1ICPC317

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SDLC Laboratory

Quality Laboratory Manual

Experiment No. 04

To perform the function oriented diagram: DFD and Structured Chart.

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Experiment No. 04

Title of Experiment: To perform the function oriented diagram: DFD and Structured Chart.

Aim of Experiment: To understand Dataflow Diagram and Structured Diagrams for the application to be implemented.

System Requirements – Win 10 and above OS, 4GB RAM, 2.33 GHz Processor

Software/s Requirement – StarUML

Experiment Objectives:

- To understand the importance of DFD and Structured Charts in the software project.
- To understand the components of DFD and Structured Diagram.
- To draw the DFD and Structured diagram for the application to be implemented.

Experiment Outcomes:

- Data Flow Diagram based on the requirement.
- Structured Diagram based on requirement.
- Better and quick understanding of the system.

Theory:

Data Flow Diagram:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically

Components of DFD:

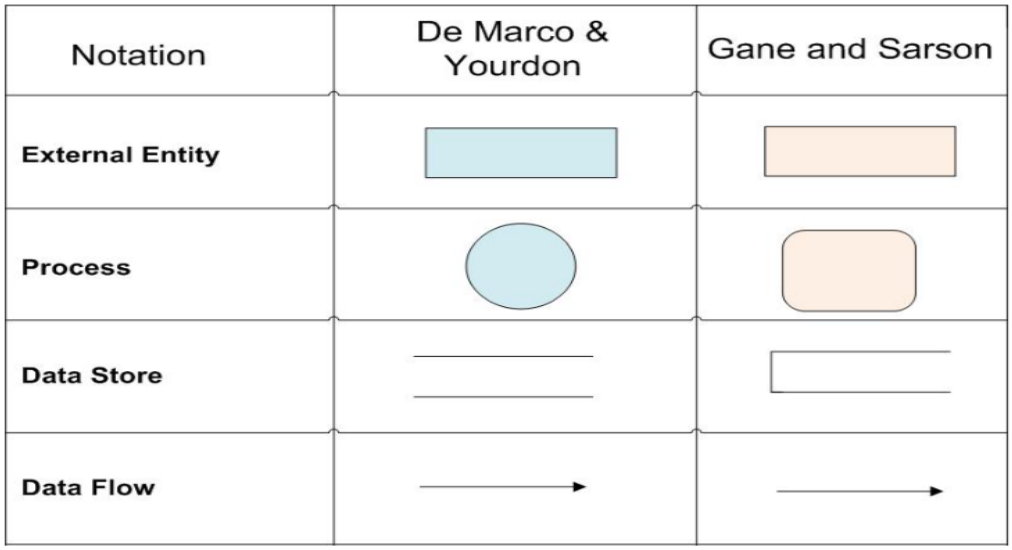
1. **External Entity:**
   An external entity can be a person, organization, or system that is external to the system. From entities, the information flows into the system (known as a source) or the entities receive data from the system (known as a sink). Entities are represented using rectangles

2. **Process:**
   A process is an activity or a function that is carried by the system. Processes manipulate and transform the data. They receive some inputs and generate some outputs.

3. **Data Store:**
   Data stores are used to store the information by the process that can be later retrieved by the same or another process

4. **Data Flow:**

Data flows describe the flow of information between processes, entities, and data stores. Every data flow name should be a noun. Data flows are represented using arrows.



DFD Symbol

Levels of DFD

- It is very difficult to explain all the processes in just one DFD that is why DFDs are expressed in a set of DFD levels. The first step in creating DFDs is to identify the DFD elements (external entities, processes, data stores, and data flows)
- The next steps involve creating the different levels of the DFDs. The highest level DFD depicts the synopsis of the system and with decreasing levels of the DFDs, detailed explanations of each segment of the whole process are described.

1. **Level 0 DFD:**

   These diagrams describe general high-level processes (the first level of numbering is used), external entities, data flows, and data stores.

2. **Level 1 DFD:**

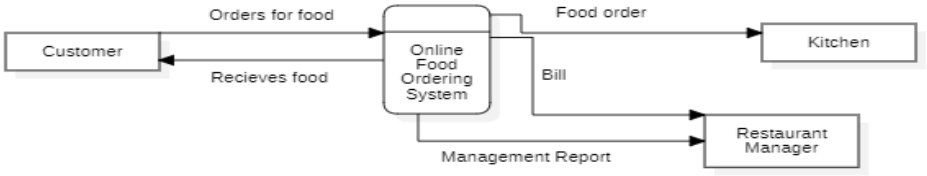
   Level – 1 DFD decomposes each parent process of the Level – 0 DFD into more details; into child processes. It also contains data stores, external entities, and data flows.

