ABSTRACT

Incoming and outgoing vehicle monitoring system is a program which is designed to control the availability of the parking area with its certain capacity. In some places around, there are still some places which run their parking method manually, or even worse, there are also places which do not care about their parking management. The manual method parking is usually done with 2 people or more which are connected by their handy talkies for sharing the availability of the parking field information. There will be a little issue by doing this manual system, such as the limitation of human mind on remembering the amount of incoming and outgoing vehicles at the same time. Therefore, this system should be replaced by the automatic system which brings ease to the parking officers on controlling the parking field to prevent the overflowing amount of vehicles inside the parking field.

This final project system requires some hardwares such as 1 unit of personal computer and 2 units of webcams which each of them are installed in the entrance and exit gate of the parking field. As long as the system is on, the cameras will always monitor any circumstances of the area in front of it simultaneously. If the vehicle passes the camera, system will update the database to inform that there is a detected object passing through the entrance or the exit gate depends on which camera that detects it. If there is no more parking slot in the area, system will notify the user about that, so that the officer can not allow any vehicle to enter the field until the slot is available.

Monitoring system is done using a real time video processing method. The camera will always on and the system will always update the database simultaneously until the user enter the stop command to the system. This system produces the good accuracy value when the Difference Threshold parameter's value is 40000 and Move Threshold parameter's value is 0.

Keywords : *Monitoring System, Video Processing, Real-Time*