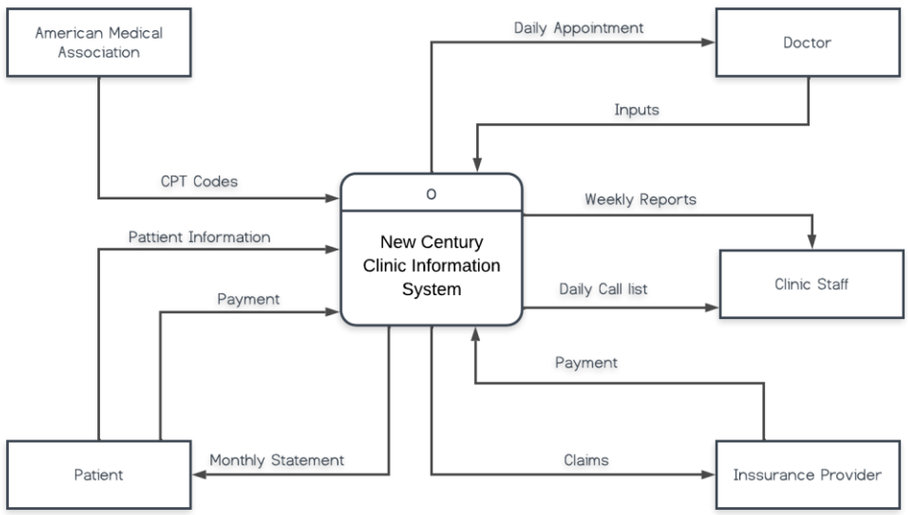
CASE ANALYSIS 1

Chapter 5: Data and Processing Model - New Century Clinic *pp.* 239 – 240

1. Prepare a context diagram for New Century's information system

Figure 1. Context Diagram of New Century Clinic Information System



2. Prepare a diagram 0 DFD for New Century. Be sure to show numbered processes for handling appointment processing, payment and insurance processing, report processing, and records maintenance. Also, prepare lower-level DFDs for each numbered process.

