ABSTRACT

Wiper is an essential component that used to remove raindrops or any water from the vehicle's windscreen. The previous system used to activate the wiper manually and the process of pulling up the wiper is difficult to be handled. Thus, this system is proposed to solve these problems. The objectives of this project are to upgrade the older cars system by providing automatic wiping system, to improve the system by using STM32F4xx-discovery board .Most car wipers have a DC motor that controls their action, but the STM32F4xx-discovery does not have any motor, so we are considering LEDs for this application.

As the wiper control system, there are four LEDs and a Push Button on the STM32F4xx-discovery board. These LEDs are orange, green, red, and blue in color. With the Discovery board GPIO pins of STM32F407VG microcontroller will be configured as digital input pins to enable a push button to operate with STM32F4. If you press the user button and hold it for two seconds, the Red LED turns on which indicates the ignition key is positioned at the ACC. In addition, the LEDs will blink, which indicates the wipers are ON.

Initially, the wiper is off. On pressing the user input, Blue, Green, and Orange LEDs blink one at a time with the set frequency. The frequency changes with each alternate key press (key means push button). When the 1st key is pressed, the LED blinks at 1Hz, and when the 2nd key is pressed, the LED blinks at 4 Hz , and when the 3rd key is pressed, the LED blinks 8Hz . The LED glow pattern stops after the fourth press; the wiper action begins after the second press onwards as explained in step 2.If the user button is pressed and held for 2 seconds, the red LED is off means wiper system gets turn off.