Diabetes Monitoring System

**Background**

Although diabetes is not curable, it is a treatable disease and individuals who take a proactive role in their own treatment achieve the best long-term results. One of the critical functions of a proper diabetes management plan is monitoring blood sugar levels. In this assignment, you will build an interface that allows the user to input their daily blood glucose.

NOTE: *Monitoring blood glucose levels is typically a very complex task. This assignment features a simplification of those tasks. Therefore, this system should in no way be used to monitor any real person's glucose readings or exercise habits.*

**Interface Requirements**

Login Screen (3 pts)

Your system should have the following two users' data built-in, and these users can log in by simply selecting their first name.

This information should not necessarily be displayed on the login screen, but instead will be pertinent to other screens in the interface.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Patient's Full name | Patient's ID Number | Doctor's Name | Doctor's Phone Number | Low Glucose Levels (mg/dL) | Normal Glucose Levels (mg/dL) | High Glucose Levels (mg/dL) |
| Sara Norman | 5344-9709 | Dr. Jason Rosenberg | 579-0432 | < 80 | 80-140 | >140 |
| Gregg Norman | 1275-4307 | Dr. Nikhil Singh | 334-2309 | < 70 | 70-120 | > 120 |

Once logged in, every other screen in the interface should clearly display the current patient's name and ID number. It should also allow them the option to log out at any time.

Blood Glucose (Sugar Level) Monitoring (8 pts)

You should ask the users if they have taken their blood sugar reading today. If they have, you should allow them to input their reading. If not, you should prompt them to do it immediately and then record the results. (Acceptable input values are numbers 0 through 999.)

If the user's reading is in their low range (refer to chart above), you should notify them that this is a reading that is low. You should remind them to eat a sugar source, take their medicine, and eat meals and snacks as described by their doctor.

If the user's reading is in their normal range, inform them that their reading is within a normal range.

If the user's reading is in their high range, you should notify the user that their blood sugar is high. Ask them to call their doctor immediately, providing both their doctor's name and phone number. You should then ask them if there is a presence of ketones in their urine.

For any abnormal readings (i.e. in the too low or too high ranges), you should request the user to explain why they feel their reading isn't normal (Allow them to input such reasons as Drank soda, Has the flu, Ate a big lunch, etc.)

Completion (1pt)

After completing all of the above tasks, allow the user to log out. This should bring up the initial login window and allow the next user to begin using the system.

Help (1pt)

Throughout the interface, you should include ways to guide the user through the interface, such as mouse-over dialogs and error prevention techniques. You should include help buttons that will activate information to assist the user in case they get lost.

Documentation (2pts)

Your help documentation will be essential during grading, as it will allow you to showcase and describe all of your features in detail.