Data Storage System

DataStorage

+storeData(data: PatientData)   +deleteData(dataId: String):

PatientData

-patientId: String   -metrics: number   -timestamp:time
+encryptData()   +decryptData()

Stores →

DataRetriever

+fetchData(patientId: String)   +verifyAccess(staffId: String)

retrieves ↑

MedicalStaff

- accessLevel: String
+requestData(patientId: String):   PatientData

verifies ←

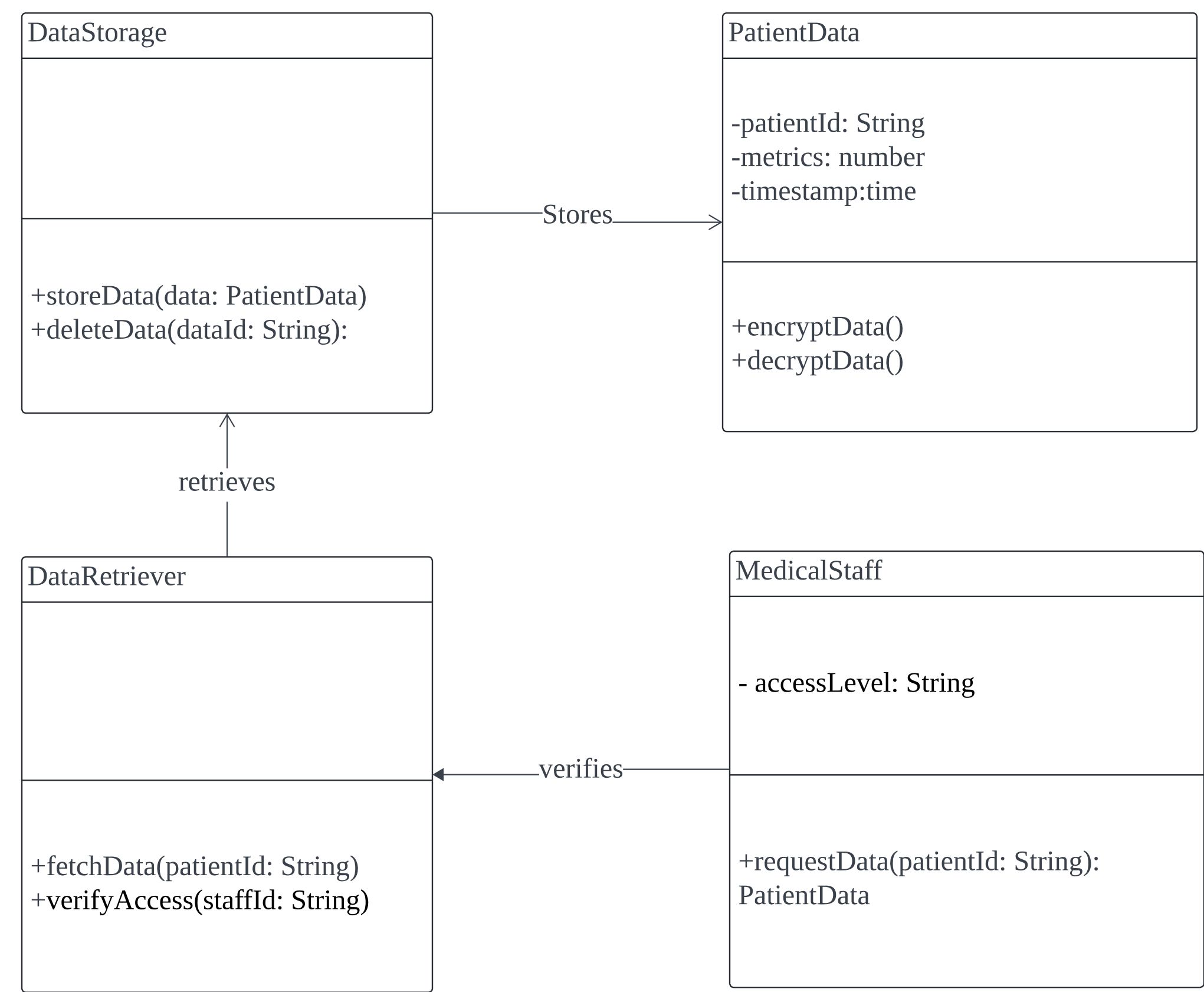
This UML class diagram illustrates the key components and their interactions within a data storage system. The primary function of this system is to securely store and manage patient data, including both real-time and historical data.

1. DataStorage:
   - Responsibilities: Responsible for storing and deleting patient data.
   - Methods:
   - storeData(data: PatientData):
   - deleteData(dataId: String):
   - Relationships: Interacts with PatientData to store patient information securely.
2. PatientData:
   - Attributes: Contains patient ID (patientId), health metrics (metrics), and timestamp (timestamp).
   - Methods:
   - encryptData():
   - decryptData():
   - Relationships: Used by DataStorage to store and manage patient information.
3. DataRetriever:
   - Responsibilities: Responsible for retrieving patient data from DataStorage and verifying access permissions for medical staff.
   - Methods:
   - fetchData(patientId: String): PatientData is used to retrieve data.
   - verifyAccess(staffId: String): verify access permissions.
   - Relationships: Retrieves data from DataStorage and controls access by verifying the identity of MedicalStaff.
4. MedicalStaff:
   - Attributes: Contains access level (accessLevel).
   - Methods:
   - requestData(patientId: String): PatientData is used to request patient data.
   - Relationships: Verified by DataRetriever to obtain necessary patient data based on access permissions.