CHAPTER – IV

PLANNING

4.1   Introduction
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4.1   INTRODUCTION

Structured Analysis, like all software requirements methods, is a model building activity. Using a notation that is unique to the structured analysis method, we have created models that depict information i.e. data and control, flow and content and partition the system functionally and behaviorally. Structured analysis is not a single method applied consistently by all who use it. Rather, it is an amalgam that has evolved over the years.

The structured analysis approach of software engineering has been used in through the project work. It is an information flow and content modelling technique. We have begun the study of the existing system, by preparing the flow models as it is done for any computer based system, regardless of its size and complexity.

The overall function of the system is represented as a single information transform, noted as a bubble in the second figure of this chapter. Inputs and outputs are shown as a labelled arrow, originated from external entity represented as boxes. We have used Data Flow Diagram (DFD) through this chapter to model the flows. A Data Flow Diagram is a graphical technique that depicts information flow.

Although the Data Flow Diagram may be used to represent a system or software at any level of abstraction[1], still we have used the DFD to represent the system at three level of abstraction including context model. The various process drawn in this chapter have been properly augmented with the descriptive text along with each and every inputs and outputs. But the process description has not been written for any one of the processes. The reason is that we have used

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[1] Software Engineering by Rogor S. Pressman

Functional Requirement Specification (FRS) as the most important tools to describe the process. The FRS (i.e. processing narrative) describes the input to the bubble, the algorithm that is applied to the inputs and the outputs that is produced. The FRS has been used as a intermediate tool between users requirement and designers requirement.

During the study of the existing system, while having a detailed discussion with the related personnel of the concerned department and going through some pages of the documents. We have stored out all the required details using the bottom–up approach. Then we combined all the individual processes for the purpose of analysis using Top – down approach. It was not possible to follow up the Top–down structured approach at the beginning of the analysis due to the time constraints of the related personnel of the system. After drawing the DFDs for each activity, the system shows the necessary I/O and the information flow.

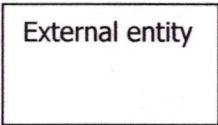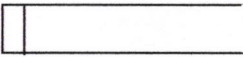Following are the basic notations used to construct the DFDs.

External entity	A producer or consumer of information that resides outside the bounds of the system to be modelled
⬭	A transformer of information (i.e. process)
↗	A data item or collection of data item, the arrowhead indicates the direction of flow
▭	The table in which information will be stored ultimately

Figure 4.1 Notation used to create Data Flow Diagram

IDENTIFICATION OF NEEDS AND WANTS

Identification of need is the starting point in the evaluation of computer-based system. We have considered the following points to perform the analysis task.

- What are the desired functions and their performance?
- What is the overall goal of this integration?
- What are the procedural changes need to bring?
- Available and ongoing computer hardware at the organisation
- Integrity with other related system (if any)
- Future Extensions

THE STRUCTURED ANALYSIS

We have decided to follow structured analysis due to the following reasons:

- It makes use of graphical tools such as Data Flow Diagrams, which presents what is being specified in an easy way to understand presentation of the application or its processes.
- The processes are partitioned and labelled, as a result a clear picture of the progression from general to specific in the system flow.
- It is logical rather than physical

The end result of structured analysis produces a structured specification that uses several basic tools such as

