Painkiller Injection System

Specification

CS132: Software Engineering

Group 15
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Contents

1 System Architecture

The system architecture is shown below:

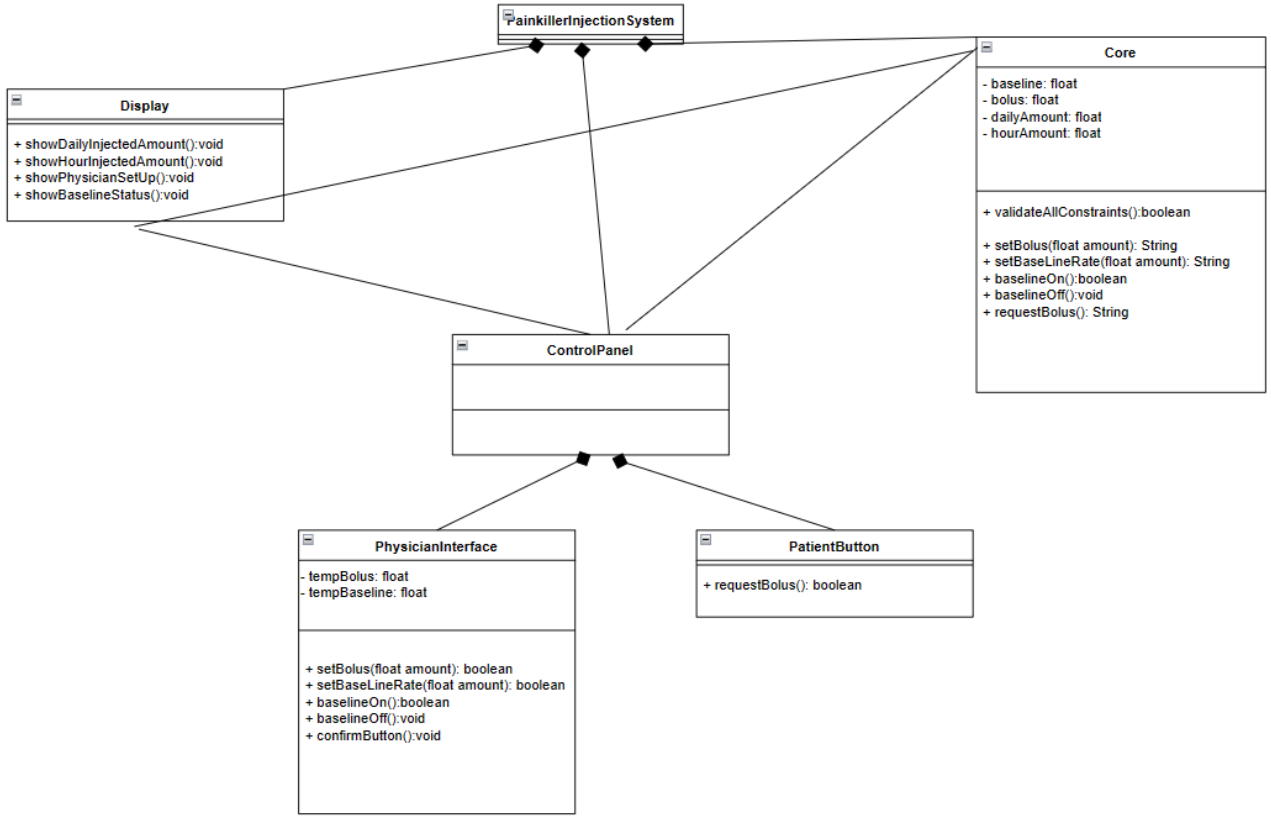

Figure 1: System Architecture

2 Software Specifications

2.1 S1: DoctorApp Implementation

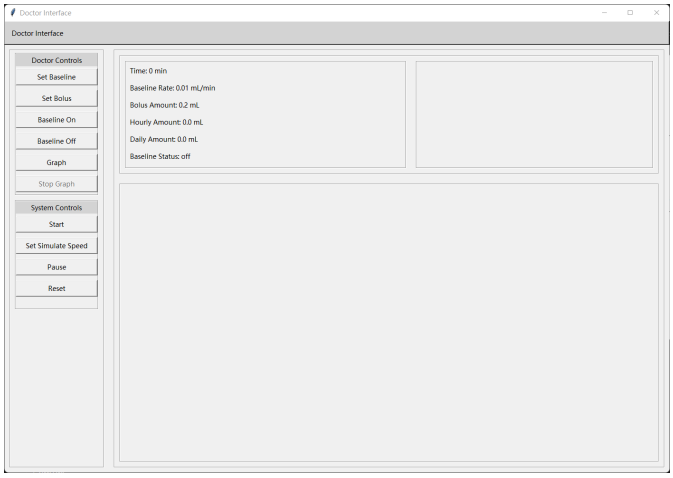

Figure 2: DoctorAPP's overview

2.1.1 Baseline Configuration

- S1.1: Set Baseline
  This feature allows the user to establish a baseline for patient monitoring. Upon pressing the "Set Baseline" button, the system captures and stores the current patient data as the baseline for future comparisons.

