CHAPTER 6
AN ADVANCED SYSTEM DESIGN FOR HOSPITAL MANAGEMENT

6.1 INTRODUCTION

Modern science and technology has entered every walk of life with the vision of "Modernization through Computerization". The effect of technological changes has greatly influenced the earlier outlook of hospitals from a couple of doctors aided by a few clinical equipment and attendants in catering to the needs of the patients, to mega health centers where comprehensive treatment is being provided with a team of expert doctors using modern diagnostic equipment, with an overview on the health history of the patients.

Computers play a vital role along with the modern software systems, to handle the voluminous data related to medical history of patient at high speed. This led to the development of Hospital Management Information system. In this work, the development of a system for efficiently managing a hospital is discussed (Figure 6.1). This Hospital Management Database has a speciality in the sense that it is not only a collection of numeric data but also has important graphical information, like patient’s medical signals such as Apex cardiogram, Apex PCG, PCG, ECG, EMG and EEG. The patient’s medical images like CT, MRI etc., can also be stored. These information viz. text information and diagnostic information can be retrieved by doctors as
FIGURE 6.1 BLOCK SCHEMATIC OF THE HOSPITAL MANAGEMENT SYSTEM DESIGN
and when required. Mathialagan et al., (1996) have discussed the Hospital Management system for storing Medical data.

6.2 IMPLEMENTATION OF STORING/DISPLAYING SIGNAL AND IMAGE DETAILS

An efficient software system in C is implemented to acquire and digitize the real time medical signals by using TMS320C30 Processor and a 12-bit ADC card with a polygraph system. The acquired medical signal is fed as an input to grapher software, which produces the graphical representation of the medical signal. The grapher software is specially developed and is integrated with hospital management system. Apart from the above feature, the system can also store the image details like CT, MRI, etc., which are digitized and stored in compressed form (Roos et al., 1988; Wallace 1992; Witten et al., 1987). Hence, the number of bytes required to store signal and image data are greatly reduced, thereby increasing the efficiency of the system.