IMPLEMENTATION OF SMART CITY MANAGEMENT SYSTEM WITH SPEECH ALERT IN ANDROID

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ABSTRACT

The smart city design means a city is driven technologically. In this we are using various sensors for measurement of traffic on road and street light in various area in the city. Here we plant for traffic IR sensor and also camera is used for capturing an image, however for street light we use LDR to detect whether it is daylight or not and another sensor will detect whether lamp is glowing or not.We take information from these sensors and send to Renesis microcontroller and then it will send this information to the Android device using GSM . In this project Android application developed to receive the all information for this project through GSM.

KEYWORDS: Renesis microcontroller, IR sensor, Ultrasonic sensor, GSM, LDR.

INTRODUCTION

The Smart City (SC) paradigm helps renovate the traditional city concept. In fact, it is possible to realize and develop efficient demand-side strategies integrating the monitoring and automation features ensured by intelligent devices and their communication apparatuses typically used in many applications. Within this concept, public lighting, being a great electrical energy consumer, has recently been attracting the interest of the research community. The efforts are focused on the use of alternative energies for the power supply of new lighting technologies, which allow obtaining considerable energy savings.

Within lighting technologies, Light Emitting Diodes (LEDs) assure the possibility of switching on the lamp without the preheating typical of halogen ones; a very high lighting efficiency; low power consumption; a superior life time and quick switching times not comparable to those of older technologies (only incandescent lights have a lower lighting time, but with very big power consumption and the shortest time life); less sensitivity to transient phenomena, which have a big impact on other technologies, allowing thousands of lightings without the risk of lamp failure. These innovative characteristics allow development of a new remote-control system based on intelligent lamp posts that also send information to a central control system in order to simplify management and maintenance issues also using holistic and bottom-up design strategies.

In this project Android application developed to receive the all information for this project through *GSM*. And ultrasonic sensor is used for dustbin purpose when dustbin fill that message send through GSM to Android mobile and LED lamps are used for street light LDR detect the lamp working.

MATERIALS AND METHODS

With smart technologies it's easy to manage traffic, garbage, environment and we can ease environmental and climate impacts from the growth in mobility. In this project Android application developed to receive the all information for this project through GSM. And ultrasonic sensor is used for dustbin purpose when dustbin fill that message send through GSM to Android mobile and LED lamps are used for street light LDR detect the lamp working.

An LDR is a component that has a (variable) resistance that changes with the light intensity that falls upon it. This allows them to be used in light sensing circuits. When the light level decreases, the resistance of the LDR increases. As this resistance increases in relation to the other Resistor, which has a fixed resistance, it causes the voltage dropped across the LDR to also increase.

RL78 is Renesas Electronics' next-generation microcontroller family combining advanced features from both the 78K and R8C families to deliver low power consumption and high performance.

RL78 is based upon a 16 bit CISC architecture with analogue rich functionality. The platform line up will include general purpose, LCD and ASSPs including lighting and automotive microcontrollers.

RL78 is designed specifically for ultra low power applications enabling customers to build compact and energy-efficient systems at lower cost.
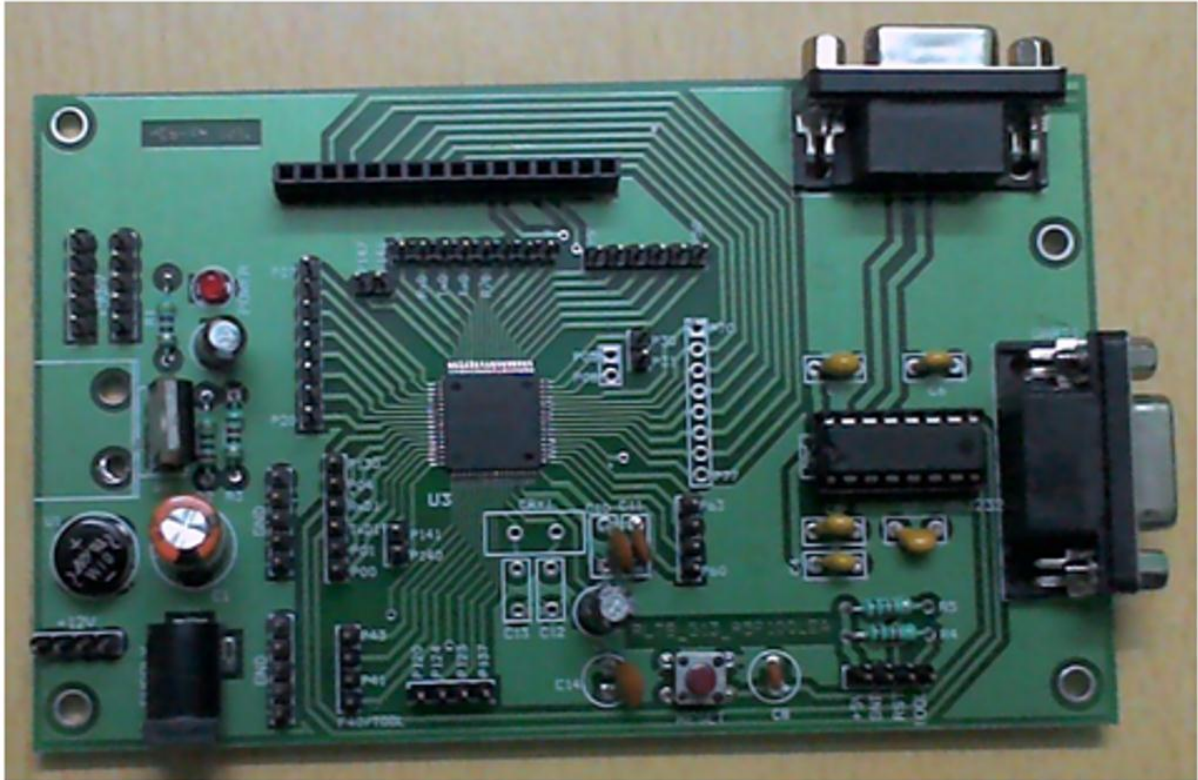

