CHAPTER 3

PROPOSED SYSTEM

3.1 Overview

In this chapter, there will be two main topics that will be covered which are the design of UMP VEEMS and the hardware and software requirements. The two main topics are consisting of four other subtopics.

Subtopic 3.2 will cover on the logical design, Subtopic 3.3 will cover on the interface design, and Subtopic 3.4 will cover on the database design, while the last Subtopic 3.5 will explain on hardware and software requirements.

Overall contents in this chapter will provide reader with the detail information of the method implementation that will be carried out in this project.
3.2 Logical Design

Logical design is a phase to design a logical architecture showing the interrelationships of the logical components of the system. The logical design is more conceptual and abstract than the physical design. In the logical design, developer looks at the logical relationships among the objects (Oracle, 2000).

Figure 3.1 shows the complete context diagram of UMP VEEMS. The components of the system consist of License Plate Recognition (LPR) camera, automatic barrier, GSM modem, monitoring software and database.

![Figure 3.1: Complete Context Diagram of UMP VEEMS](image-url)
The mechanism of UMP VEEMS happened at each guard posts to enter and exit UMP area. The vehicle entry mechanism needs every staffs or students vehicle to be registered on the vehicle registration system to allow access of their vehicle. When a vehicle pass through the guard post, the LPR camera will automatically capture the registration number and sent it to the computer installed with monitoring software at the guard post. The monitoring software installed on the computer will extract and transform the image of captured registration number into alphanumerical values using Optical Character Recognition (OCR) function. The numerical data of registration number will be compared to the database to confirm that the vehicle owner is a registered UMP community. If exist the same data on the database, then the automatic barrier will open. If not, the security officer will check the vehicle’s owner for identification and the barrier will not open automatically.

The vehicle exit mechanism applies the same concept as vehicle entry mechanism where LPR camera will extract the vehicle registration number to be sent to the computer with monitoring software. The difference on exit mechanism is that the vehicle owner will be notified that they have gone out from UMP area via SMS. If the vehicle is driven by other person while exiting UMP, then the vehicle owner can directly know that their vehicle is being driven by other person whether their friends or being driven without permission by stranger. This is a security function that being made in order to prevent car stealing in UMP.