

# Smart Vision for Visually impaired

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## Problem Statement:

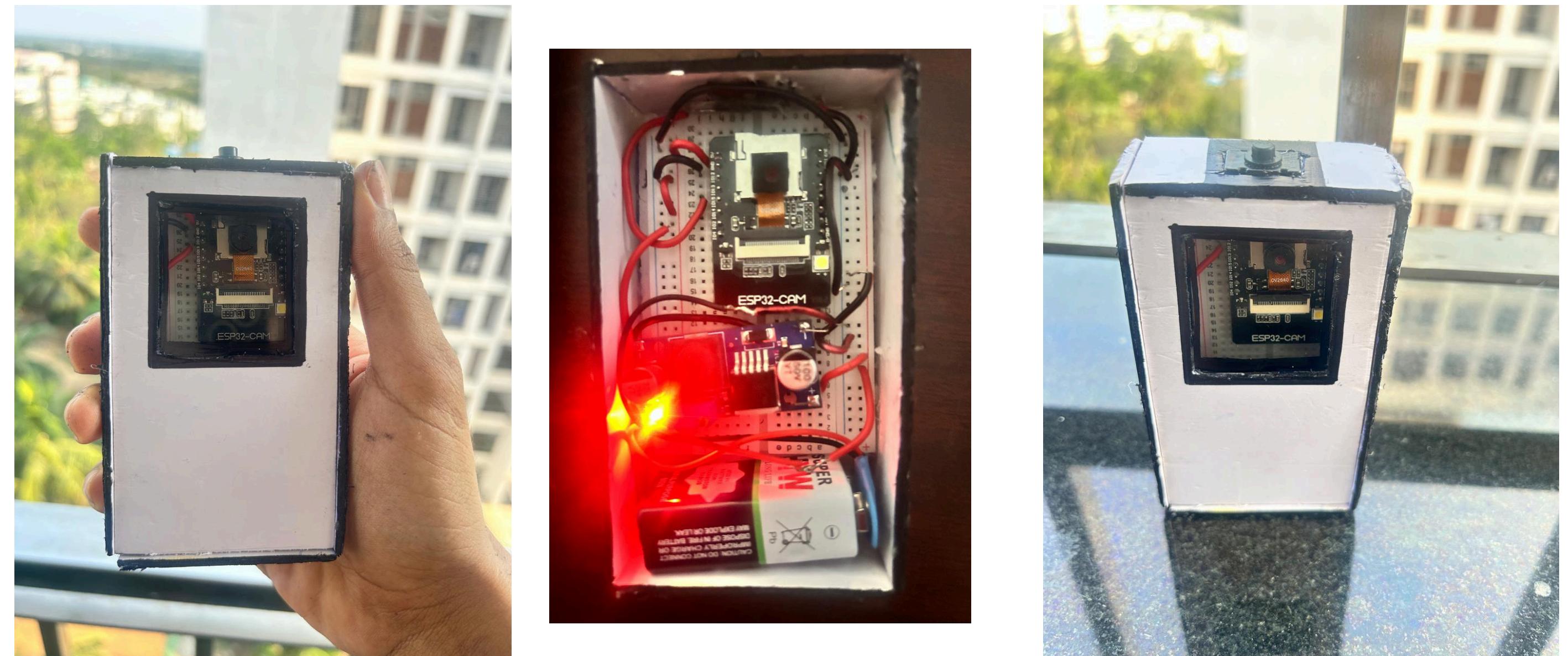
Blind and visually impaired individuals often face significant challenges in independently identifying objects, locating obstacles, and accessing printed text. This project aims to address these challenges by designing a prototype that enables blind individuals to "see" without sight. The prototype focuses on empowering users to identify and locate objects, avoid obstacles, and read textual content without relying on Braille. With this innovation, blind individuals will gain greater independence, such as reading restaurant menus or books not written in Braille, thereby enhancing their quality of life.



## Objectives:

- Capture and describe image .Utilise the camera to click the image of objects ,scenes or documents.
- Provide Environmental Awareness: Detect and describe the surrounding environment, enhancing situational awareness.
- Facilitate Independent Reading: Enable users to read printed text such as books or menus directly, without relying on braille translations.
- Deliver Audio Feedback: Convert the analyzed content into audio output for real-time user feedback.

