1. PROJECT TITLE:

Smart Rescue Robot with Live Streaming and Vital Sign Monitoring Using ESP32-CAM and MAX30001

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2. AIM:

To design and build a compact rescue robot capable of navigating through disaster zones, providing live video feed, gripping and rescuing individuals using a jaw mechanism, and monitoring their vital signs (ECG, heart rate, and respiration) using the MAX30001 sensor.

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3. MATERIAL / COMPONENTS NEEDED:

- **ESP32-CAM** (for live video streaming and Wi-Fi control)
- **MAX30001** ECG & Respiration Monitoring Sensor
- **DC Gear Motors** (for robot movement)
- **Wheels and Chassis**
- **Li-ion Battery Pack** or Rechargeable Power Source
- **Jumper Wires, Breadboard / PCB**

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4. APPLICATION / USES:

- Used in **disaster-struck areas** (earthquakes, landslides) to locate and assist victims.
- Provides **real-time video streaming** for remote monitoring and control.
- Measures and transmits **vital signs** of trapped or injured individuals.
- Helpful for **search and rescue teams**, reducing risk to human rescuers.
- Can be used in **military rescue**, **emergency response**, or **health monitoring** in remote areas.

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5. DECLARATION:

I hereby declare that this project titled **“Smart Rescue Robot with Live Streaming and Vital Sign Monitoring”** is my original work. It has been carried out for academic and learning purposes. The components used and the design have been implemented by me with the intention of promoting smart rescue systems using embedded technology.