

CareMate is a software application designed to assist healthcare providers in managing patient records, tracking treatments, and generating health reports. The application aims to streamline patient data entry, update records, log treatment history, and generate reports for medical staff.

The Data-Flow Architecture is an ideal choice for CareMate because it focuses on data movement through different processes within the system. Given that CareMate deals primarily with processing patient records, treatment logs, and generating reports, data must flow between various components in a structured manner. This architecture ensures a clear separation of concerns between data input, processing, and output, making it easier to manage, scale, and modify the system.

While Main Program/Subprogram architecture could work for a simpler system, CareMate's requirement for managing complex data flows between multiple processes makes it more suited to Data-Flow Architecture. The MVC model, though useful for web applications, might introduce unnecessary complexity for CareMate, which doesn't require distinct separation between model, view, and controller layers in the traditional sense.

Data Flow Diagram (DFD)

- **External Entities:**
 - **Patient:** Provides input data, such as patient information and symptoms.
 - **Medical Staff:** Inputs treatment data, requests reports and updates patient records.
- **Processes:**
 - **Patient Record Entry:** The process where patient data is entered into the system.
 - **Update Patient Record:** Process where existing records are updated by medical staff.
 - **Treatment History Log:** Process where treatment data is stored and managed.
 - **Generate Report:** Process where health reports are generated and retrieved by medical staff.
- **Data Stores:**
 - **Patient Database:** Stores patient information, medical history, and updates.
 - **Report Storage:** Stores generated reports, logs, and summaries.
- **Data Flows:** Describe the flow of data, such as:

- **Patient Info** moving from patient-to-patient Record Entry and into the Patient Database.
- **Treatment Logs** being retrieved by Treatment History Log from the Patient Database and stored in Report Storage.

