Planning Document for Hospital Information System (HIS)

Summary:

This document outlines the recent updates and revisions the group made to the Hospital Management System. The changes are primarily focused on enhancing the system's functionality regarding the management of medical staff (Admins, Physicians,Nurses, family doctors) and their interactions with patient information. This document serves to provide an overview of these changes, their implications, and how they deviate from the previously established plan in ITR2.

Major Changes to coding plan:

Physician and Nurse Deletion:

- **Previous Method:** Originally, Physicians and Nurses were deleted from the system using their first names as a parameter. This method posed a risk of inaccuracies due to the potential for duplicate names.
- **Updated Method:** Now, deletion is based on a unique identifier (ID) for each Physician and Nurse. This change ensures that the deletion process is precise, eliminating the risk associated with name duplications.

Assignment of Physicians to Patients:

- **Previous Method:** Physicians were previously assigned to patients at random from the database, without consideration for the suitability or the correctness of the ID used for assignment.
- **Updated Method:** The assignment process has been overhauled; Physicians are now set by the admitting nurse when taking down patient information. This change allows for more deliberate and appropriate matching of Physicians to patients based on the specific needs and conditions presented at admission.

Assignment of Nurses to Patients:

- **Previous Method:** Nurses were assigned to patients by retrieving a Nurse's employee ID from the database, which often resulted in incorrect assignments due to ID discrepancies.
- **Updated Method:** The system now enables the admitting nurse to assign a Nurse to a patient after taking down their information in the NursePatientAddFrame. This ensures that Nurse assignments are more accurately matched and recorded.

Access to Patient Information by Physicians and Nurses:

- **Previous Access Levels:** Both Physicians and Nurses previously had access to information on all patients in the hospital, regardless of whether they were directly involved in the patient's care.
- **Updated Access Control:** Access to patient information has been significantly restricted. Now, Physicians and Nurses only have access to the information of patients specifically assigned to them. This change enhances patient privacy and data security by limiting access to sensitive information to only those directly involved in a patient's care.

PatientGUI has undergone refactoring to enhance the "Display All Patients" feature, now specifically displaying patients assigned to the physician rather than all patients in the hospital. Additionally, the "Get Patient by ID" functionality has been tailored to retrieve information solely for patients assigned to the physician.

Plan Violations

Sequential ID for Employees:

- **Intended Plan:** It was planned to implement a system where IDs for new employees (both Physicians and Nurses) would be sequential, ensuring a straightforward method for tracking and referencing.
- **Violation:** Due to technical constraints and the complexity introduced by integrating this system with existing data records, implementing sequential IDs for employees was not feasible within the current update cycle.

Cost Estimation per user story:

- **User Story 1:**
- **Planned cost:**

Development estimate was 18 hours
Testing estimate was 3 hours
Debugging with other classes was planned for 1 hour

- **Actual time spent:**

Development took 20 hours
Testing and debugging took 4 hours together

- **User Story 2:**
- **Planned cost:**

Development estimate was 15 hours
Testing estimate was 3 hours
Debugging with other classes was planned for 2 hour

- **Actual time spent:**

Development took 18 hours
Testing and debugging took 3 hours together

- **User Story 3:**
- **Planned cost:**

Development estimate was 14 hours
Testing estimate was 1 hours
Debugging with other classes was planned for 3 hour

- **Actual time spent:**

Development took 10 hours
Testing and debugging took 2 hours together

- **User Story 4:**
- **Planned cost:**

Development estimate was 14 hours

Testing estimate was 1 hours
Debugging with other classes was planned for 6 hour

- **Actual time spent:**

Development took 10 hours
Testing and debugging took 4 hours together

- **User Story 5:**

Cost Estimation: 25 hours of development + 10 hours for testing and refactoring
Actual Time Spent: 30 hours of development + 10 hours for testing and refactoring

- **User Story 6:**

Cost Estimation: 30 hours of development + 10 hours for testing and refactoring
Actual Time Spent: 35 hours of development + 10 hours for testing and refactoring

- **User Story 7:**
  - **Planned Cost:**
    - Development: Estimated 10 hours of development time.
    - Testing and Refactoring: Estimated 5 hours for testing and refactoring.
    - Total Planned Time: 15 hours.
  - **Actual Time Spent:**
    - Development: Actual 15 hours of development.
    - Testing and Refactoring: Actual 10 hours for testing and refactoring.
    - Total Actual Time: 25 hours.
- **User Story 8:**
  - **Planned Cost:**
    - Development: Estimated 10 hours of development time.
    - Testing and Refactoring: Estimated 5 hours for testing and refactoring.
    - Total Planned Time: 15 hours.
  - **Actual Time Spent:**
    - Development: Actual 15 hours of development.
    - Testing and Refactoring: Actual 10 hours for testing and refactoring.
    - Total Actual Time: 25 hours.
- **User Story 9: Cost Estimate: 15 hours.**
- **User Story 10:**
  - **Planned cost:**
  - Development estimate was around 5 hours
  - Testing estimate was 2 hours
  - Debugging and connectivity was 2 hours

    - **Actual Time spent:**
    - Development took 4 hours
    - Testing took 3 hours
    - Debugging and connectivity issues took around 5 hours
- **User Story 11**
    - **Planned cost:**
    - Development estimate was 3 hours
    - Testing estimate was 2 hours
    - Debugging with other classes was planned for 1 hour
    - **Actual time spent:**
    - Development took 2 hours
    - Testing and debugging took 2 hours together
- **User Story 12:**

Cost Estimation: 10 hours of development + 5 hours for testing and refactoring
Actual Time Spent: 15 hours of development + 10 hours for testing and refactoring

- **User Story 13**
    - **Planned:**
    - Development was planned to take 2 hours
    - Connectivity was planned 2 hours
    - **Actual:**
    - Development took 2 hours
    - Connectivity took 5 hours
    - Debugging with other classes took 3 hours
- **User Story 14**
    - **Planned:**
    - Development was planned 3.5 hours
    - Debugging was planned for 2 hours
    - **Actual:**
    - Development took 4 hours
    - Debugging took 3 hours
- **User Story 15: Cost Estimate: 24 hours.**
- **User Story 16:**
    - **Planned Cost:**
    - Development: Estimated 10 hours of development time.
    - Testing and Refactoring: Estimated 5 hours for testing and refactoring.
    - Total Planned Time: 15 hours.
    - **Actual Time Spent:**
    - Development: Actual 15 hours of development.
    - Testing and Refactoring: Actual 10 hours for testing and refactoring.
    - Total Actual Time: 25 hours.

Final Design note:

The updates to the Hospital Management System reflect our commitment to continuous improvement and adaptation to the evolving needs of healthcare delivery. While we try to adhere to our planned enhancements, some deviations, such as the implementation of sequential employee IDs, highlight the challenges of balancing ideal outcomes with technical capability. Our team is dedicated to revisiting these challenges in future updates to ensure that our system remains at the forefront of supporting both healthcare professionals and patients alike.