

Cash less Toll System Using Rppide

Dr. Dola Sanjay.S¹, Ch.Lakshmi², G.Jayachandra², G. Divya Rupini², K.
Ratnakumar², V Kalpana³

Professor, Department Of Ece, Ramachandra College Of Engineering, Andhra Pradesh, India.

Scholars, Department Of Ece, Ramachandra College Of Engineering, Andhra Pradesh, India.

assoc. Professor, Department Of Mba, Chadalwada College Of Engineering, Andhra Pradesh, India.

Corresponding Auther; Dr. Dola Sanjay.S

Abstract: It Is An Automatic Toll Door System Utilizing Raspberry Pi 3 Is Utilized For Gathering Charge Consequently. An Id Will Be Allotted To Each Vehicle. This Will Be Appointed By Rto Or Movement Overseeing Specialist. As Per This Number We Will Store, All Essential Data And Also The Sum He Has Paid Ahead Of Time For The Toll Gathering Pre-User Will Be Deliberately Passed At Toll Accumulation Focus. At Whatever Point The Vehicle Passes The Toll Plaza, The Assessment Sum Will Be Deducted From His Prepaid Adjust. As Vehicles Need Not Wait In A Line, This Means Reducing Traffic Clog At Toll Squares And Aides In Lower Fuel Utilization. In Our Project The Wi-Fi Is Installed At The Toll Gate, And That Wi-Fi Is Connected To The Vehicle Travelling By, Once It Reaches Near The Toll Gate. Every Vehicle Is Provided With A Specific User Id Which Will Be Permanently Linked Up To The Vehicle Particulars. The Incoming Vehicle's Id Is Been Recognized By The Toll System And That Will Be Stored With The Number Of Times The Vehicle Passes Through The Same Toll. That Vehicle Id Information Will Be Checked With The Database Consisting Of The Vehicle Details Including The Device Id And The Details Of The Transaction Is Intimated To The User's Mobile Through Way2sms Technology.

Keywords: Raspberry Pi And Pythonide Platform

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I. Introduction

Mechanized Toll Accumulation Framework Utilizing Wi-Fi Mark Rises As A Persuading Reaction For The Manual Toll Gathering Technique Utilized At Tollgates. Time And Suitability Incorporate Need Of Present Day. With A Specific End Goal To Defeat The Real Issues Of Vehicle Blockage And Time Utilization Wi-Fi Network Is Utilized. With The Development Between State Vehicles And Merchandise, There Is Ascend In The Quantity Of Toll Streets And Extensions Which General Builds The Heap On Parkway Streets.

The Best Possible Accumulation Of Toll Expenses Can Produce A Colossal Quantum Of Assets For The Support Of Maturing Extensions And The Vast Street Organize. We Need To Improve The Toll Evaluate Gathering Structure And To Diminish The Action At Toll Charge Stations We Will Develop A System Called No Queue Toll Tax Collection System. Thusly, The New Technique Is Truly Required To Change The Issue Of Blockages. Computerized Toll Accumulation Framework Is One Of The Strategies To Illuminate The Above Conditions.

Mechanized Framework Is Made Out Of A Few Subsystems. The Wi-Fi Installation, Pc Database, Control Supply, Microcontroller, Engine And Derived Gadget Are Incorporated. Mechanized Framework Can Bring The Few Segments For Toll Entryways As Sparing Time And Diminishing The Human Interference. Wi-Fi Hotspot Is Set At The Toll Entryway On Each And Every Track, Where Vehicles Are Passed Pre-User Contains A Wi-Fi Module, Which Goes About As Both Transmitter And Collector Of Wi-Fi Signals. The Pre-User Creates The Flag To Get The Information From Tag. They Get Signals Send To The Pc Framework Which Contains Graphical User Interface (Gui) And The Database Of All Clients. The Id Number From The Label Checks With The Recorded Database And Reasons The Toll Impose. The Pc And Microcontroller Are Associated With Usb Link. The Microcontroller Will Show The Measure Of Stores On Lcd And The Door Will Open. The Ir Sensor Detects The Vehicle Movement For Shutting Door Consequently.

