P K M Educational Trust ®

R.R. INSTITUTE OF TECHNOLOGY

(Affiliated to VTU, Belagavi | Approved by AICTE, New Delhi & Government of Karnataka,
Accredited by NAAC with A+

Department of Electronics and Communication Engineering

MINI PROJECT(BEC586) ON

IOT BASED AUTOMATED PETROL PUMP USING RFID

Presented By:

CHARAN G	1RI22EC007
LIKITH H P	1RI22EC029
VIVEK D	1RI22EC063
HARISH	1RI22EC401

Under The Guidance of
Prof. RAGHUNANDAN G,
Assosciate professor,
Dept. of ECE,
RRIT.

CONTENTS

INTRODUCTION

OBJECTIVE

LITERATURE SURVEY

BLOCK DIAGRAM

EXPECTED OUTCOME

REFERENCE

- **INTRODUCTION**

There have been various challenges in India as a result of the dispensing of petrol to such a big number of motor vehicles at fuel stations. The vehicle driver must pay for fuel with cash and may be required to pay more than the amount of fuel provided owing to a scarcity of small change available from the station operator. Currently, fuel stations are run by hand. These gasoline pumps require more time and effort to operate. It is quite costly to locate fuel stations in remote places in order to give outstanding customer service. All of these issues are addressed by the use of unmanned fuel pumps, which take less time to run, are effective, and can be located anywhere the consumer self-goes to use the services. Payment is made via an electronic clearance system.
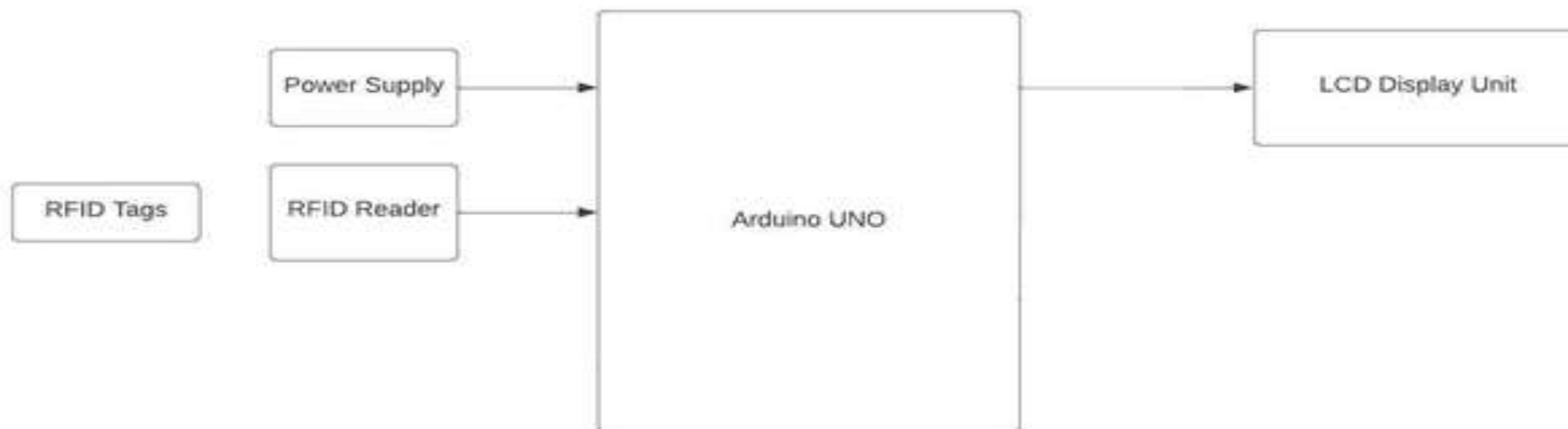
·OBJECTIVE

- Develop a secure, cashless payment system using RFID technology.

- Automate fuel dispensing based on preselected amounts.

- Enhance the speed and accuracy of petrol pump transactions.

- Provide a user-friendly interface for customers.

- Reduce operational errors and manual dependencies.

© R R INSTITUTE OF TECHNOLOGY BANGALORE,-90

LITERATURE SURVEY

TITLE OF PAPER	METHODOLOGY	PROS	CONS	TAKEAWAY
Smart automatic petrol pump system based on IOT -Hassan J. Motlak	The fundamental objective is to develop smart petro pump based on RFID as payment tool and control on it remotely with high security level.	RFID corresponds to remarkably recognize articles or individuals, and is one of the quickest developing automatic data collection.	RFID tags can be more expensive than barcodes. RFID readers can also be up to 10 times more expensive than barcode readers	RFID tags can be read faster than barcodes, and up to 40 tags can be read at once. RFID tags can be read from up to 300 ft away
Edward, "A research using remote monitoring technology for pump output monitoring in distributed fuel station in Nigeria,"	The ATmega328 is commonly used in projects and autonomous systems that require a simple, low-cost microcontroller.	The ATmega328 has 1KB of Erasable Programmable Read-Only Memory. This feature implies that even if the power is switched off, the microcontroller can still store data and output results	ATmega328 will not be efficient for small projects that require a lot of I/O pins. The ATmega328 has limited I/O pins.	The ATmega328 offers a variety of capabilities like Advanced RISC architecture, good performance, low power consumption, real timer counter with independent oscillator.

BLOCK DIAGRAM OR FLOWCHART

EXPECTED OUTCOME

- The Smart Petrol Pump system using RFID technology has proven to be an efficient, accurate, and user-friendly solution for automating fuel dispensing. By integrating Arduino microcontrollers, RFID readers, LCD displays, and relays, the system has streamlined the process of selecting fuel amounts, making payments, and dispensing fuel. The automation eliminates human error and reduces wait times, providing a seamless experience for customers.

- The advantages of the system are clear. It increases operational efficiency, reduces labor costs, and improves security by ensuring that only authorized payments result in fuel dispensing. Furthermore, the integration of RFID technology enhances user experience by allowing for quick and contactless transactions, which are crucial in today's world.

REFERENCES

[1]. Fawzi Mohammed Munir Al-Naima and Mohannad M Hasan, "Design and implementation of RFID Based fuel dispensing system", Research gate publication, September 2015.

[2]. P. Anjali, G. Navya Jyothi, and Yalabaka Srikanth, "Self Service Automated Petrol Pump Using Fingerprint Based RFID Technology", Journal of Mechanics of continua and mathematical sciences", Vol.-15, No.-6, June (2020) pp 82- 88.

[3]. S. Ponmalar, K. Bhuvaneswari, and S. Preethi, "RFID based Petrol Pump Automation System, International Research Journal of Engineering and Technology (IRJET), Volume: 07 Issue: 02 | Feb 2020. [4]. R Deepa, Roshni A Ramesan, Navya V, Rajesh Kumar Choudhary, Vivek Hegde, "Automated Petrol Bunk", JETIR May 2019, Volume 6, Issue 5, 2019

[5]. Sudeshna Dutta, Smarajit Pal, Subhankar Majumder, and Mrs.Pratyusha Biswas Deb, "SELF SERVICE PETROL PUMP USING AUTOMATION TECHNOLOGY", I3SET2K19: INTERNATIONAL CONFERENCE ON INDUSTRY INTERACTIVE INNOVATIONS IN SCIENCE, ENGINEERING, AND TECHNOLOGY 3.
.