



## Data Storage And Data AccessLayer UML Documentation Overview

- **DataListener Interface:** Defines methods for reading and processing incoming data, ensuring standard functionality across different data sources.
- **FileDataListener Class:** Specializes in reading and processing data from file systems, efficiently handling file operations and data parsing.
- **WebSocketDataListener Class:** Manages data reception via WebSocket connections, enabling real-time data communication.
- **TCPDataListener Class:** Facilitates data handling over TCP/IP connections, supporting robust network data operations.
- **DataStorage Class:** Central storage component that manages operations related to data persistence such as storage, retrieval, and deletion of patient data.
- **PatientData Class:** Represents detailed patient metrics collected from various sources, encapsulating health-related data.
- **Metrics Class:** Contains specific health metrics for a patient, such as heart rate, blood pressure, and other vital signs.
- **ECGData Class:** Represents electrocardiogram data, including waveform arrays and sampling rates.
- **Data Listeners (File, WebSocket, TCP)\*\*:** Each class is tailored for specific data input sources and includes methods for initializing connections, reading data streams, and parsing incoming data into `PatientData` objects.
- **DataStorage:** Provides methods for adding, retrieving, and deleting `PatientData` entries, serving as the backbone for data management within the system.
- These components are designed with modularity in mind, allowing each to function independently while seamlessly integrating with the broader system architecture. This design facilitates easy updates and scaling.
- The data listener classes ensure flexible data integration capabilities across various data transmission methods, enhancing the system's ability to adapt to new technologies or data sources.
- The `DataStorage` class is crucial for the integration with alert generation and patient monitoring components, ensuring that all patient data is readily accessible and securely managed.