Figure 2.1. Level 0 DFD of New Century Clinic Information System

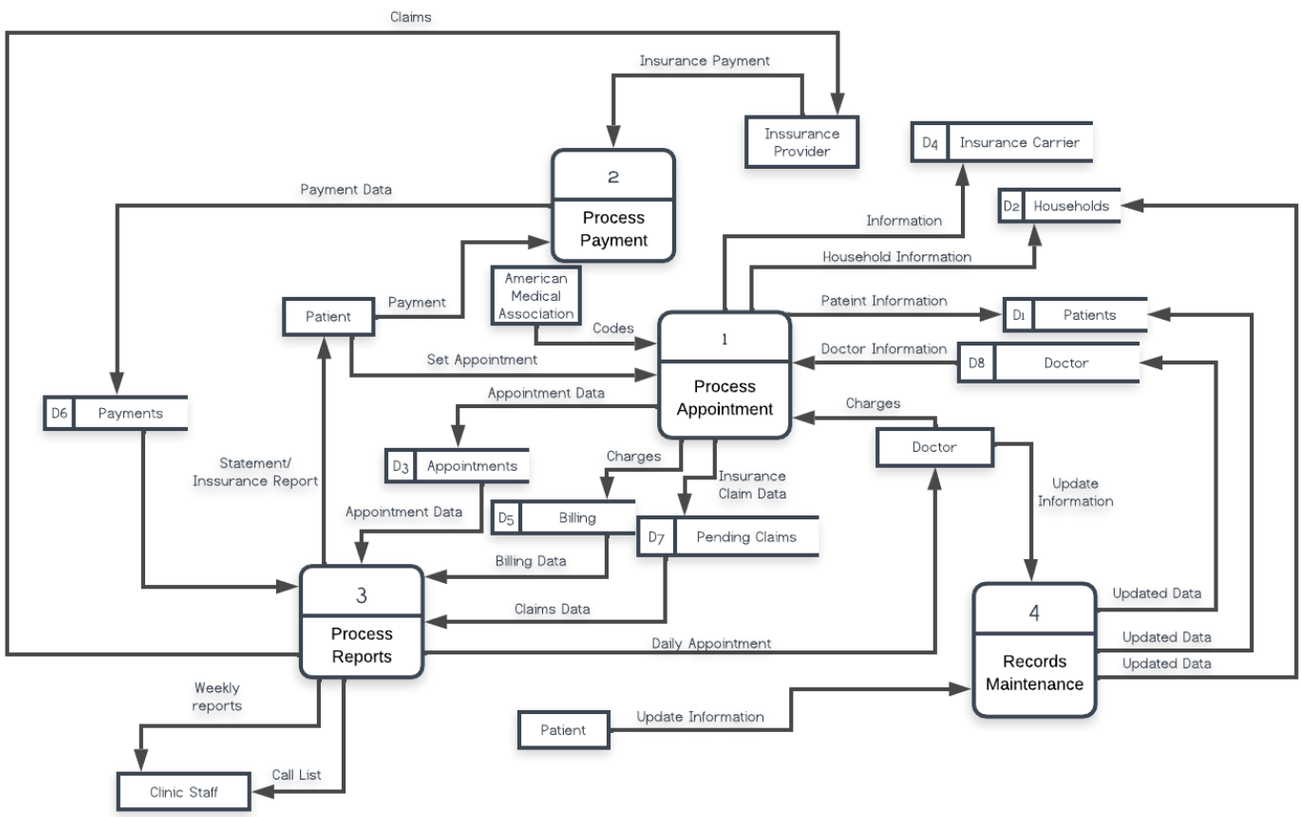


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Figure 2.2. Low-level DFD of Appointment Process

