SOCIAL INNOVATION IN PRACTICE (SIP)

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NEED STATEMENT

We usually see vehicles get parked in the no parking areas which increases traffic drastically and police have to manually capture vehicles numberplate as this is not possible everytime.So we thought of "UNAUTHORISED PARKING IDENTIFIER(UPI)".

UNAUTHORISED PARKING IDENTIFIER (UPI)

PROBLEM STATEMENT

To avoid parking of vehicles in no parking zone. This device detects the vehicle number plates through the camera .later on, sends the message to the respective email regarding the fine by using database, this reduces the traffic and saves valuable time , fuel and soon.

ABSTRACT

The Traffic in the metropolitan urban cities plays an essential part in road problems. Mainly no-parking areas are the main concern and it always leads to the traffic problem. A regular monitoring system is needed to monitor the no parking zones. This project proposes an "Unauthorised parking identifier (UPI)" with the help of number plate detection using OpenCV library. Cameras are used to get the images of vehicles parked . License numbers which are detected, automatically send the EMAIL to the registered details after waiting for 5 minutes regarding the Echallan as he/she violated the regulation proposed by the respective government.

INTRODUCTION

In India particularly with such an oversized population of over 4 billion, as everyone from rural to urban was aspiring for superior opportunities and benefits made India have heavy traffic congestion on its roads. The valuable time of every working professional is being wasted on the roads. It also increases air pollution, travel time, fuel cost, energy consumption, which in some ways affects the quality of the services of the organizations and mankind. Basically, there are many reasons for the traffic congestion out of them one major problem is due to parking of a vehicle in no parking areas.

EXISTING SOLUTIONS

- DISPLAYING BOARDS
- WARNING SPEAKERS
- CC CAMERAS
- WRONG PARKING ALARMS
- MANUAL VEHICLE NUMBERPLATE CAPTURING

DISPLAYING BOARDS

Many places there are displayed as non parking zone.

Advantages:

- It is very less cost. It can be offerby anyone.While this problem is troublesome, advertisers have found a way exploit it for the benefit of their clients.

Drawbacks:

- As people watch regularly, they may ignore it.
- It may fall due to wind storms.

WARNING SPEAKERS

These are normal speakers

Advantages:

- The speakers announces as it is prohibited to park the vehicle.
- It costs low.

Drawbacks:

- They may damage due to always warning and power consumption is also more.
- It causes disturbance to the surroundings.

CC CAMERA'S

When a vehicle is parked at prohibited area then cc cameras take footage.

Advantages:

- It also secure the vehicles.

Disadvantages:

- It require a human to observe the footage.
- Cc cameras costs very high.

WRONG PARKING ALARMS

It is the device which works on sensors and Arduino.

Advantages:

- When the vehicle approaches it warn the driver.

Drawbacks:

- It costs high in price with basic features.

