GUI) derived from the use case model.
  Think of the GUI design principles and appropriateness of the GUI controls while drawing the sketch.

Submit only one file that includes all the diagrams and the use case narratives.
This file should be in WORD or PDF format only.

Programming requirements

These programming requirements are necessary for the second part of this assignment, but they may be helpful for you to draw the use case model and the UI sketch.

- Create your own UWL internal directory. Make it realistic; i.e., have at least 100 entries.
- Check for the format of email address; e.g., XXXXX@uwlax.edu
- Validate phone number - must have exactly10 digits and first digit cannot be a zero.
- Provide a calendar for appointment selection, rather than asking the user to input the date.
- Ensure that the registration number generated by the system is unique.
- Staff member at the testing center should be able to search and retrieve the person's registration and appointment details using the registration number.