Alert Generator System

-alertGenerator: AlertGenerator
-alertManager: AlertManager

Alert Generator

-patientData: PatientData
-alertThresholds: List <Thresholds>
- -
+evaluateData: (data: PatientData):
void
+triggerAlert(alert: Alert): void

Alert

- patientID: String
- condition : String
-timestamp: DateTime

Alert Manager

- alerts: List <Alert>
- -
- manageAlerts(): void
- sendAlerts(): void

The class diagram for the alert generation system outlines how classes interact within the system. At the heart of the system lies the AlertGenerator class, responsible for continuously monitoring patient data and generating alerts based on predefined criteria. This class utilizes an aggregation relationship with the Alert class, meaning it can instantiate one or more Alert objects when an alarm condition for a specific patient is detected. Additionally, the AlertGenerator class has a composition relationship with the AlertManager class, which handles sending alerts to the appropriate medical staff. This relationship reflects that an AlertGenerator cannot function properly without an associated AlertManager.

The AlertManager class uses an association with the Alert class, allowing the AlertManager to access Alert objects and manage them as needed. This relationship scheme ensures a clear separation of responsibilities, with the AlertGenerator focused on data monitoring and alert generation, and the AlertManager dedicated to alert management and dispatching. Overall, this design provides a clear and modular structure for the alert generation system, facilitating system maintenance and extension in the future.