II. Motivation

Unable To Keep Themselves Waiting, People Suddenly Shifts Between The Lanes In Order To Move Early And Clear Their Toll Fare, Accidents May Occur. In Recent Days, Fastag System Is Been Introduced To Eradicate Such Errors And Problems But Is Not Implemented In Most Of The Toll Gates And Is In Testing

Stage. With The Growth In The Number Of Vehicles The Need For Expansive Roads Catering To Thousands Of Vehicles Moving Across India Has Become Inevitable. However, Considering The Present Situation The Current Toll System Has Several Drawbacks. Due To The Limited Number Of Toll Booths And Slow Collection Process, The Average Waiting Time Per Vehicle Is 10 Minutes. This Results In Loses Worth Thousands Of Cores Of Rupees In Terms Of Fuel Wastage. This Long Wait Time Often Results In Drivers Getting Irritated Resulting In Verbal Spats And Physical Fights Among People And The Toll Attendants. Several Such Incidents Have Been Reported In The Press With Some Of These Fights Even Resulting In The Death Of The Toll Plaza Attendants. In Addition, There Are Numerous Cases Of Toll Plaza Accidents Which Happen Due To The Sudden Lane Changing By Drivers For Faster Clearance And Avoid Long Waiting Time.



Fig: Toll Plaza

III. System Design Description

With The Growth In The Number Of Vehicles The Need For Expansive Roads Catering To Thousands Of Vehicles Moving Across India Has Become Inevitable. However, Considering The Present Situation The Current Toll System Has Several Drawbacks. Due To The Limited Number Of Toll Booths And Slow Collection Process, The Average Waiting Time Per Vehicle Is 10 Minutes. This Results In Loses Worth Thousands Of Cores Of Rupees In Terms Of Fuel Wastage. This Long Wait Time Often Results In Drivers Getting Irritated Resulting In Verbal Spats And Physical Fights Among People And The Toll Attendants. Several Such Incidents Have Been Reported In The Press With Some Of These Fights Even Resulting In The Death Of The Toll Plaza Attendants. In Addition, There Are Numerous Cases Of Toll Plaza Accidents Which Happen Due To The Sudden Lane Changing By Drivers For Faster Clearance.

This Venture Manages The Improvement Of Methodology Took After By Travelers To Pay Toll At Toll Accumulation Stalls, Such As Making It Computerized, Vehicle Burglary Identification And So Forth. Every One Of These Exercises Are Done Utilizing Wi-Fi Alongside Raspberry Pi3. Therefore Sparing The Endeavors Of Conveying Cash And Records Physically. Wi-Fi Hotspot Is Set At The Toll Entryway On Each And Every Column Where Vehicles Are Passed. The Pre-User Contains A Wi-Fi Module, That Connects To The Hotspot. They Got Signals Are Send To The Pc Framework Which Contains Graphical User Interface (Gui) And The Database Of All Clients. The Id Number From The Label Checks With The Recorded Database And Reasons The Toll Impose. As Per The Number Of Times The Vehicle Passes Through That Toll, The Bill Will Be Generated And The Amount Will Be Deducted. Each Wi-Fi Module Will Be Connected With A Prepaid Record That Ought To Be Associated With Database Of The Toll Entryway Square. It Is Essential For The Clients To Keep Up The Base Adjust In Their Particular Record.

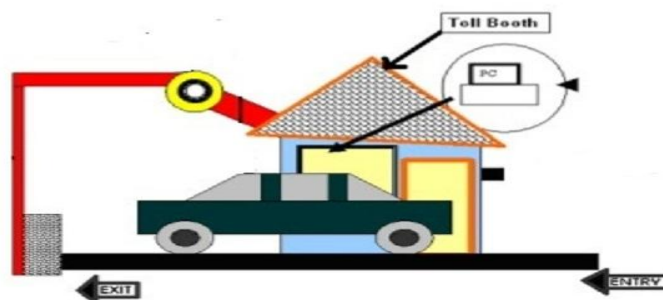


Fig: Proposed Toll Plaza Automation

Equipments:

Our Project Consists Of Components Given Below:

