|  |  |  |
| --- | --- | --- |
| **INDEX** | | |
| **Chapter No.** | **TOPIC** | **Page No.** |
| **1**  1.1  1.2  1.3  1.4 | **ABSTRACT**  **INTRODUCTION**  Existing System  Disadvantages of Existing System  Proposed System  Advantages of Proposed System | 2  2  3  4 |
| **2**  2.1  2.2 | **PROJECT DESCRIPTION**  Block Diagram  Block Diagram Explanation | 5 |
| **3**  3.1  3.1.1  3.1.2  3.1.3  3.2  3.2.1  3.2.2  3.2.3  3.2.4  3.2.5  3.2.6  3.3  3.3.1  3.3.2  3.3.3  3.3.4  3.4  3.4.1  3.4.2  3.5  3.5.1  3.5.2  3.5.3  3.5.4  3.5.5  3.6  3.6.1  3.7  3.7.1 | **HARDWARE COMPONENTS**  Power supply  Transformer  Rectifier  Voltage Regulator  Micro-Controller  Description  Pin Diagram  Pin Description  Registers  Memory Organization  Working of Micro-Controller  Liquid Crystal Display  Introduction  Working Principle  Pin Description  Interfacing Circuit  Bluetooth  Working of Bluetooth  Interfacing Circuit  Driver Circuit  Description  Pin Diagram  Pin Description  Working of L293D  Interfacing Circuit  DC Motor  Working of DC Motor  Buzzer  Working of Buzzer | 7  8  8  9  10  10  11  12  14  14  16  16  16  17  18  19  20  21  21  22  22  22  23  24  24  24  25  25  26 |
| **4**  4.1  4.2 | **SOFTWARE SPECIFICATION**  Keil Software  Steps to Write An Assembly Language in  and how to complete it | 27  29 |
| **5**  5.1  5.2  5.3 | **IMPLEMENTATION**  Schematic diagram  Flow chart  Flow Chart Explanation | 31  32  33 |
| **6**  6.1 | **SIMULATION AND DESIGN**  Output Screen-shots | 34 |
| **7**  7.1 | **Conclusion**  Future scope | 37 |
| **8** | **Appendix-A**  References  **BIOGRAPHY** | 38 |

**List of Figures**

|  |  |
| --- | --- |
| Figures | Page no |
| Fig 1.1 Existing System | 2 |
| Fig 1.2 Proposed system | 3 |
| Fig 2.1 Block diagram | 5 |
| Fig 3.1 Internal circuit diagram of Power supply | 7 |
| Fig 3.2 Block diagram for power supply | 7 |
| Fig 3.3 Bridge Rectifier | 8 |
| Fig 3.4 Regulator | 9 |
| Fig 3.5 Block Diagram of 8052 | 11 |
| Fig 3.6 Pin Diagram of 8052 | 11 |
| Fig 3.7 16x2 LCD | 16 |
| Fig 3.8 LCD working | 17 |
| Fig 3.9 Interfacing Diagram of LCD with 8052 Micro-Controller | 19 |
| Fig 3.10 Bluetooth | 20 |
| Fig 3.11 Interfacing Diagram of Bluetooth with 8052 Micro-Controller | 21 |
| Fig 3.12 Pin Diagram of L293D | 22 |
| Fig 3.13 Interfacing Diagram of Driver Circuit with 8052 Micro-Controller | 24 |
| Fig 3.14 DC Motor | 25 |
| Fig 3.15 Buzzer | 26 |
| Fig 5.1 Schematic Diagram | 31 |
| Fig 5.2 Flow Chart | 32 |
| Fig 6.1 Gate Opening | 34 |
| Fig 6.2 Gate Closing | 35 |
| Fig 6.3 Bluetooth Terminal HC-05 App Screen Shot | 36 |

**LIST OF TABLES**

|  |  |
| --- | --- |
| Table 1:Port 3 Pin Description of Micro-Controller | 13 |
| Table 2: Pin Configuration of LCD | 18 |
| Table 3 : Pin Description of L293D | 23 |

**ABSTRACT:**

In everywhere at level crossing between railroad and highway there are many railway accidents happening due to the laziness and carelessness in manual operations or lack of workers. So, this paper describes the automatic railway gate control system using android app and Bluetooth module for saving human lives and avoiding major disasters in railway track.

The project is designed to control over the railway level crossing gate using Android mobile phone by the gate keeper. Opening and closing of railway level crossing gate involves manpower, which could be often causes incorrect leading to accidents. This system prevents the need of any human involvement at the railway level crossing. This system involves opening and closing of the level crossing gate by using an Android app. This Remote operation is achieved by any smart-phone/Tablet etc., with Android OS, upon a Graphical User Interface based touch screen operation. A Bluetooth device is interfaced with the system.

When the gate keeper sent command to close from the Android application device (when the train is approaching at the level crossing) to the Bluetooth device which while supply to the microcontroller, sends an output signal which activates a mechanism to switch on the motor to close the gate. To open the gate, another command needs to be sent for the microcontroller to open the gate using motor driver integrated circuit. In this project we use a microcontroller of 8051 families, and the input to its Bluetooth device which takes command from the user Android application. The output to microcontroller is given to a motor by using a motor driver integrated circuit for some required operation. The status, whether the gate is open or close is displayed on an LCD (liquefied crystal display) interfaced to the microcontroller.