BRAC UNIVERSITY

Department of Computer Science and Engineering

Semester: Fall 2022

Course: CSE 471 System Analysis and Design

Quiz 4

Section: 08

Total Marks: 15   **Time: 25 Minutes**
Name: **ID:**

1. In order to get feedback from the patients, the hospital named after Pearl City has taken a plan to develop an application software. They have planned to offer two basic options in the software whenever a patient will enter the application, where one is for rating the overall service of the hospital and another one is for reviewing the ratings. If a patient wants to rate the hospital management system and overall quality he or she needs to fill up a form and after submitting the information required for the form through the help of a button, a patient can compare or relate his or her ratings with others by clicking the another option for reviewing others' ratings. So, as mentioned earlier the patient can compare the overall performance of the hospital with respect to other hospitals or he/she can relate the different components of the hospital that is working individually with a proper manner or not by searching specific keywords and selecting the performance type of overall performance with respect to other hospitals or internal performance rated by the other patients.
Now, **construct** a WND diagram to support the above scenario.

2. "HomeStar" is a home automation system to manage, operate and maintain household devices. Upon receiving the command "Prepare workspace", Prepare HomeStar module is initiated. First, Generate parameters module is given a day/night status and it returns the parameter details for the status as well as an optimization control flag for system optimization to be carried out later. Prepare HomeStar sends the parameter details to Prepare batch module and receives a list of activated devices in return. In order to prepare all connected target devices, Prepare batch module fetches a list of target devices from Get devices module by providing the parameters. For each device, Prepare batch module first calls upon Get current status library module by providing the device id and in return receives whether the device is currently activated or not. If the device is not active, Activate device module is triggered using device id and parameter mapping. Otherwise Update device state module is triggered with similar information and the target device is updated with given parameters. After each device is activated/updated, Generate activation entry module creates formatted specification and returns an entry to Prepare

batch. After all target devices are activated/updated, Prepare batch module sends the activated device list to Prepare HomeStar. Finally Prepare HomeStar initiates the Optimize system module which is an off-page connector and Initiate emergency alert module which is an on-page connector.
Draw a structure chart based on the above information. (8)

3. Your company has been contracted to design and store data of a newly established University in your area. They have identified the id (8), name (65), mobile (11), guardian's email (24) and address (49) as the fields of records. Considering an overhead of 20% on data volume with initial 800 records and a growth rate of 983 records per 6 months, **calculate** the expected volume of the database table in 4 years. **(3)**