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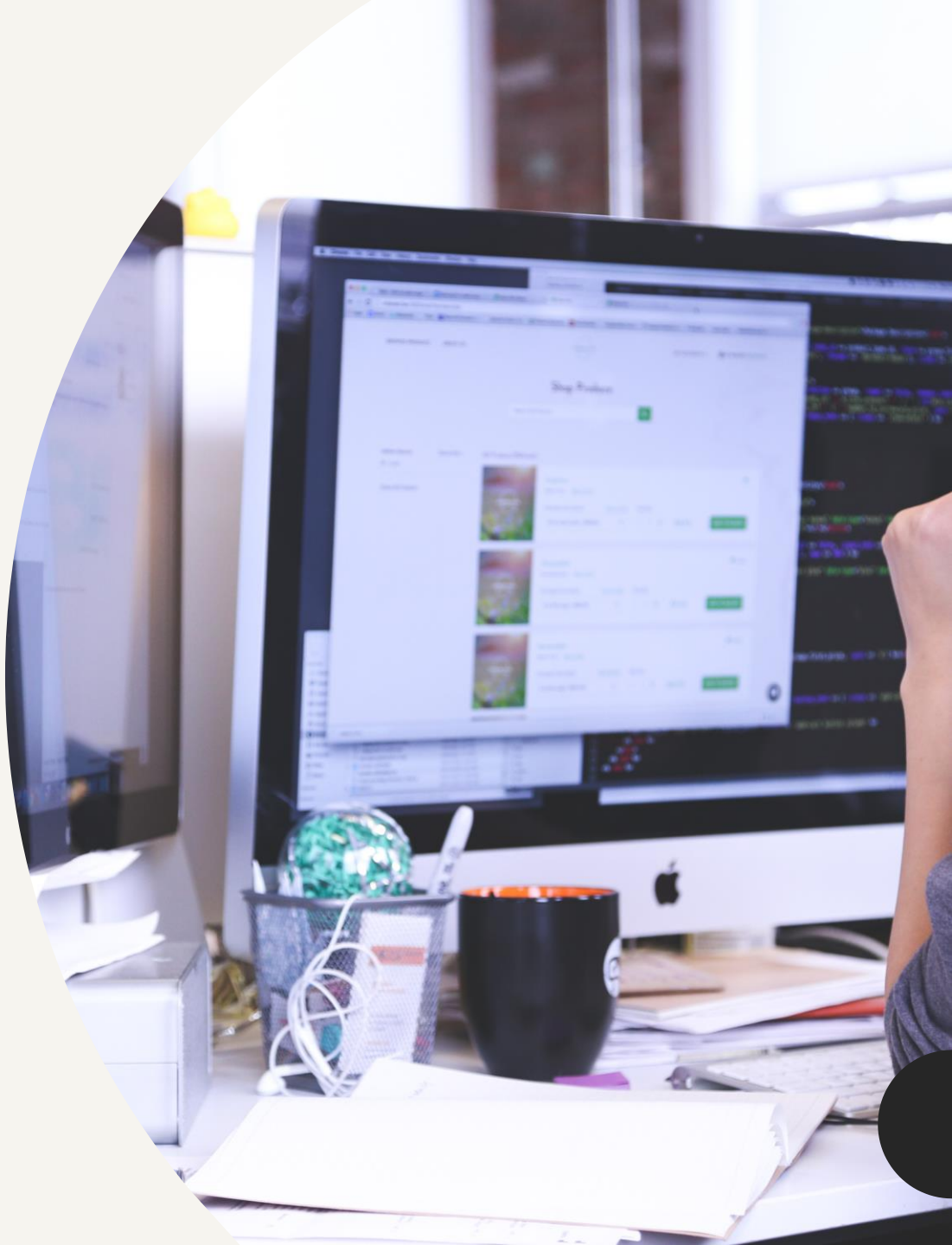
PROPOSED SOLUTION

"UNAUTHORISED PARKING IDENTIFIER(UPI)"

WORKING

- Initially Camera is taken to detect the license plate of a vehicle
- The camera is integrated with the python code and a few libraries like OpenCV which performs the image acquisition.
- The file of the licenseplate is retrained with license plate images Datasets of Indian format.
- After the exact image of license plate is detected, the image processing like image gray conversion, setting upscale
- The processed image is sent for the extraction of characters using the GoogleVisionAPI, later on the extracted characters are sent to the database.
- Wait for 5 mins ,if the vehicle is not removed the pic of vehicle number plate is send to respective EMAIL