- Context Diagram
- Data Flow Diagram
- Process Description
- Data Dictionary

4.2   APPROACH AND METHODOLOGY

Structured analysis is a set of techniques and graphical tools that allow the analyst to develop a new kind of specification that is easily understandable to the users.
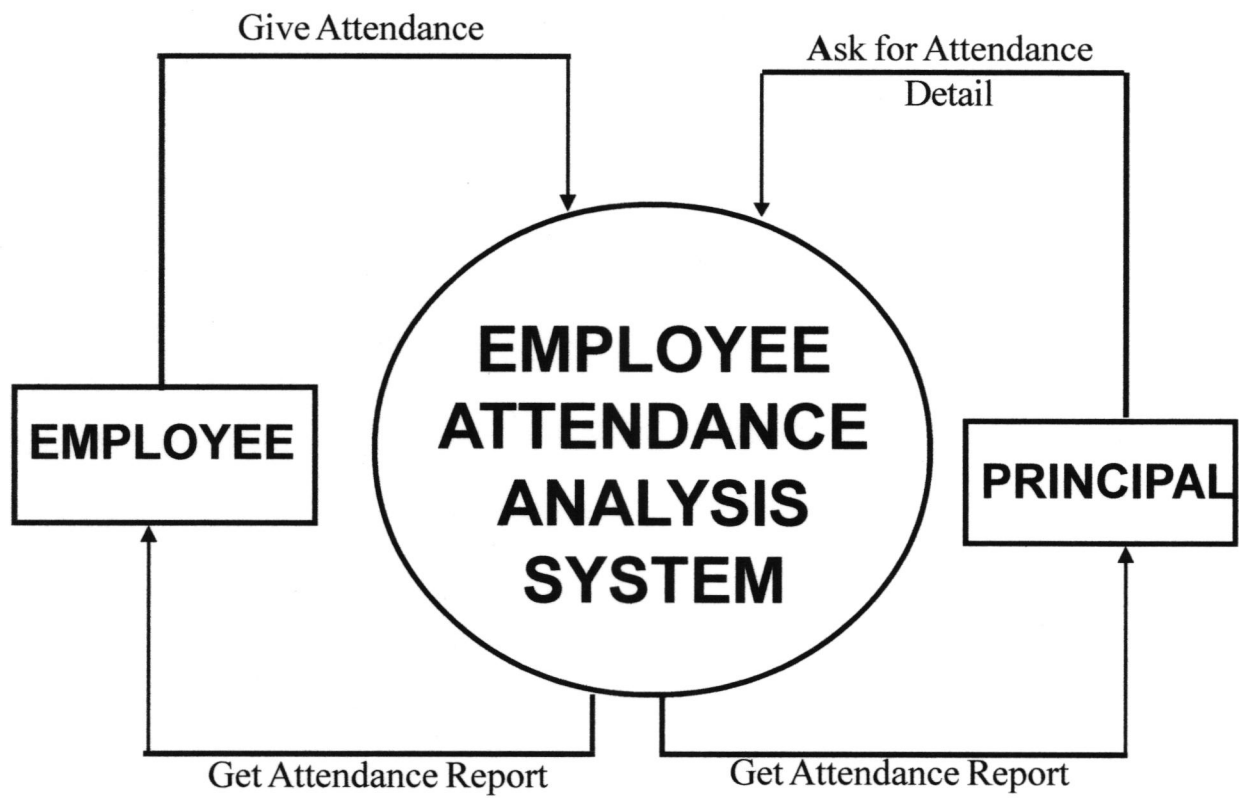
In this phase of the system development a team comprising of the concerned students under the supervision of a guide has conducted an in-depth analysis of the proposed system. The team has

reviewed the areas of information needs the users, data volume, integration requirement etc.

Here, in this phase we present the context diagram and the DFD of the system to conceptualize the proposed system easily. The processes are partitioned so that we have a clear picture of the application under development. To achieve these a rigorous study of the user area has been made, so that no major flaws occur in the later part of the system development.