3. **Level 2 DFD:**

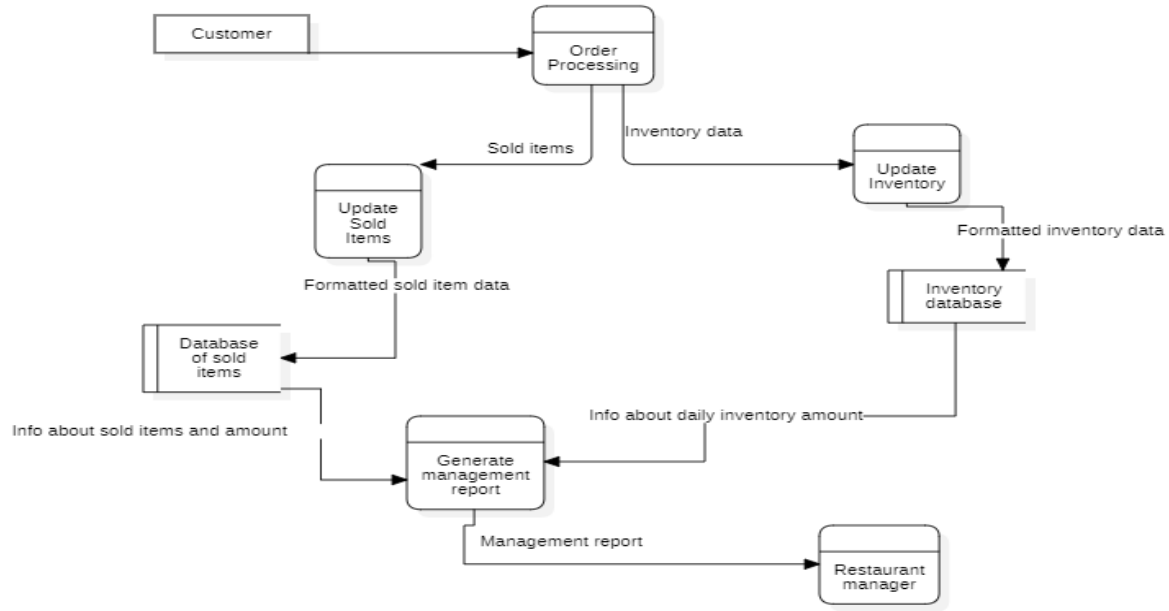
   Level – 2 DFD further decomposes the child process depicted in Level – 1 DFD

An example of different levels of DFDs for Online Food Ordering System

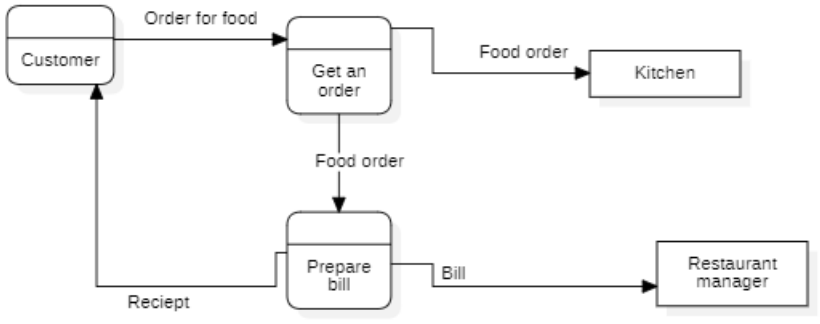
Level-0



Level-1



Level-2



Observations:

- System can be represented in different levels of details using DFD levels
- Can start with context level and can be detailed as Level-0, Level-1, Level2 and beyond
- Helps to understand the data flows between Entity, Process and Data store.

Conclusion:
The experiment successfully demonstrated, how to draw the different levels of DFD to make the understanding of the system more detailed.

Expected Oral Questions:

1. What is DFD?
2. List out components used in DFD?
3. What is external Entity?
4. What is Process?
5. What is Data Store?
6. What is the difference between Flow chart and DFD?

FAQs in Interview:

1. What is the use of DFD?
2. How DFD is differed from Flowchart?
3. What is the need of different levels of DFD?
4. What is context diagram?