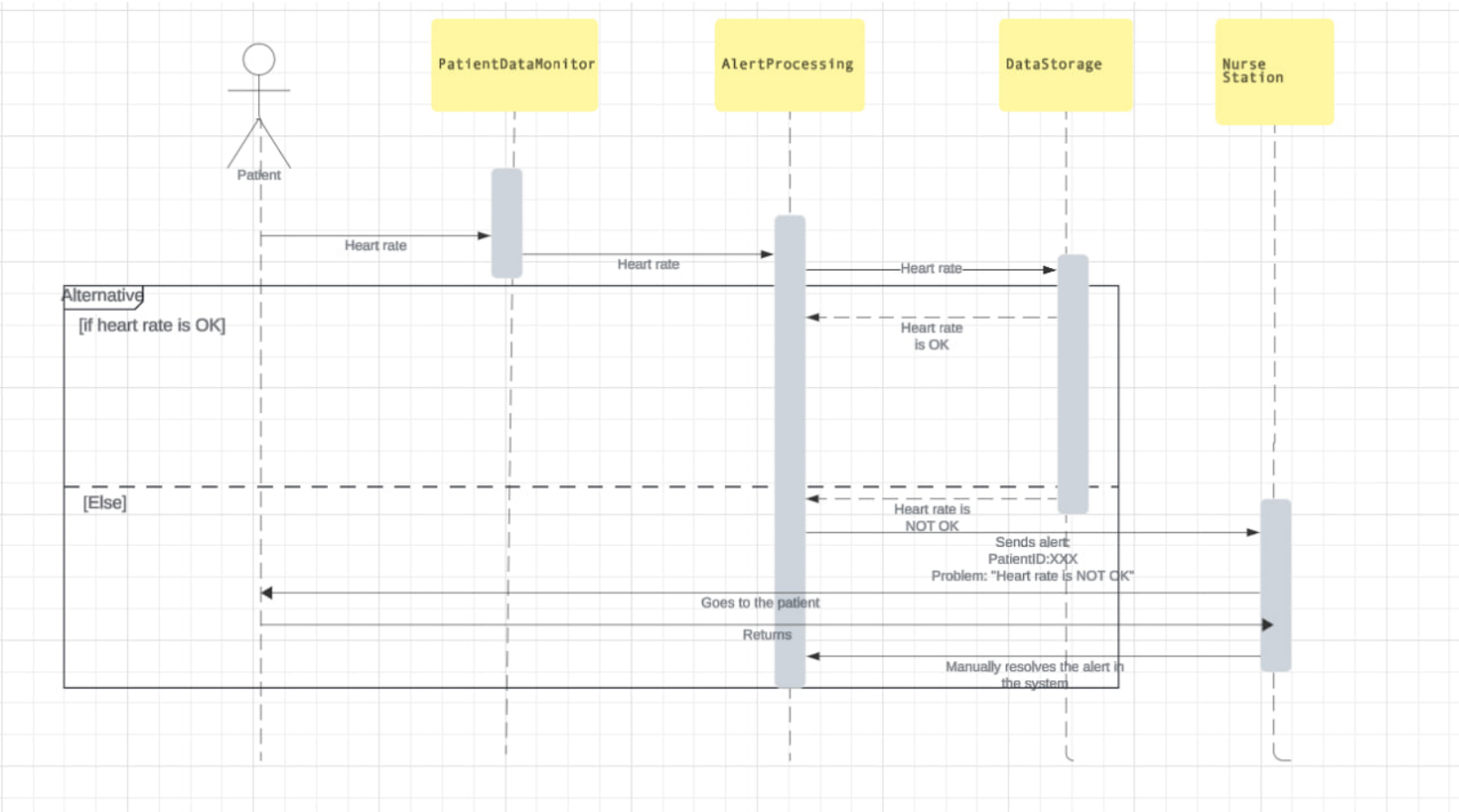
UML Sequence Diagram of the Alert Generation System



This sequence diagram demonstrates the process of monitoring and responding to a patient's heart rhythm in a medical system. The process begins with PatientDataMonitor, which continuously monitors the heart rhythm. If the readings are within normal limits, the system continues monitoring without further action. However, when the heart rhythm is out of range, PatientDataMonitor sends the data to AlertProcessing.

AlertProcessing evaluates the data and, if it confirms an alarm condition, sends the information to DataStorage and simultaneously sends a notification to the Nurse Station. DataStorage serves as a record of the incident, which allows you to track and analyse trends in the patient's condition over the long term.

Once Nurse Station receives the notification, medical staff can respond immediately. The nurse checks the patient's condition and, depending on the situation, can either manually resolve the alarm in the system once the patient's condition has stabilised or take the necessary medical action.

This sequnce of actions ensures quick and effective intervention, which is vital for critical patients. The system is designed to maximise the timeliness and accuracy of the medical response, increasing the likelihood of a successful outcome for the patient.