4.3   CONTEXT DIAGRAM

Context diagram is the starting of the structured analysis. They are constructed to show the highest level model of the system. They are used to represent pictorially the scope or the boundaries to the system. The context diagram of the proposed system is given in the next page.
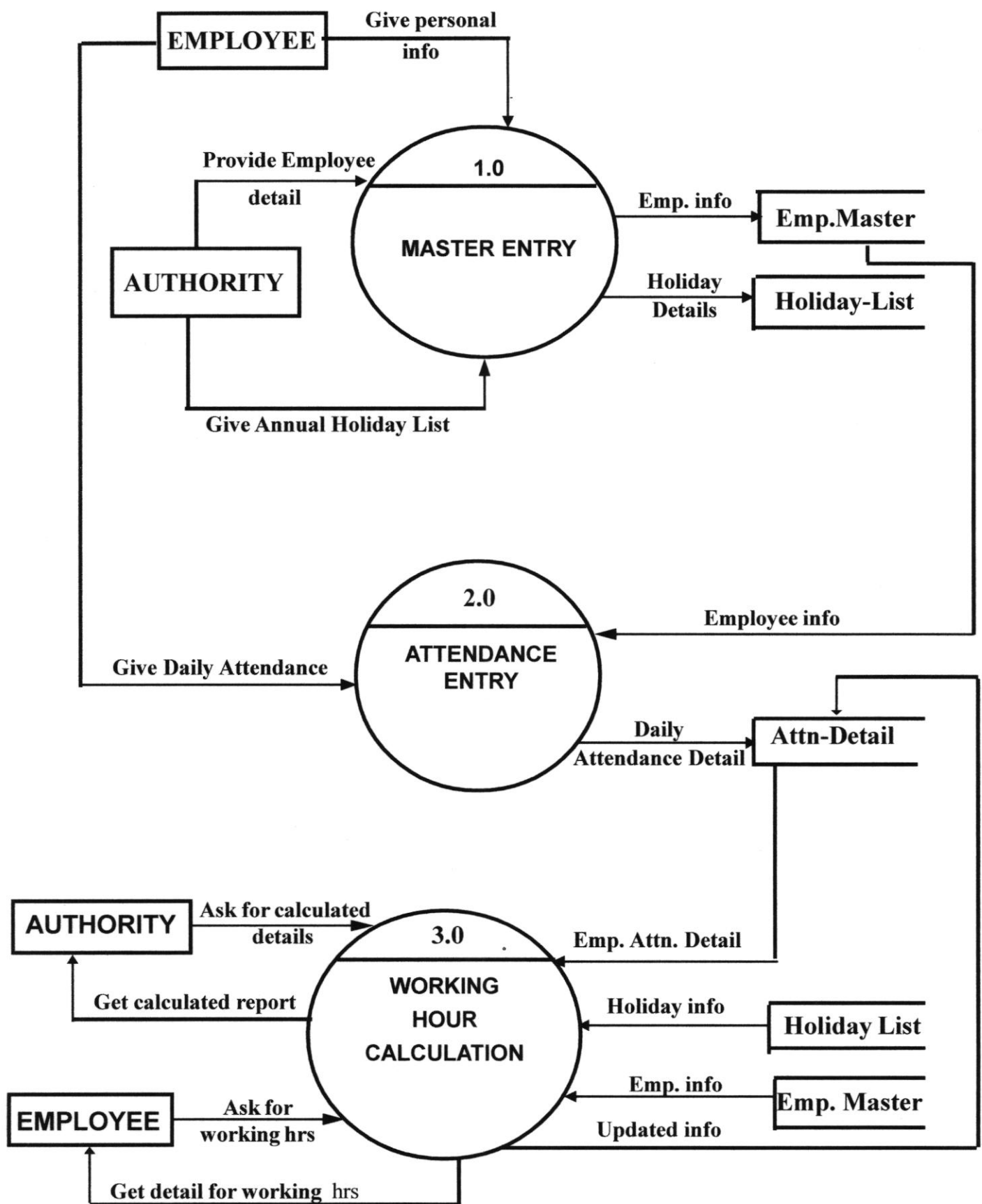
Give Attendance   Ask for Attendance
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EMPLOYEE   **EMPLOYEE ATTENDANCE ANALYSIS SYSTEM**   PRINCIPAL

