United International University (UIU)
Dept. of Computer Science & Engineering (CSE)
Final Exam   Trimester: Summer 2021   Marks: 25   Time: 1 Hour 15 mins
(+15 minutes for script uploading)
Code: CSI 311   Course Title: System Analysis & Design

Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules."

<u>Answer ALL of the following questions:</u>

QUESTION 1   [CO3]   20

Assume that you have to design a COVID-19 response website. In this website, users can view information about the status of various hospitals and avail services. To interact through the website, anyone needs to register/ login first. They will be able to search for hospitals and view the number of vacant general beds and ICUs for each hospital. Hospital admins update the information regarding their hospitals for the users' access. Hospital admins also need to create accounts in the system. Users can select whether they want to book a general bed or an ICU for a patient. Once this happens, they will receive a request form, from the hospital, to fill up and submit the information about the patient. Afterwards, the hospital admins will check the form and send a confirmation or rejection of admission depending on the severity of the patient's condition and the availability of beds. If the admission is confirmed, the user has to make a payment which can be done either online or via cash. Otherwise, the user is notified about the denial of service and is given suggestions regarding some other hospital nearby. The user can later rate and comment on a hospital regarding their service through the website.

  a) Draw USE CASE diagram with necessary include and extend relationship for the above scenario.   [5]
  b) Draw the CLASS diagram for the above scenario (show only association and inheritance relationship). Mention the reason for selecting the classes in your diagram.   [5]
  c) Draw the Sequence Diagram for the above scenario.   [5]
  d) Draw the State Diagram for the above scenario.   [5]

QUESTION 2   CO2   5

a) Define: Functional Requirements and Non-functional requirements for any software system. Write down the non-functional requirements for the website/web-application described above.   [2+3]