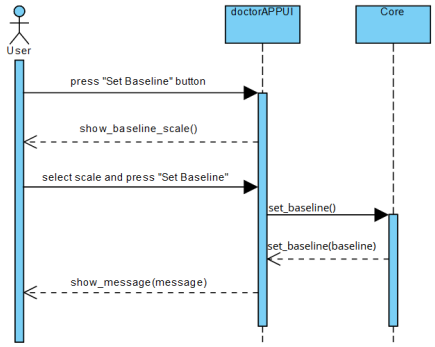

Figure 3: Set Baseline

2.1.2 Bolus Administration

- S1.2: Set Bolus
  This functionality enables the healthcare provider to specify a bolus dose for the patient. The system records the dosage amount and prepares to administer it upon confirmation.

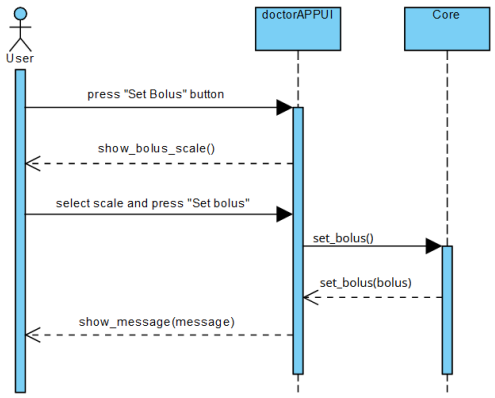

Figure 4: Set Bolus

2.1.3 Baseline Monitoring

- S1.3: Baseline On
  When this option is activated, the system continuously compares the current patient data against the established baseline to detect any deviations.

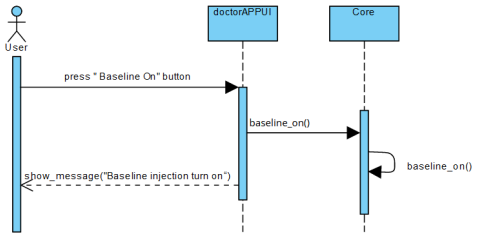

Figure 5: Baseline On

- S1.4: Baseline Off
  This option halts the baseline monitoring process, stopping the comparison of current patient data against the baseline.

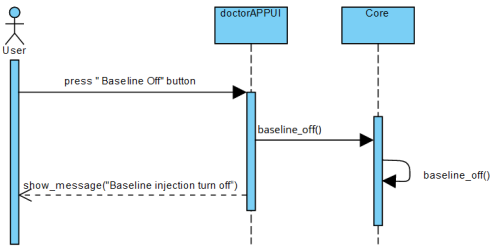

Figure 6: Baseline Off

2.1.4 Graphical Data Representation

- S1.5: Start Graph
  This initiates the graphical representation of patient data, allowing for real-time monitoring of patient parameters.

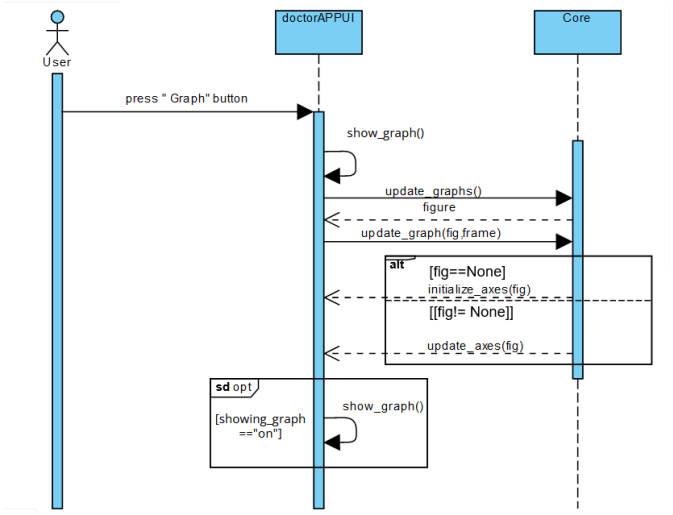

Figure 7: Start Graph

- S1.6: Stop Graph
  This stops the graphical display of patient data, ceasing the real-time data visualization.

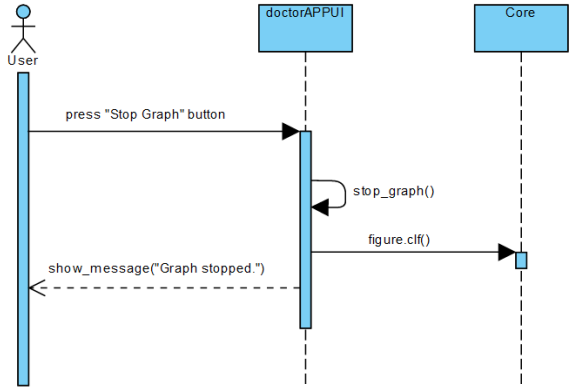

Figure 8: Stop Graph

2.2 S2: PatientApp Implementation

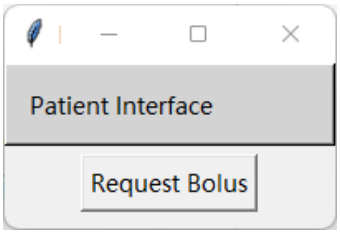

Figure 9: PatientAPP's overview

- S2.1: Request Bolus
  This feature allows the patient to request a bolus dose through the application. The request is sent to the healthcare provider for approval and administration.