- Power Supply
- Raspberry Pi
- Python Ide

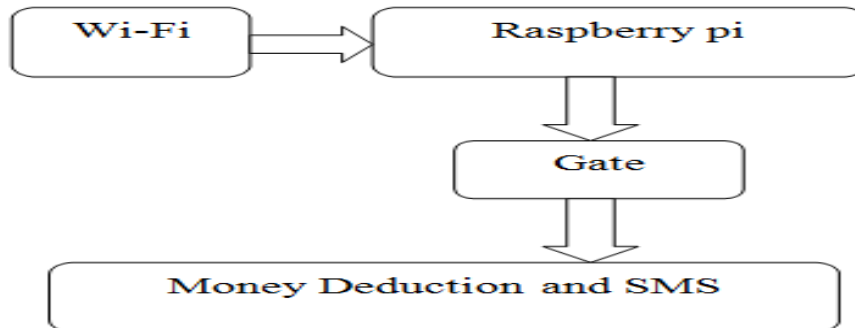
IV. Block Diagram:

Fig: Block Diagram

Raspberry Pi 0:

The Raspberry Pi Zero Has Proven To Be One Of The Most Popular And Sought-After Versions Of The Raspberry Pi Since It Came Out In November 2015. However, Many People Thought It Lacked One Very Important Feature: Inbuilt Wireless Internet. As Of Today, The Pi Zero Lacks It No More: Let Us Introduce You To Raspberry Pi Zero W.

Specifications:

Dimensions: 65mm × 30mm × 5mm

Soc: Broadcom Bcm2835

Cpu: Arm11 Running At 1ghz

Ram: 512mb

Wireless: 2.4ghz 802.11n Wireless Lan

Bluetooth: Bluetooth Classic 4.1 And Bluetooth Le

Power: 5v, Supplied Via Micro Usb Connector

Video & Audio: 1080p Hd Video & Stereo Audio Via Mini-Hdmi Connector

Storage: Microsd Card

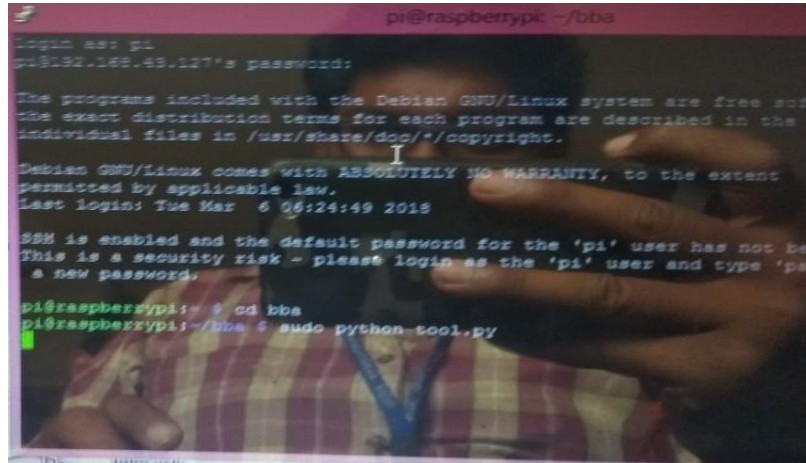
Output: Micro Usb

Gpio: 40-Pin Gpio Unpopulated

Pins: Run Mode, Unpopulated; Rca Composite, Unpopulated

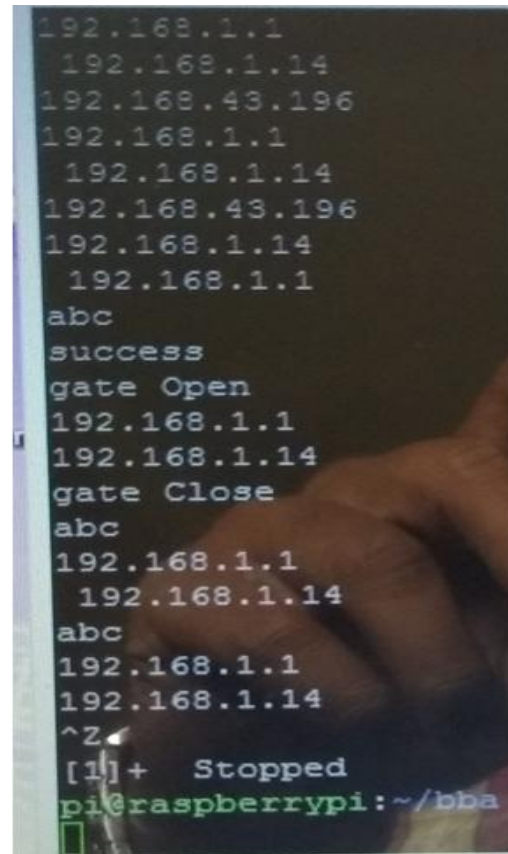
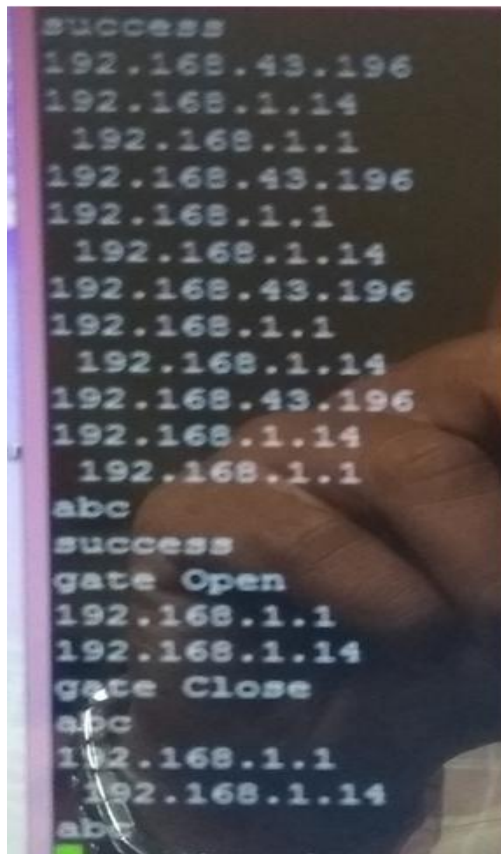
Camera Serial Interface (Csi)

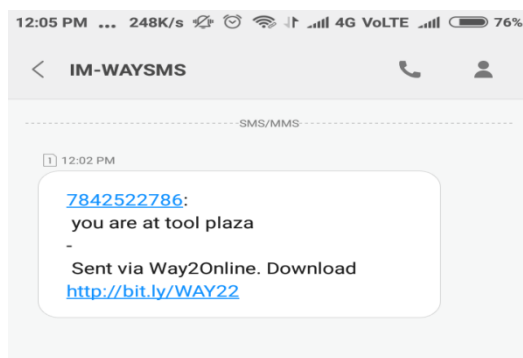
V. Results



VI. Conclusion

The Programmed Toll Accumulation Framework In Freeway In View Of Wi-Fi, An Outline Plan Was Advanced. It Has Qualities Of High Correspondence Separation And High Productivity, And So On. It Can Enhance Innovation Level Of Charge, As Well As Enhance Section Capacity Of Road. Electronic Toll Gathering Framework Is A Successful Measure To Decrease Administration Expenses And Charges, In The Meantime, Extraordinarily Diminish Commotion And Toxin Outflow Of Toll Station. In The Plan Of The Proposed Programmed Toll Gathering Framework, Ongoing Toll Accumulation And Hostile To Burglary Arrangement Framework Have Been Outlined. This Diminishes The Physical Work And Postpones That Regularly Happen On Streets. This Arrangement Of Gathering Tolls Is Eco Accommodating And Furthermore Brings About Expanded Toll Path Limit.





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About Author:



Insightful Experience In Undergraduate And Postgraduate Courses, Like Micro Wave Engineering, Antenna Wave Propagation, Field Theory, Electromagnetic Fields, Electromagnetic Wave And Transmission Lines, And Related Practice Sessions And Tutorials.

Research Area Electromagnetic Interference And Electromagnetic Compatibility, Handling Various Funded Projects.

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