

UML documentation

The main class which is the HealthDataSimulator is the backbone of this system. It simulates all types of patient data and also directs it to a variety of outputs based on user preferences. The class is responsible for then initialising the simulation of the patient data and then directing it to one of the desired output destinations (console, file, TCP, WebSocket).

The HealthDataSimulator class directly connects to both of the interfaces which are OutputStrategy and PatientDataGenerator. This way it can leverage the functionalities of the classes connected to the interfaces which also allow it to be quite flexible.

Each data generator class (BloodPressureDataGenerator, BloodLevelsDataGenerator, ECGDataGenerator, and BloodSaturationDataGenerator and AlertGenerator) implements the PatientDataGenerator interface. These classes facilitate the simulation of patient data which include blood levels, blood pressure, alerts and ECG readings.

The OutputStrategy interface supports output strategies of many kinds for example console, file, TCP socket, or WebSocket.

This design choice allows the system to be quite flexible and scalable as new data generator classes or output strategies can be seamlessly integrated into this system. This will make changes to our system easier and reduce the chance of breaking our system when adding new things.