TRAFFIC MANAGEMENT SYSTEM

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ABSTRACT

- Traffic management system is one of the major proportions of a smart city.

- With the rapid growth of proportions and rapid increase of vehicles across the whole country which further leads to the traffic congestion which is usually seen on roads.

- Nowadays traffic congestion is a difficult issue to deal with as number of vehicles is increasing day by day.

- A simple, effective and less costly method is used to optimize traffic flow on roads and an algorithm is devised to manage various traffic situations efficiently and automatically.

INTRODUCTION

- Traffic congestion on road networks creates many problems such as increased fuel consumption, increase air pollution, increased queuing of the vehicles and many more.

- In every cities of India traffic congestion is a major problem which we are facing nowadays.

- There are also even a severe many security problems in traffic system in our country due to many elements which also leads to the congestion of traffic at one place.

- India is the 2nd most populated country after China in the world, this with increase in population, the number of vehicles also increasing day by day.

- The economic growth has certainly had an impact on country traffic.

BLOCK DIAGRAM
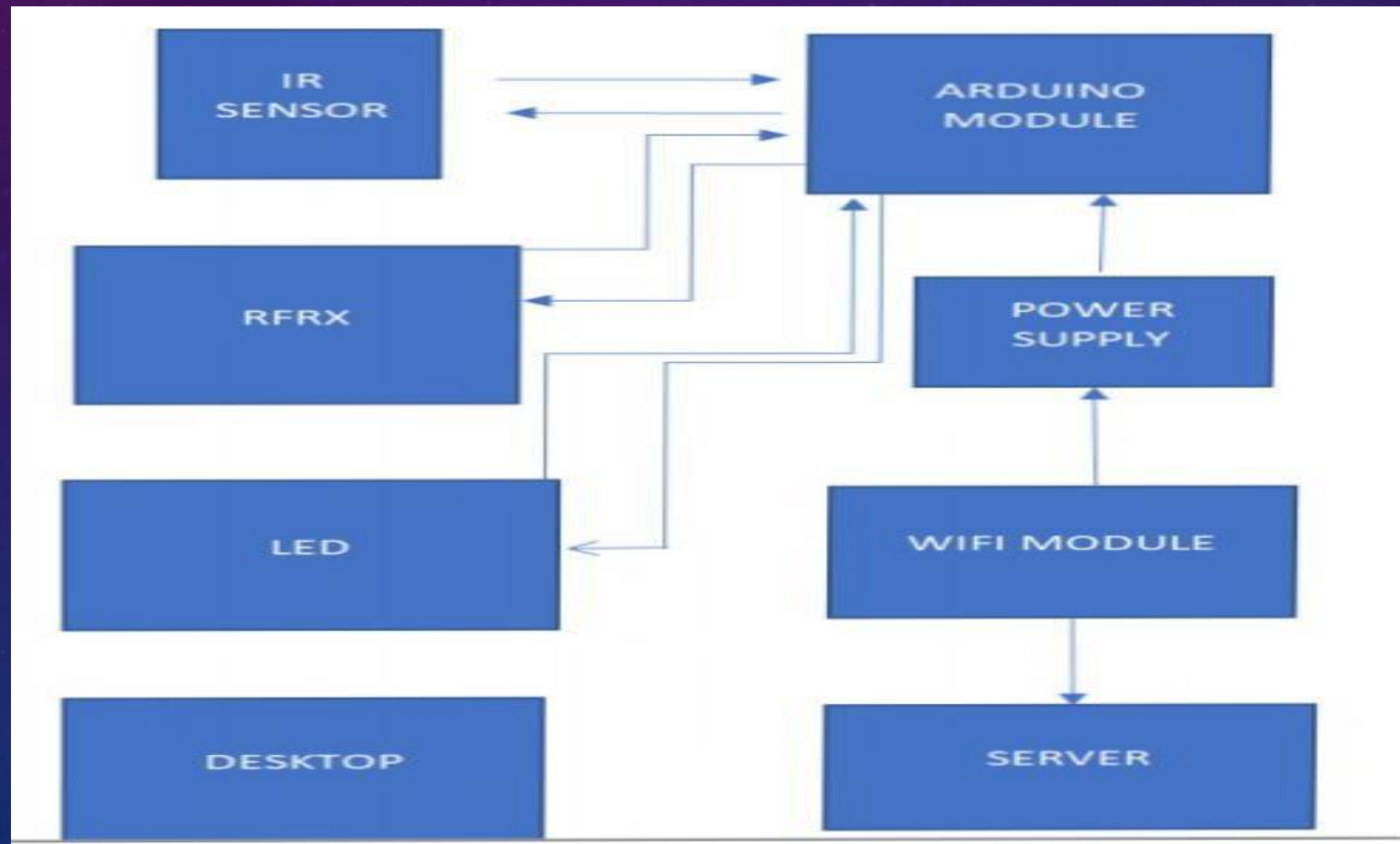
DESCRIPTION

ARDUINO NANO

- An 8 bit microchip AVR which is small, complete and bread board friendly board based on the Atmega328.
- It is the main CPU of our Project, in which we all the program will run.

POWER SUPPLY MODULE

- A power supply is a hardware component that provides power to any electrical device.

