

# AUTO WHITE BOARD CLEANING SYSTEM

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## ABSTRACT

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This final year project report revolves around an automated white board cleaning system with description of its design and implementation methods. A DC motor and a beam structure attached to an eraser will be modified on an ordinary small sized (80cm by 80cm) white board. There are several modes of action which the cleaning system is programmed to carry out. First trigger of the system would be when the board is written on. After an interval of 15 minutes, if no more writing on the board the system will be activated automatically. The user would just have to stand back as the eraser is drawn across the board, thus saving the users energy and time. The system is also programmed to automatically activate itself at 6am. This mode of cleaning will prompt water installed on the beam to spray on the board, hence cleaning any residue left from the previous use. Consequently, the eraser will automatically sweep across the board every two hours which is in line with the average intervals between classes. The timer is set to sleep mode at 6pm and will be activated again at 6am.

The last mode of cleaning is activated manually when the user pushes the button which once again sets off the eraser. With this, the user needn't wait for a 15minute interval to write again.

Technically, the white board is equipped with two erasers, one on the left and the other on the right side which is connected to the DC motors. Every side will have its own IT sensor to detect any user's hand writing on either sides of the board. The system is designed to enable each side to work independently from each other. The project is using PIC16F877A to control the process of which. Pins 34 and 35 are for eraser motors whereas pin 36 is for water pump motor. When the C program placed inside the PIC16F877A is activated by the switch, a voltage of 5V will emerge at the output. This voltage is sufficient to trigger the relay so that the erasers will move accordingly. The program in the PIC16F877A runs using IF command function. The program also uses the loop function i.e. DO WHILE function to continuously read input signal and WRITE function to send output voltage in HIGH mode.

Keywords: white board cleaning system, button switches, PIC16F877A, water spray system.