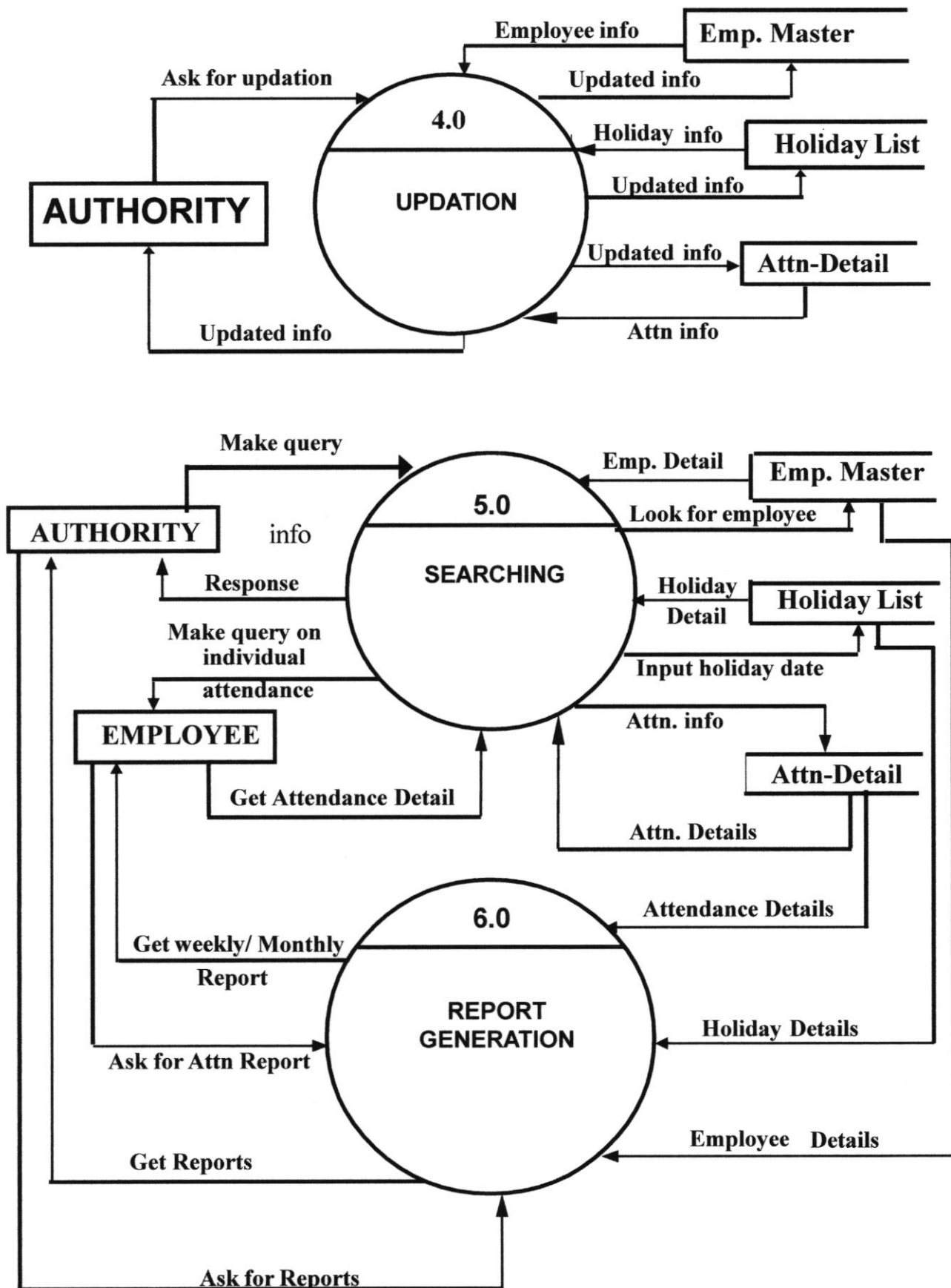Get Attendance Report   Get Attendance Report

Fig. :   Context Diagram

4.4   DATA FLOW DIAGRAM

The data flow diagram (DFD) is one of the most important tool used by the systems analysts. The use of the data flow diagram as modeling tools was popularized by DeMacro (1978), Gane and Sarson (1979) through their structured systems analysis methodologies. They suggested that a data flow diagram should be the first tool used by the systems analyst to model systems components. These components are the systems processes, the data used by these processes, any external entities that interact with the system, and the information flows in the system.

In the next page we present the data flow diagram of the proposed system.

FIG: 1ST LEVEL DFD