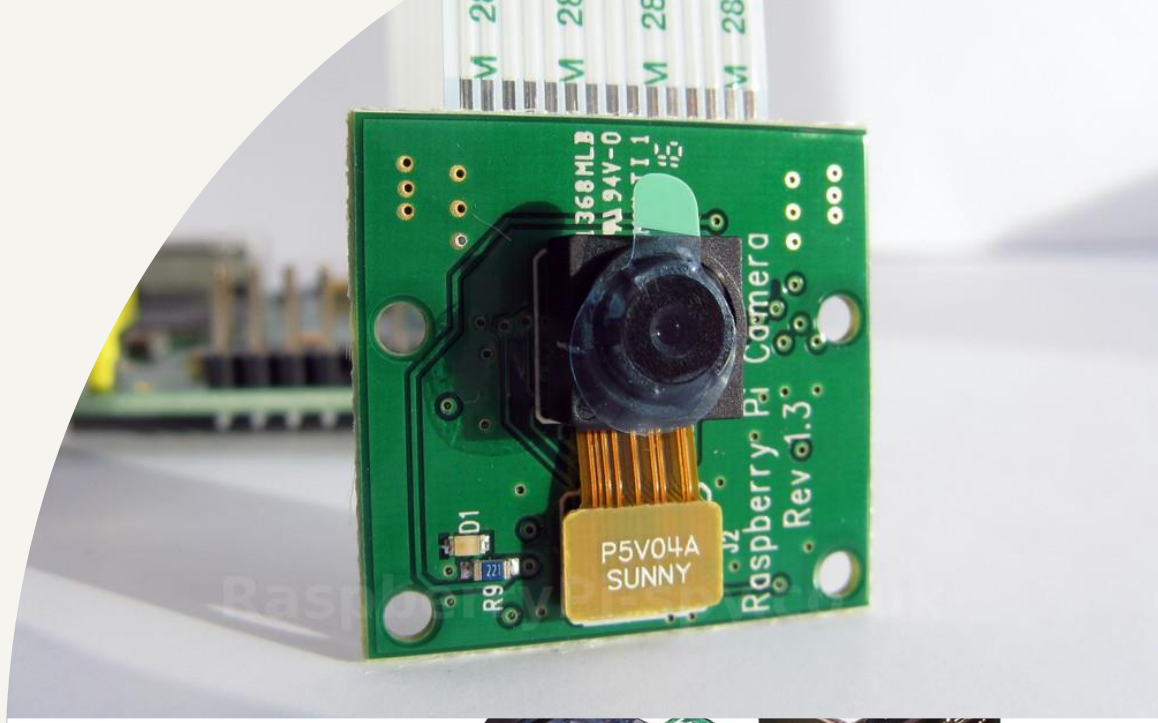


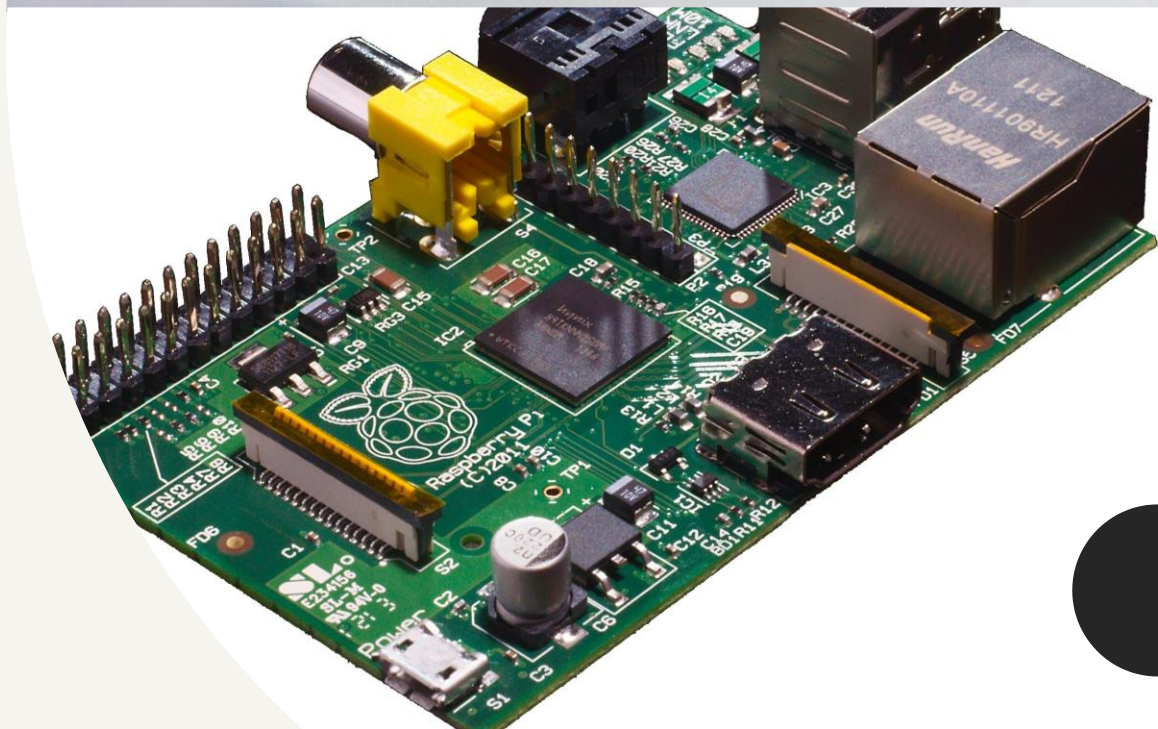
COMPONENTS

- Raspberry pi
- Pi Cam
- RJ45 Ethernet Cable
- Micro USB Cable with Adapter
- IR Sensor

