DIRT DEFENDER CEILING FAN

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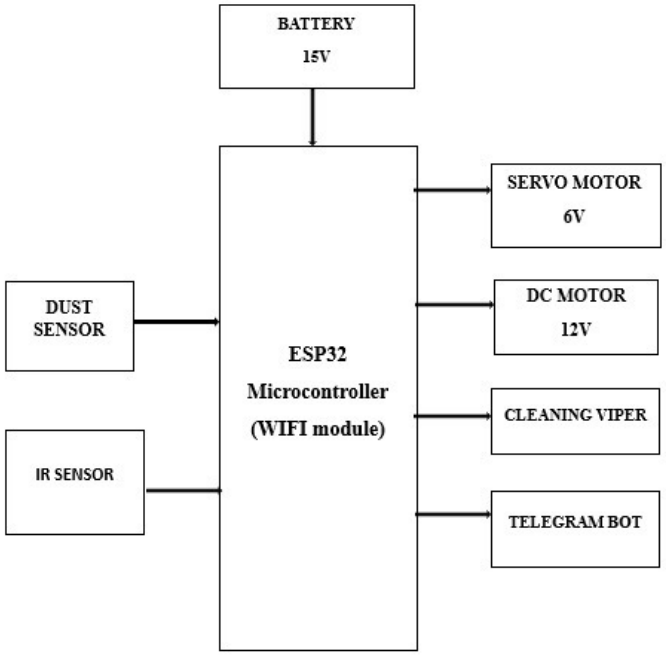
Overview

Summary of Stage-I

- Cleaning Mechanism is Activated and it notifies us through telegram bot
- We can give instructions like start and stop the cleaning on telegram

Implementation

- There are three modules implemented
- 1. Sensor Module
- 2. Cleaning Mechanism
- 3. Telegram bot