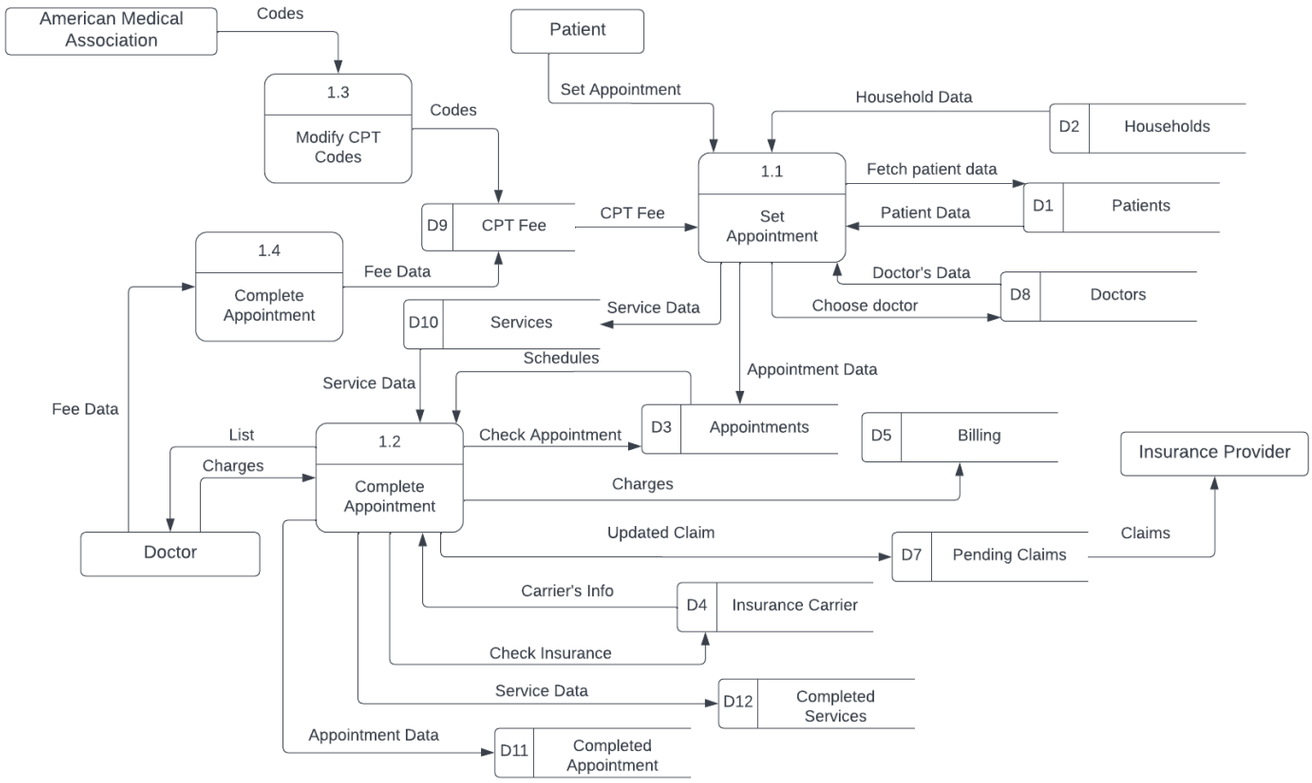


Figure 2.2. Low-level DFD of Payment Processing

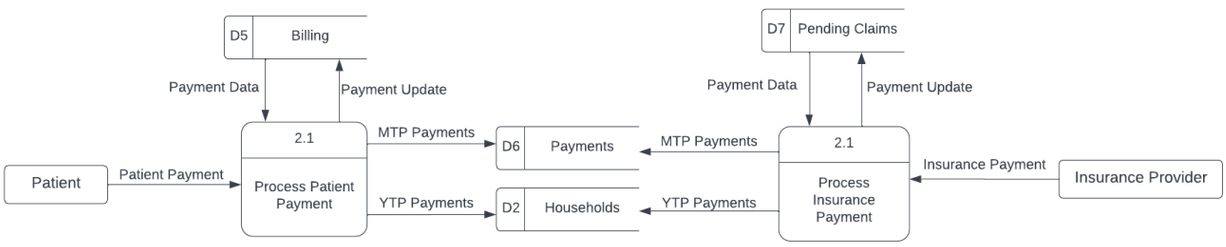
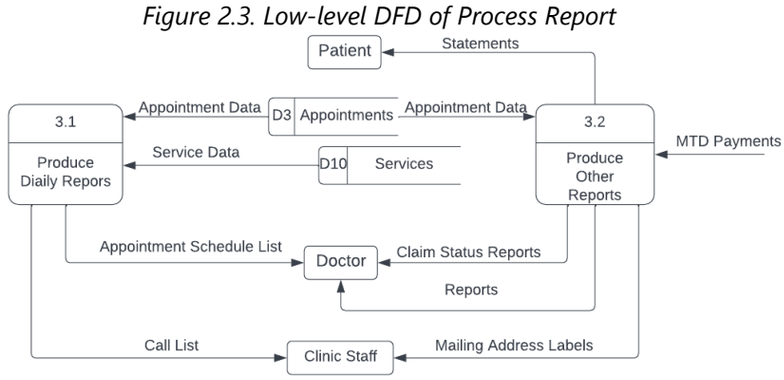
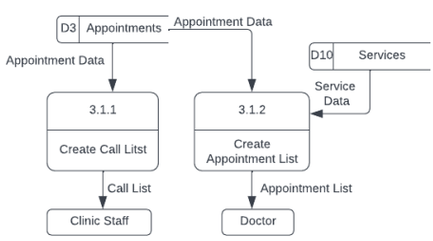
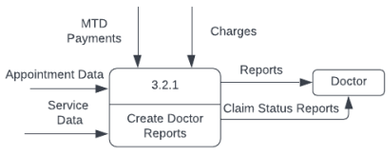
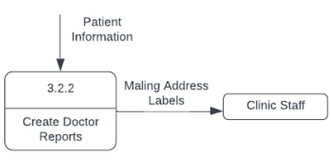


Figure 2.3. Low-level DFD of Process Report









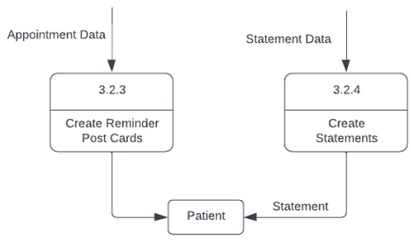


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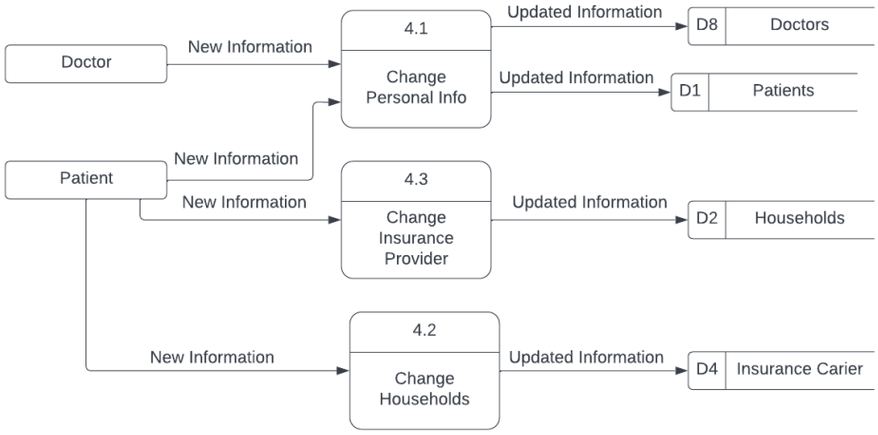
Figure 2.4. Low-level DFD of Records Maintenance



3. Prepare a list of data stores and data flows needed for the system. Under each data store, list the data elements required.

