Parking Assistant Using STM32

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Summer 2022 Intake

Matriculation Number : 11018044

Problem Statement

- While parking the car in Reverse Mode, Most of the crashes happens.

- The cars are damaged for very small reason.

- The cost of the parts are expensive, leading to the financial loss to the car owners.

Solution

- To avoid all of these Issues, A simple Parking assistant can be used.
- A parking assistant can help you when the car can bump while in reverse mode.
- To solve the issue, IR sensor can be used to detect the distance and warn the driver.

Use of Components

- IR sensor

- Buzzer

- OLED Display

- Jumpers

- STM32F407 Discovery Board

- Jumpers

- Breadboard

Working Of the Project

- IR sensor will be continuously on.

- Development Board will take digital read from the IR Sensor.

- For the communication with the Sensor, I2C protocol is used.

- As the Sensor reads '0', "!!!Warning!!!" message will be displayed on the OLED.

- Also, Buzzer will buzz.

- As the Sensor read '1', OLED will display "Go Back" message on the OLED.

Components Specifications

- IR Sensor
  - To Interface IR with STM32 Board, ReadPin command has been used
- OLED
  - To Interface OLED, SSD1306 library has been used.
- Buzzer
  - Buzzer can be operated by toggling the pin.

Topics Covered in the Project

- Use of Sensor
- I2C Communication Protocol
- Real-life application

Thank You