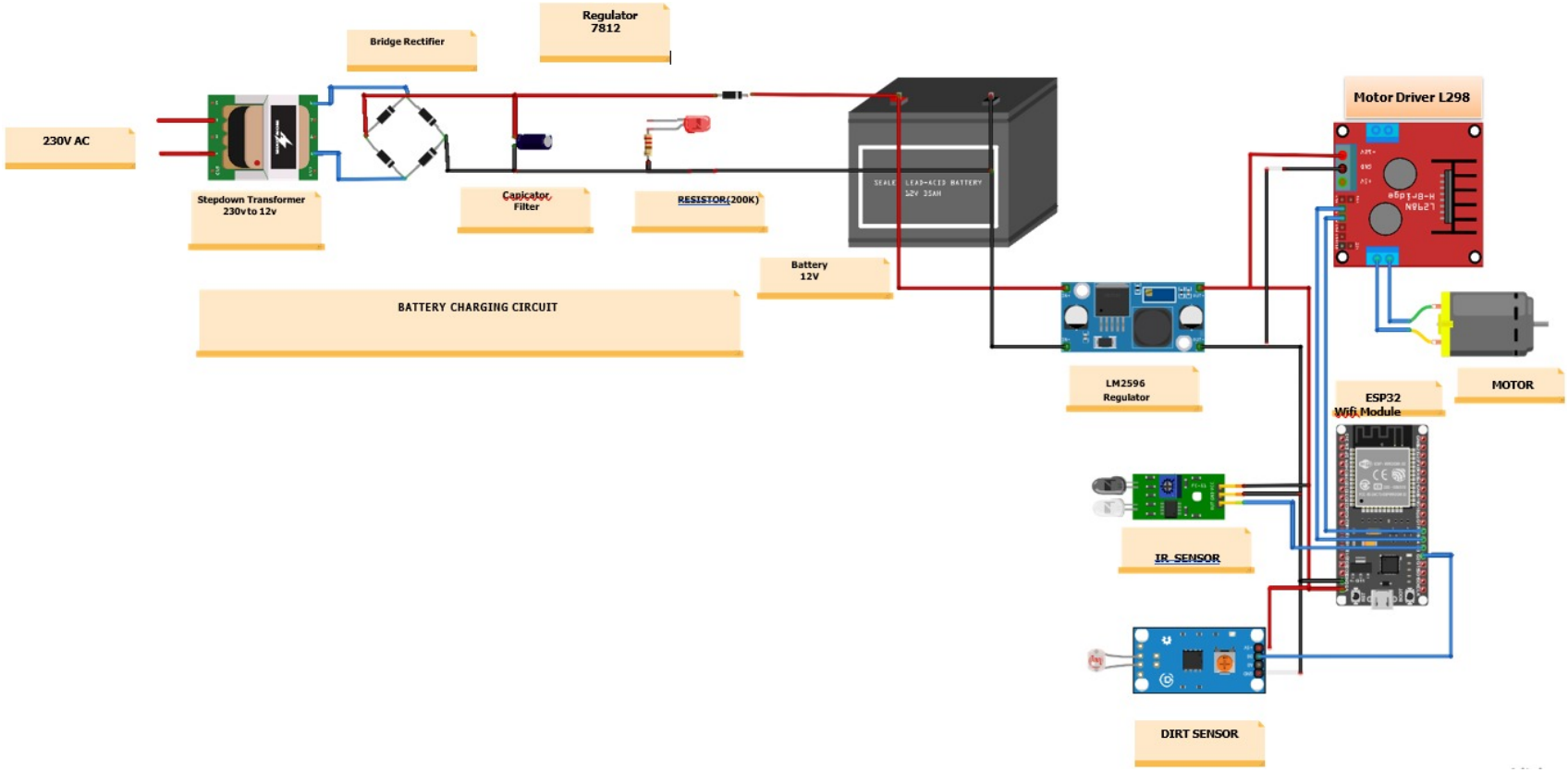


Figure: Circuit Diagram

Automated Mechanism

- **ESP32(Wifi Module):** ESP32 microcontroller can be used for making a dirt defender ceiling fan by integrating motor control functions, sensor inputs(dirt sensors and proximity sensors) and wifi connectivity. ESP32 can execute algorithms to activate the cleaning mechanism based on sensor readings.
- **Proximity Sensor:** When the proximity sensor detects the edge, it can trigger an action to stop the movement.
- **Dirt Sensor or IR Sensor:** Dirt Sensor is used to detect the accumulation of dust on the fan blades. When it detects a certain threshold of dirt, it triggers the self-cleaning mechanism.
- **Servo Motor:** The servo motor is programmed to initiate cleaning actions by integrating it with arduino.
- **DC Motor:** DC Motors are used to move wipers that clean the fan blades.

Manual Mechanism

- **Telegram Chatbot:** Users send commands or requests like cleannow to the bot and ChatId is used for interaction between users and the dirt defender system via the telegram bot.
  - cleannow to start or turn on cleaning.
  - cleanstop to stop or turn off cleaning.