Table 1. Data Stores and its Required Elements

CODE	NAME	REQUIRED ELEMENTS
D1	Patients	Patient Number Patient Name Address Contact Number Last Visit
D2	Households	Household Number Patient Number Name Contact Number Address Insurance company number Charges
D3	Appointments	Appointment Number Name Date Time
D4	Insurance Carrier	Name Number Address
D5	Billing	Billing Number Appointment number Patient Number Household Number CPT code Balance
D6	Payments	Payment Number Household number Patient Number Payment Amount Insurance company number

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D7	Pending Claims	Insurance company number Appointment Number Claim amount Payment amount MTD charges YTD charges Balance outstanding
D8	Doctors	Doctor Number MTD charges YTD charges Name
D9	CPT Fee	Appointment number CPT code Fee
D10	Services	Appointment Number Fee
D11	Completed Appointments	Appointment Date Appointment number Patient number Doctor Number
D12	Completed Services	Appointment number CPT code Fee

List 1. Dataflows

- CPT codes
- Charges
- Call list
- Claim
- Appointment data
- Statements
- Mailing address labels
- MTD payments
- YTD payments
- Reports
- Patient update
- Insurance update

4. Prepare a data dictionary entry and process description for one of the system's functional primitives.

Table 3. Process Description

Process:	Input Data Flows		
Purpose:	Schedules patients' appointment and services		
Input Data Flows:	• Appointment request • Patient data • CPT fee schedule	**Output Data Flows:**	• Appointment data • Service Data
Process Description:			
Process Description: For each appointment request, obtains the patients number. For each CPT code in request obtains the code from fee schedule and modifies the data in schedule appointment data			

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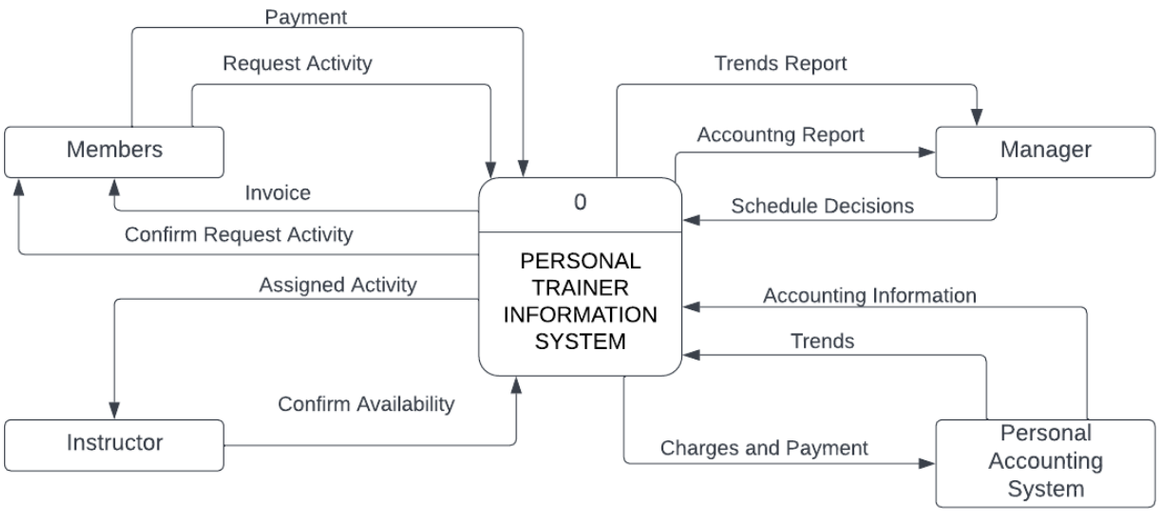
Chapter 6: Data and Processing Model Personal Trainer *pp.* 240

