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BSIT 4A

IT 411 – Systems Integration and Architecture

Activity 4

Instructions: List all the possible Functional and Nonfunctional Requirements for at least two of the three software applications. There must be at least 10 statements for each software application.

- A **non-functional requirement** is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors.
- A **functional requirement** defines a function of a system and its components. A function is described as a set of inputs, the behavior, and outputs
- Identify also on which category the system requirements falls (Input, Output, Process, Performance, Controls)

SOFTWARE APPLICATION 1

A Personal Insulin Pump Embedded System

Functional Requirements

Input

1. The system should accept and collects blood sugar level of the user.
2. Allow to record the information needed of the system.

Output

3. The system should produce the needed information such as the blood sugar level and the amount of insulin required to infuse to the user.

Process

4. Compute the blood sugar level and the pace at which blood sugar levels change to produce the exact amount of insulin to infuse to the user.
5. Carry out the computation to determine if insulin should be administered.

Performance

6. Allow to change the timely blood sugar level and the amount of insulin to be infuse.
7. If the reading is below the safe minimum, no insulin shall be delivered.

Control

8. Give the function to warn and label the exact insulin to be infuse to the user.
9. If the reading is within the safe zone, the insulin is only delivered if the level of sugar is rising and the rate of increase of sugar level is increasing.

Non-Functional Requirements

10. Correct and proper fields to be displayed in the screen to avoid confusion to the user.
11. Record the time, date and how many shots of insulin does the user take.

SOFTWARE APPLICATION 2

A mental health case patient management system

Functional Requirements

Input

1. The system should accept and record the information needed.
2. Allow to record the information of the users and the patient.
3. Adding Patients: enables the staff in the front desk to include new patients to the system.

Output

4. System generates a report on every patient regarding various information like patients name, Phone number, bed number, the doctor's name whom its assigns, ward name, and more.
5. System also helps in generating reports on the availability of the bed regarding the information like bed number unoccupied or occupied, ward name, and more.

Process

6. Generate management information. System enables users to update the information of the patient as described in the mandatory information included.

Performance

7. Response Time: The system provides acknowledgment in just one second once the 'patient's information is checked.
8. User-Interface: The user interface acknowledges within five seconds.
9. Conformity: The system needs to ensure that the guidelines of the Microsoft accessibilities are followed.

Control

10. Put the method to identify or warn the staffs if the patients will do unnecessary actions of self-harm.

Non-Functional Requirements

11. Patient Identification: The system needs the patient to recognize herself or himself using the phone.
12. Logon ID: Any users who make use of the system need to hold a Logon ID and password.
13. Modifications: Any modifications like insert, delete, update, etc. for the database can be synchronized quickly and executed only by the ward administrator.

SOFTWARE APPLICATION 3

A wilderness weather station information system

Functional Requirements

Input

1. The operator shall be able to input the weather periods to the system to view the desired weather parameters within the particular periods.
2. Allow to organize data the weather conditions in remote areas.

Output

3. The system shall be able to produce minimum, maximum and the average data of a particular weather parameter when it is requested by an operator.

Process

4. The system shall provide the following weather parameters: temperature, pressure, wind speed & direction, rainfall, and humidity.

Performance

5. Provide to control the parameter readings periodically.

Control

6. Capture the exact data needed to help in detailing the weather information.

Non-Functional Requirements

7. The weather system shall be ready by schedule time.
8. System's operational and location of remote station and central station shall not violate the current Government regulations of environment and
9. The weather sensors shall be able to be upgraded every 5 years.
10. Measured the shorter increment of time.
11. Specified timing constraint.