IR SENIOR

- These sensors are used to detect the object through infrared rays.
- These sensors are put sideways for giving us the density of vehicles in the specific lane.

WIFI MODULE

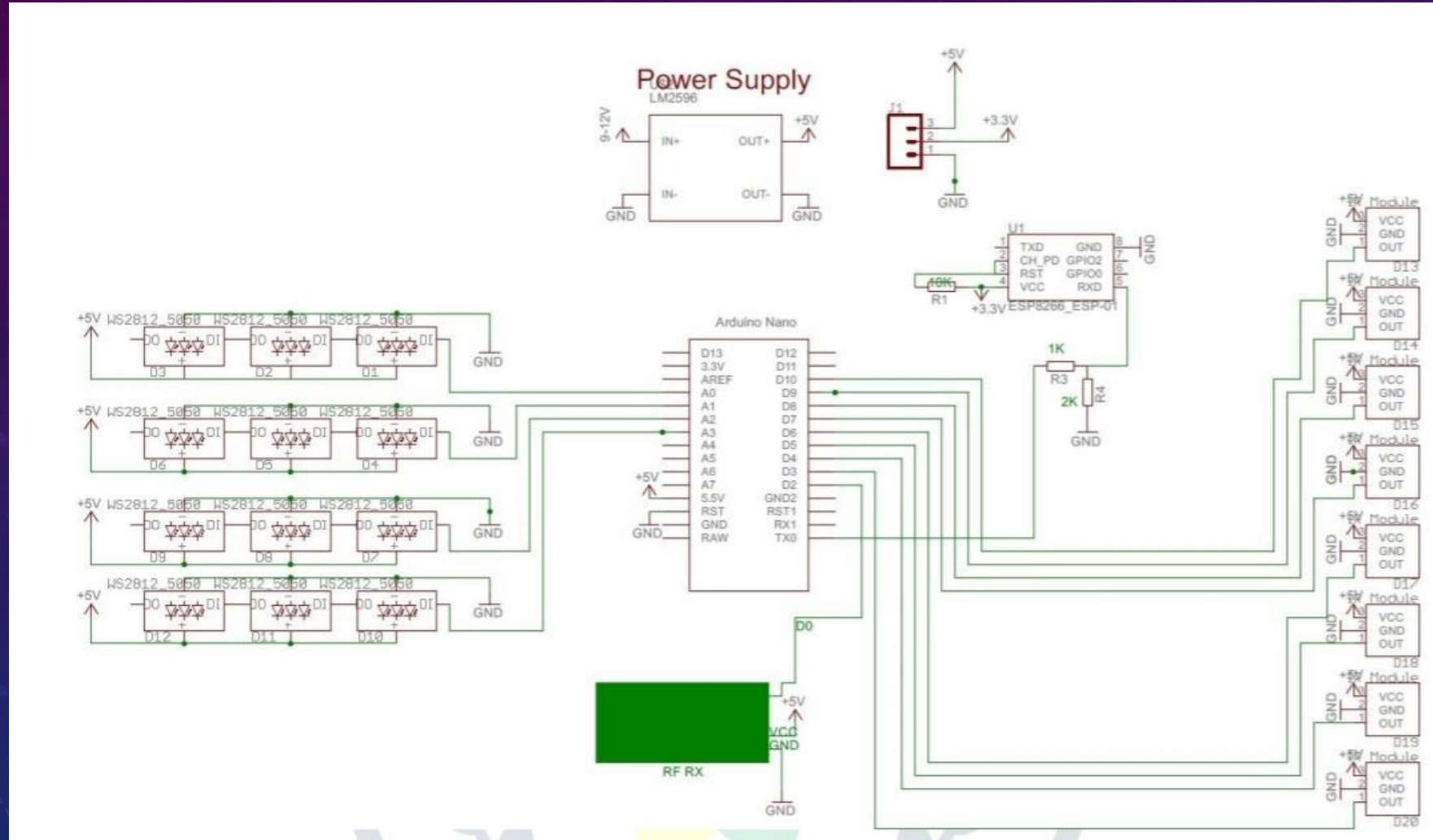- It is used to give microcontroller access to your wife network.

RFRX MODULE

- It consists of RF receiver; it is used for transmitting and receiving data.

BLYNK APP

- It is a mobile application for output and verification for real time data collected.

CIRCUIT DIAGRAM

WORKING PRINCIPLES

- There will 8 sensors across the 4 lanes with each lane having 2 sensors each, to give the data how much dense the lane is.

- If in case the entire lanes have less traffic then the system will work normally means the lanes sequence will be first A lane then B lane, the C lane and at last D lane.

- But in case if any of the lane gets more cars or gets densor then the other 3 lanes then that specific lane will open then the other with the second highest densor, then the same order continued to the other 2 lanes.

- If in case all the lanes have same number of vehicles then all the lanes will open in same order i.e.A,B,C,D.

SOFTWARE

- We are using the python software for the traffic management system.

- It was developed by the Guido Van Rossum.

- Python is a interpreted, object oriented and high level language. It was developed in the year of 1991.

- The system we proposed uses a python algorithm that can easily work in real-time and helps in determining traffic light whilst scheduling the time phase that results in increasing traffic regularity and efficiency by predicting a perfect route, controlling traffic jams, reducing, average waiting time , improving traffic.