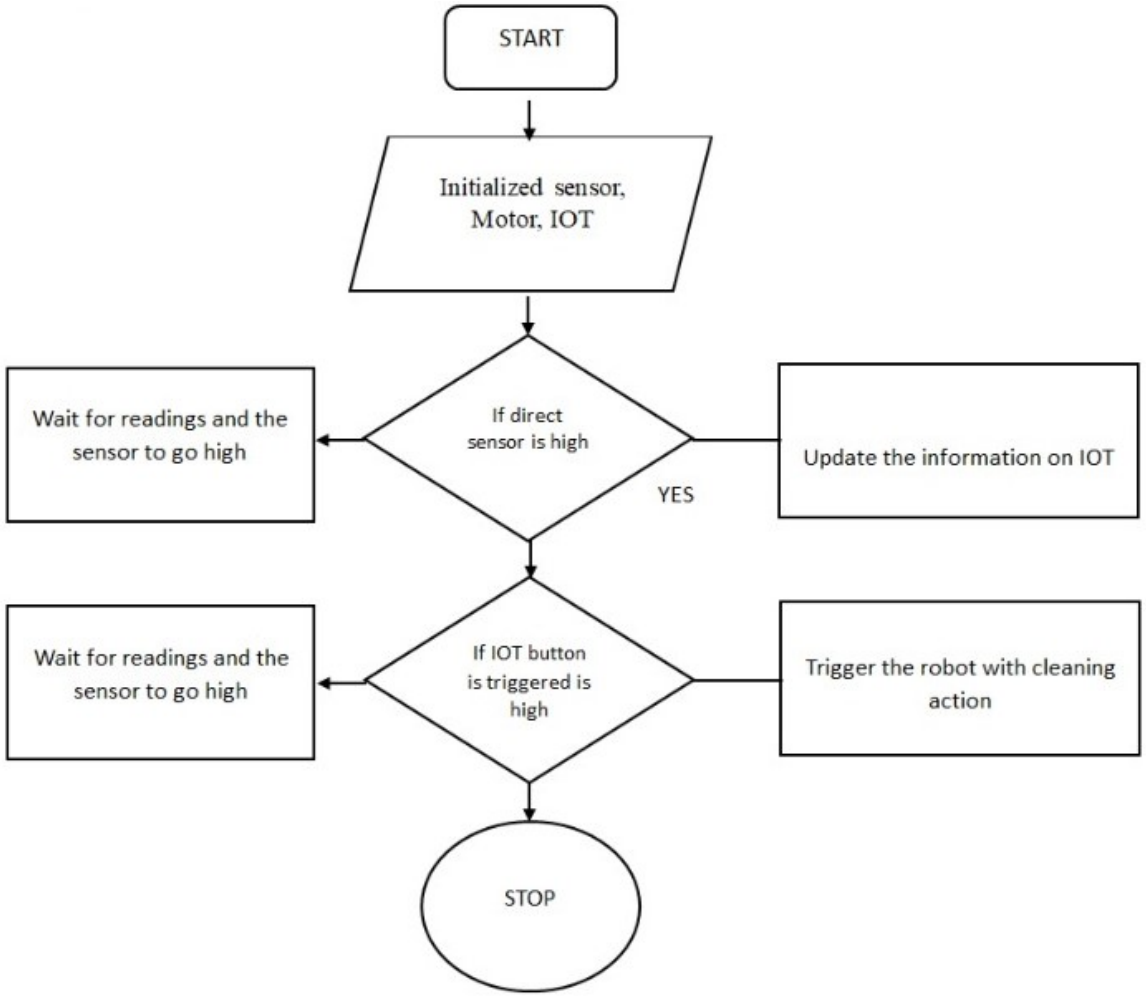


Figure: Work Flow

Functionality of the projects

- Automated dust detection triggering cleaning process.
- TUser-friendly mobile app for easy control.
- Effective cleaning mechanism with integrated dust collection..

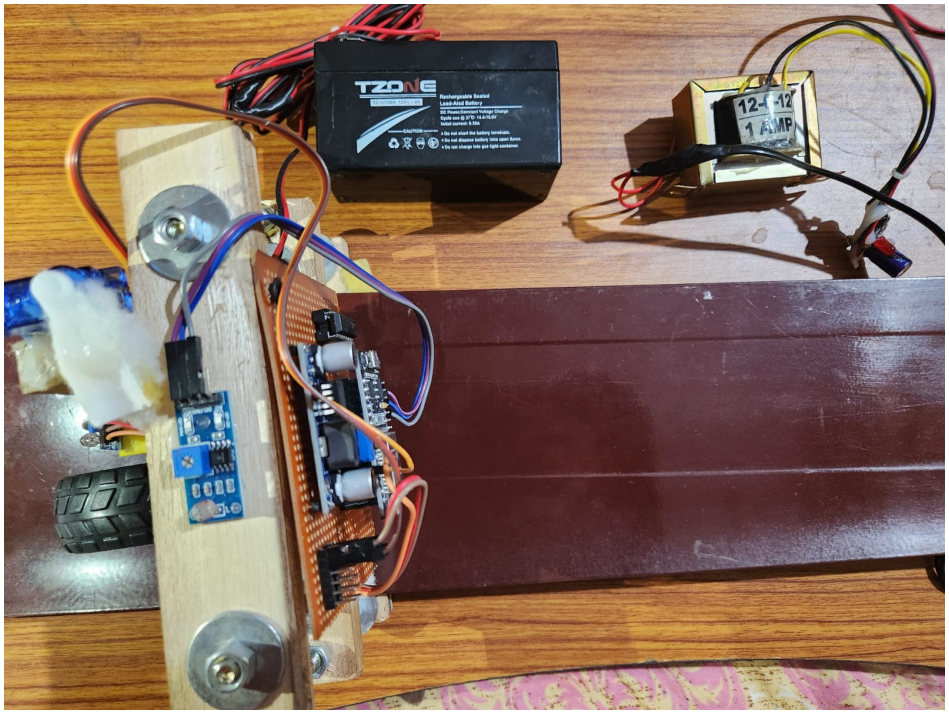


Figure: Prototype

- The project begins with sensor and IoT initialization, ensuring a structured setup.
- IoT triggers cleaning upon high sensor signal, ensuring timely and reliable activation.
- Cleaning mechanism is activated and notification got in Telegram bot.

Figure: Output

Conclusion

- Project : Not Completed, pending with forward and backward motion and automated triggerring
- Publication : Completed but not published

Thank you