



The HealthDataSimulator class serves as the entry point for the system, orchestrating the generation and output of health data for patients. It initializes patient IDs and coordinates the generation of health and alarm data using the PatientDataGenerator interface. Subsequently, it outputs the generated data using a selected strategy from the OutputStrategy interface.

The PatientDataGenerator interface defines the contract for generating various types of health data, including BloodSaturation, BloodPressure, BloodLevel, ECG, and Alert. Each type of data corresponds to a class with the same name, all of which inherit from the PatientDataGenerator interface. The relationship between the HealthDataSimulator class and the PatientDataGenerator interface signifies that at least four types of data are generated for each operation, with an additional fifth type, Alert, generated if an alarm occurs.

Similarly, the OutputStrategy interface defines the contract for output strategies, with each output strategy corresponding to a class implementing the interface. The association between the HealthDataSimulator class and the OutputStrategy interface indicates that at most one strategy for each operation can be chosen. This design ensures flexibility in selecting the appropriate output strategy while maintaining simplicity and modularity in the system architecture.