SOFTWARE REQUIREMENT

- Python IDE
- Google vision API
- Open CV Module

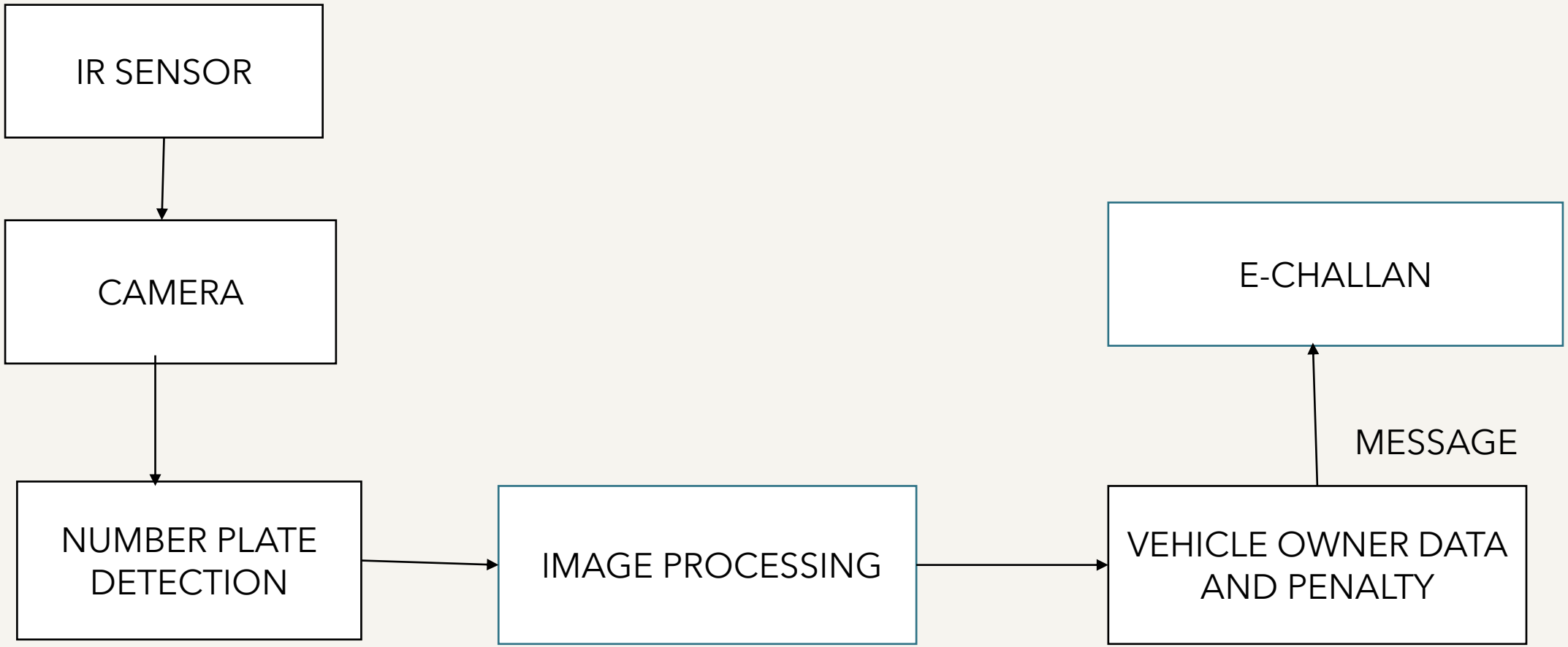




ADVANTAGES

- The aim behind this idea is to provide a simple way to use every innovation of traffic management and is used to defend the parking violation concern.
- It saves the valuable time of every working professional, which is being wasted on the roads.
- It also decreases air pollution, travel time, fuel cost, energy consumption.
- By this the police need not to capture the vehicles numberplate manually.

BLOCK DIAGRAM



CONCLUSION

Road transportation plays a crucial role in human daily life. Maintaining no parking areas is an essential part of controlling traffic in urban areas since these vehicles consuming a roadside place and creates a congested way to moving vehicles. To resolve this issue, a complete monitoring system is needed to be installed in non-parking zones. The proposed "UNAUTHORIZED PARKING IDENTIFIER(UPI)" system reflects the reduction of vehicle count in no parking zones, as a result no traffic.


Thank You
For being patient and listening to us