## Prototype



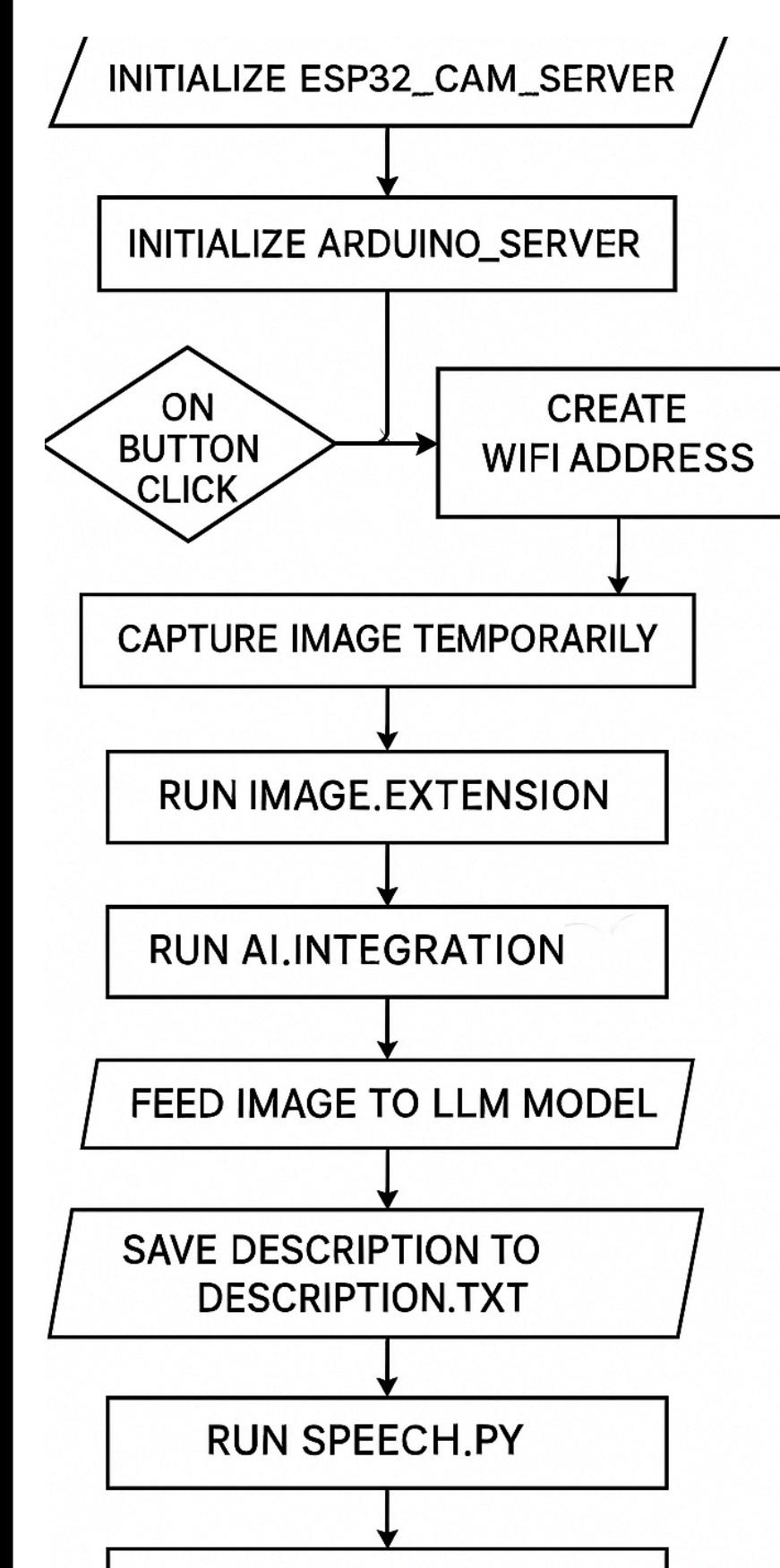
## Concept Design:



## Bill of Materials:

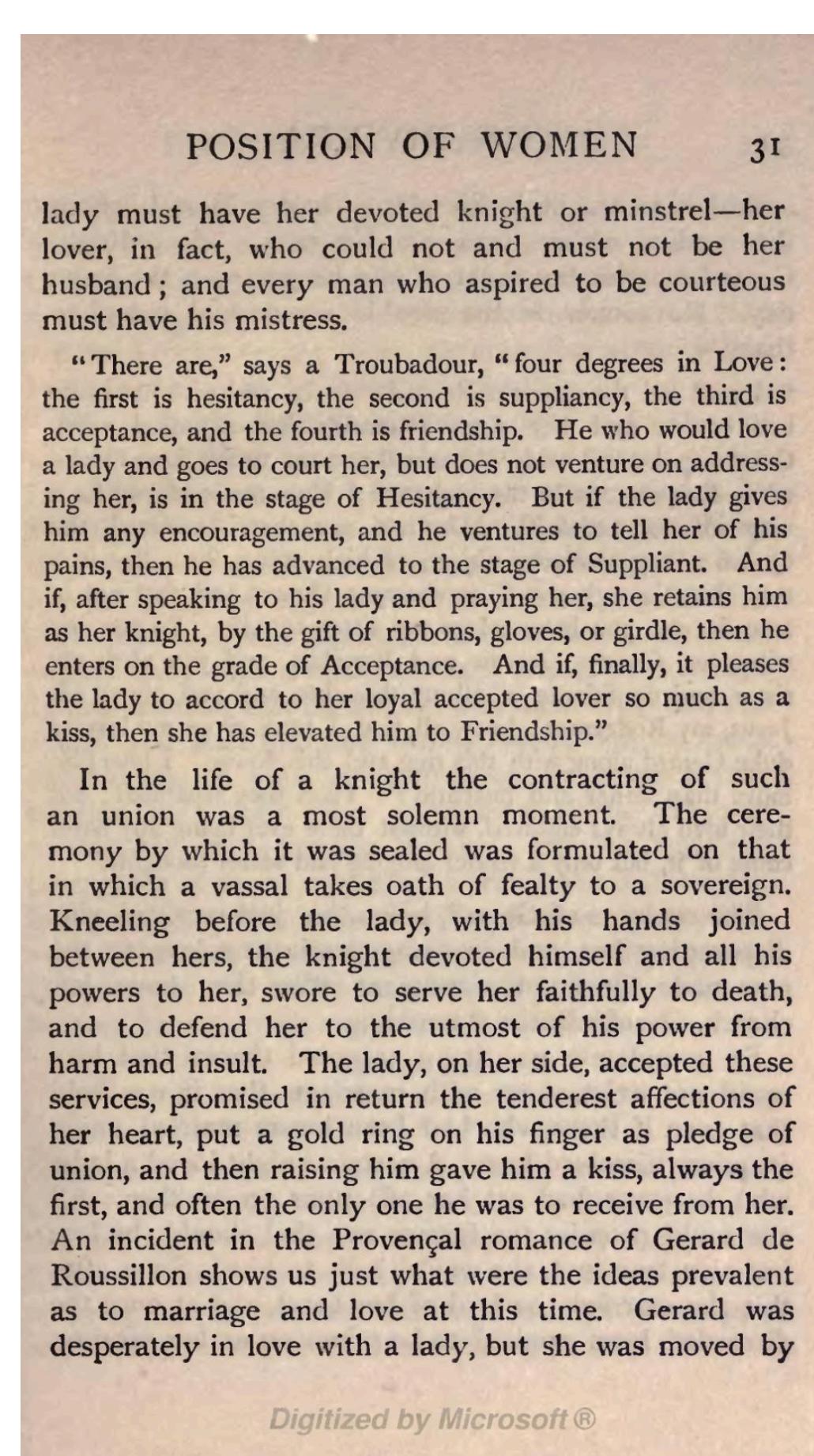
Description of Component	Specification	Quantity	Unit price	Total Cost (INR)
Buzzer	Voltage Rating (V): 12, Max. Operating Current (mA): 50mA, Switch Type: Momentary	1	20	20
ESP 32 Cam with wifi	Input Voltage (Volts): 5V, Operating Temperature (°C): -20 – 85, SPI Flash: Default 32Mbit	1	730	730
Buzzer	Rated Voltage: 5VDC, Operating Voltage: 5 Vol DC Max, Rated Current: 40mA	1	20	20
GPT 4.0 mini	Speaker	1	500	500
Battery(3.7V)	Resistance: 8 Ohm, Radius: 3.3cm	1	45	45
Battery(3.7V)	Voltage: 3.7V, Capacity: 1500mAh	1	250	250
Distance Sensor	Supply Current(A): 1mA, Communication Protocol: I2C, protocol Shapping Weight: 0.01 kg	1	200	200
Wires	Cable Length (m): 180, Conductor Construction: 7/0.25TS, Inner Diameter (ID) (mm): 1.9	1	45	45
ESP32 developer board	Based On: ESP32 Based, Flash Memory (MB): 2.5Mbit, Compatibility: ESP32 CAM Development Board	1	100	100
Grand Total				1950

## Pseudocode:



## References:

- A review-based study on different Text-to-Speech technologiesMd. Jalal Uddin Chowdhury, Ashab Hussan
- Google Gemini as a next generation AI educational tool: a review emerging educational technologyMuhammad Imran
- Introducing Gemini: our largest and most capable AI model
- Humane Ai Pin - InnoGlove Ai Embrace Alex Mathew



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Okay, I see a man sitting at a desk. He appears to be middle-aged, with thinning dark hair and glasses. He's wearing a dark gray, long-sleeved button-down shirt. He has his arms folded on the desk, and he's looking directly at the camera. There is a piece of white paper in front of him on the desk. The wall behind him is plain white, and there is a gray metal box mounted on it, possibly an electrical panel or similar utility box. I can't make out any text or other details on the box.

The room appears to be simply furnished, possibly an office.

## Text Reading Result



This page talks about how women were viewed in the age of knights and chivalry, focusing on love and devotion. It describes the journey of a knight earning a lady's affection through four stages. First, he feels hesitant, admiring her from a distance. Then, encouraged by her kindness, he expresses his love, entering the stage of supplication. If she accepts him, she offers a token, like a ribbon, as a sign of her trust. Finally, if their bond grows deeper, she elevates him to friendship, symbolized by a kiss. It also describes a heartfelt ritual where a knight kneels before his lady, pledging to protect and serve her with his life. In return, the lady offers her love and loyalty, sealing the bond with a ring and a kiss. The page ends with a story about Gerard de Roussillon, a knight deeply in love with a lady, reflecting how love was often about patience, honor, and devotion. This text paints a vivid picture of romance rooted in respect and tradition.