Fig 1.2: Renesis microcontroller.

RESULTS AND DISCUSSION

Many embedded systems have substantially different designs according to their functions and utilities. In this project design, structured modular design concept is adopted and the system is mainly composed of a single microcontroller, LCD, comparator, LED's, and IR sensor.

When dustbin fill ultrasonic sensor send message through GSM to Android voice output then also led lamps are street the light and LDR detect the lamp working also detect the sunlight. All IR transmitter sensors communicate with IR receivers, on the opposite side of the road, in a line-of-sight propagation method.
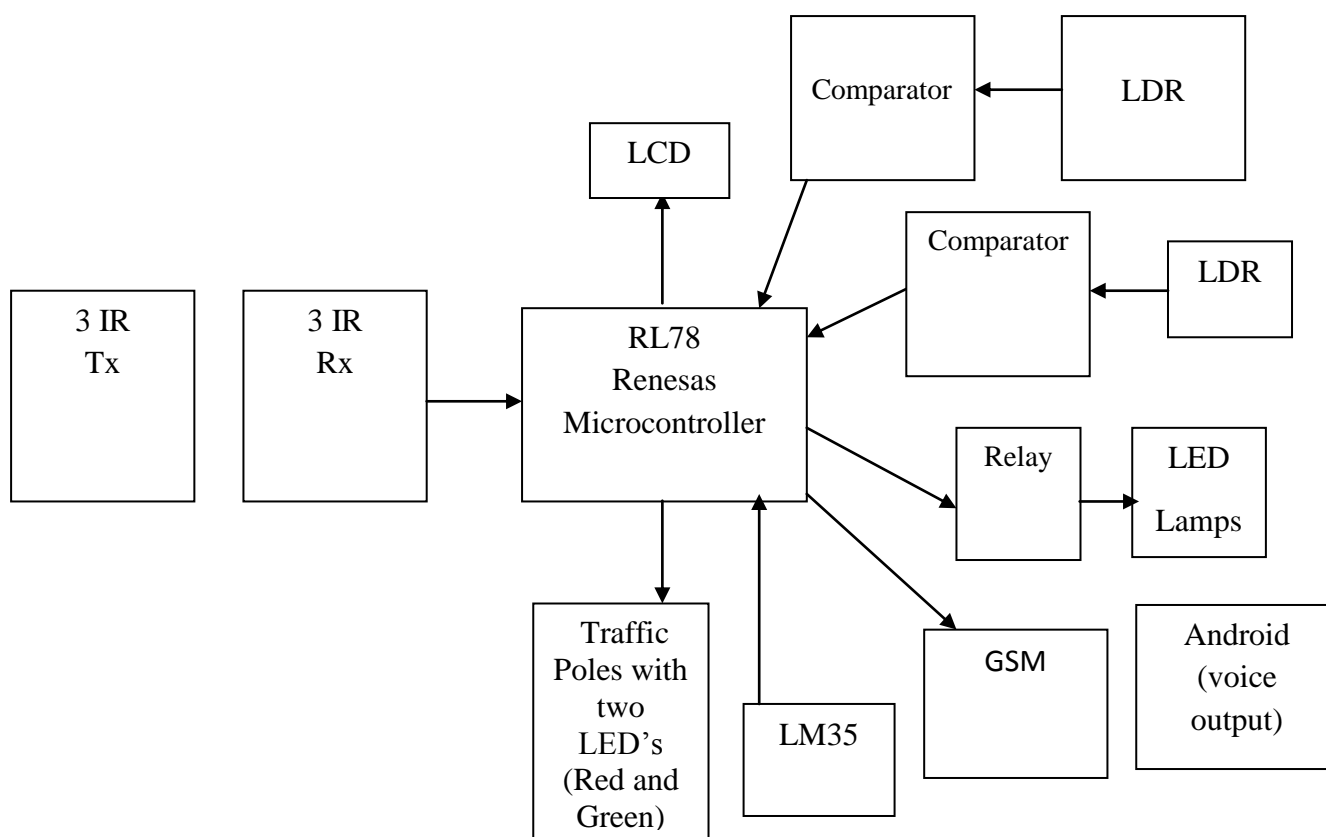
Fig 1.2: Showing overview diagram.

CONCLUSIONS

A smart city may therefore be more prepared to respond to challenges than one with a simple 'transactional' relationship with its citizens.

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