ABSTRACT

Motion detection system is a kind of system which can detects motion in the video. The applications of this motion detection such as in determining motion's direction and the amount of motion objects. In motion detection system uses some algorithms to tracking motion object by continue.

This final project researches one of the motion detection system's application which uses frame difference method to calculate amount of motion objects. This system will use tracking algorithm which able to analyze the direction of motion object. The system made to be able to count objects who staying in a room. To be able to do that, previously systems have to be able to learns objects who entering and objects who exit the room. For that reason, the test video will made using webcam placed above the entrance door and it will record the enter and exit objects. There are about 10 test videos with difference object direction which will used to analyze the system. Analysis will be done to an indicator value which having an effect in determining motion direction and also analysis to light intensity to know its influence.

The result of this system is how the system can detecting, tracking and knowing motion direction, and counting the sum of objects who staying in the room with the smallest error level. Examination to indicator value and influence of light intensity is to get the best result. From the test decided the best indicator value is 6 and -6 with the best light intensity at the evening which produce less shadow.

Keywords: *Motion detection, Tracking algorithm, Video, Frame-difference method, Direction of motion object, Amount of object in the room*