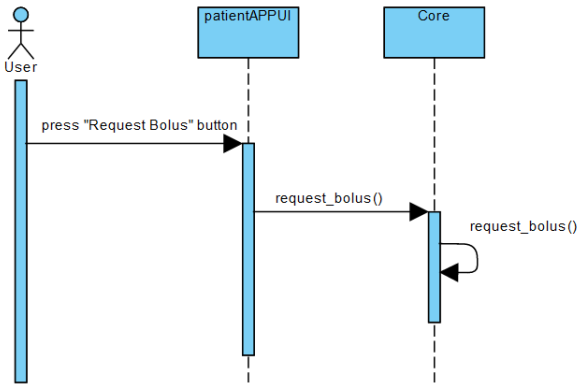

Figure 10: Request Bolus

2.3 S3: Core System Implementation

2.3.1 Data Display and Monitoring

- S3.1: Information Display
  This core functionality displays patient information and monitoring data in real-time, providing healthcare providers with up-to-date patient status.

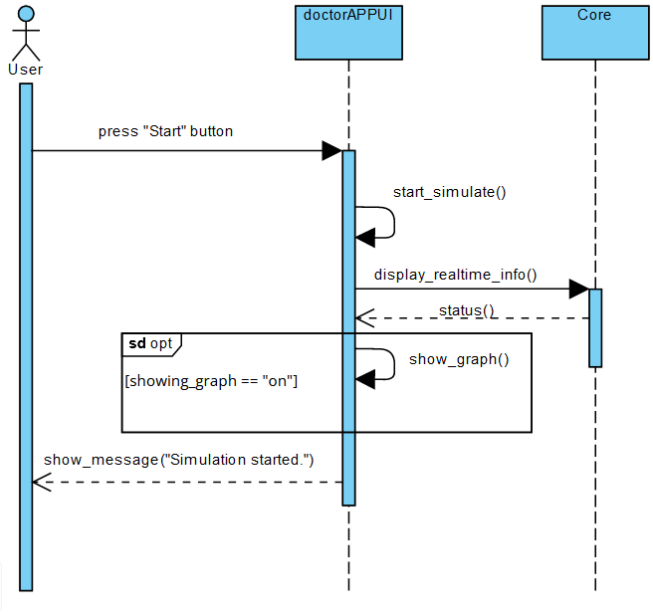

Figure 11: Information Display

2.3.2 Data Validation and Update

- S3.2: Validate and Update Data
  This process involves the continuous validation of incoming patient data and its update at regular intervals, ensuring the accuracy and timeliness of patient monitoring.

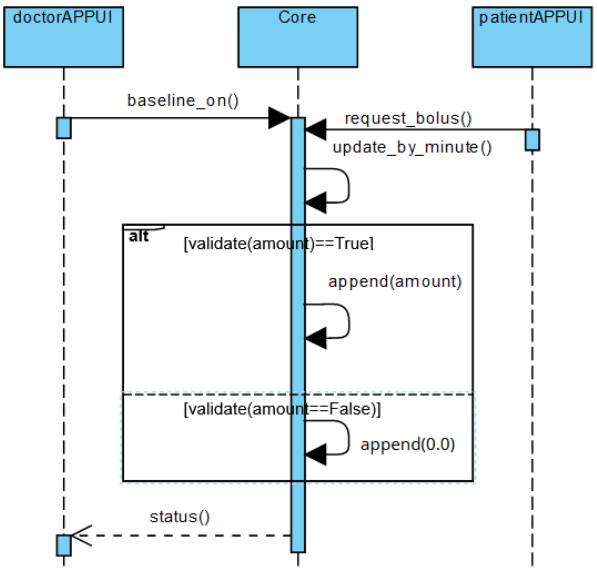

Figure 12: Validate

3 Process Descriptions Based on Code

For each of the specifications listed above, the corresponding process in the code would generally involve the following steps:

1. **User Interface Interaction**: The process begins with the user interacting with the graphical user interface (GUI), such as pressing a button or entering data.

2. **Data Processing**: Upon the user action, the system processes the input or request. This could involve capturing data, setting parameters, or initiating a monitoring process.

3. **Action Execution**: The system then executes the necessary actions based on the processed data. This could include displaying information, starting or stopping a monitoring process, or sending a request.

4. **Feedback and Display**: Finally, the system provides feedback to the user through the GUI. This could be in the form of updated information, confirmation messages, or graphical data representation.

Each specification would have its unique implementation details based on the specific requirements and functionalities described.