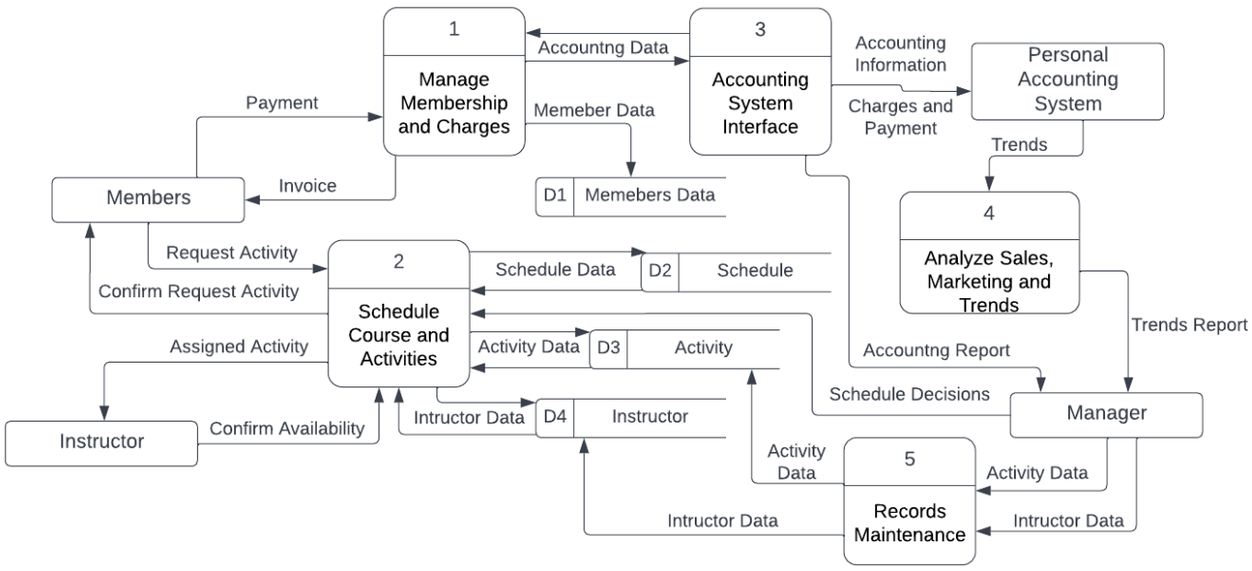
1. Prepare a context diagram for the new system.

Figure 3. Context Diagram of Personal Trainer Information System



2. Prepare a diagram 0 DFD for the new system.

Figure 4. Level 0 DFD of Personal Trainer Information System



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3. Write a brief memo that explains the importance of leveling a set of DFDs.

MEMORANUDUM NO.1 S.2022

TO: All Employees
FROM: Elizor Villanueva, Manager
DATE: July 8, 2022
SUBJECT: Importance of leveling a set of DFDs

Flow of Information Levels are dissected or enlarged in diagrams. Separating each operation into subprocesses, as well as exposing more details about the procedure at each level, is referred to as leveling. DFD leveling is a strategy for creating more consistent and accurate DFDs. At a lower level, leveling depicts comprehensive information. It produces a large number of diagrams until it has recognized all of the function requirements.

DFD leveling is significant since it depicts the layout of information systems. It's a rough draft of a detailed diagram sequence till the functional activities are determined. Drawing a sequence of more detailed illustrations until the appropriate level of detail is obtained is how leveling is done. The targeted system is first displayed as a single process, then additional detail is added until all activities are functional primitives. System analysts can use leveling to display system requirements in their entirety or at any level of detail requested by the system designer.

Thank you,
The Manager.

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4. Write a brief memo that explains the importance of balancing a set of DFDs

MEMORANUDUM NO.2 S.2022

TO: All Employees
FROM: Elizor Villanueva, Manager
DATE: July 8, 2022
SUBJECT: Importance of balancing a set of DFDs

Balancing set of DFDs guarantees that the data flow between the parent process and the child process is maintained effectively. As a result, it aids in preserving consistency between the child and parent processes.

The notion of balance asserts that at the next level of decomposition, all incoming flows to a process and all outgoing flows from a process in the parent diagram should be retained.

Process decomposition allows you to divide your overall DFD into layers, each of which provides more information about a component of the level above it.

The balancing feature's objective is to ensure that your system's internal consistency is maintained, which is especially useful when multiple levels of expertise are participating in a project.

When you decompose a process, Power Designer assists you in initializing the items from the upper-level to link to the sub-process in the sub diagram. Power Designer fetches global objects, such as external entities or data, automatically.

Thank you,
The Manager.