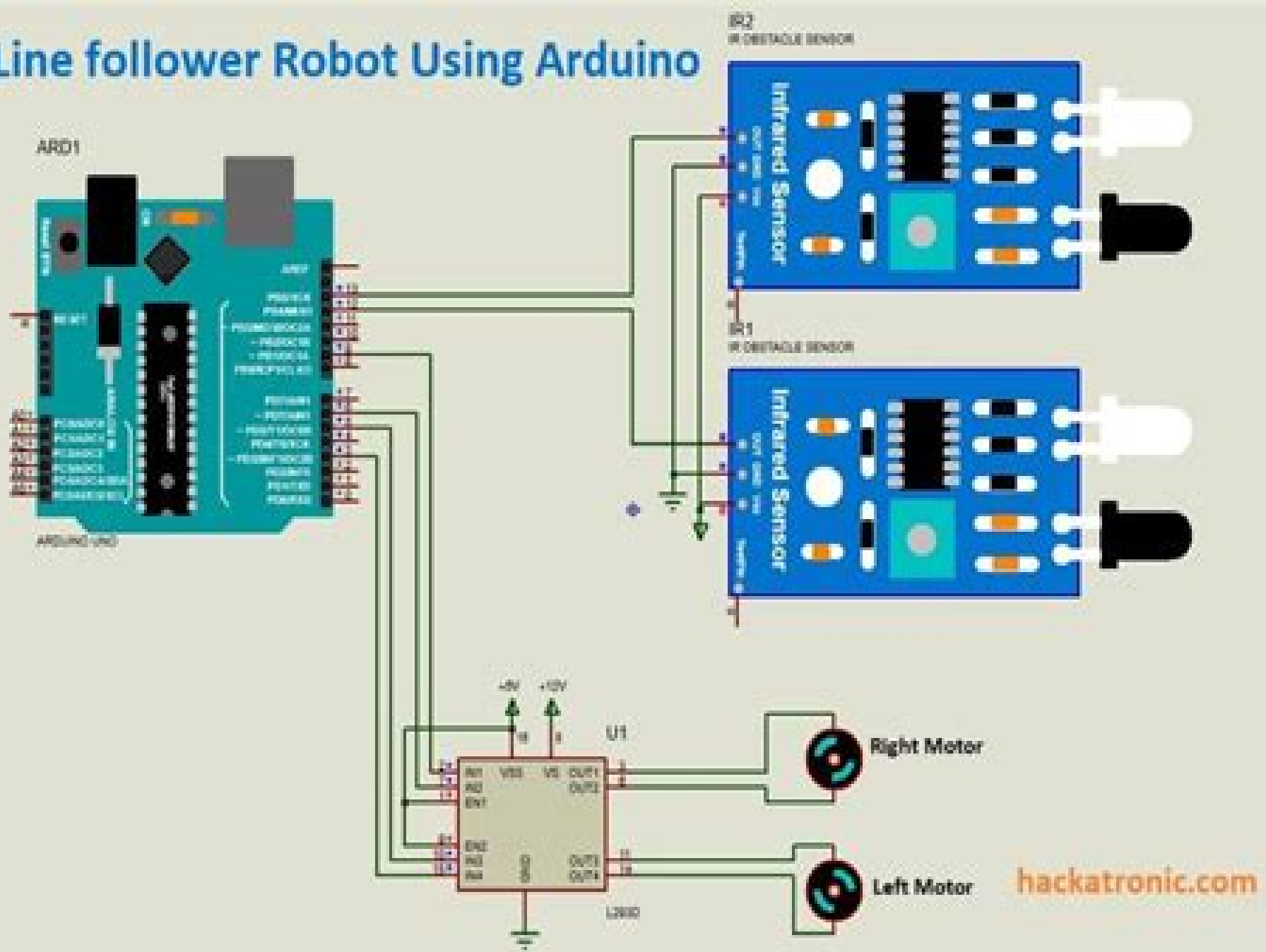


Line follower Robot Using Arduino



Line Follower Robot Project Circuit

**Abhinav Juneja, Vikram Bali, Sapna
Juneja, Vishal Jain, Prashant Tyagi**

Line Follower Robot Project Circuit:

Digital control methods for a line following robot Steffen Block, 2003-12-09 Inhaltsangabe Abstract The project aim was to build a robot controlled by a PIC microcontroller to follow a line completely autonomously and as quickly as possible. The robot meets the requirements from the RoboRama Contest followed a T shape course and obtained more safety features. Different kinds of design features and digital algorithms were developed and tested in order to achieve the best results. Applied project management techniques and used key skills guaranteed the successful completion of the project in the design and construction of hardware and software technologies. The hardware was based on a block structure with infrared sensors at the front of the vehicle. Their analogue signals were transferred to digital logic with a comparator. This information used a PIC 16F84A microcontroller to control the movement and direction of the robot with pulse width modulation PWM. All parts were mounted on a chassis implemented with a mechanical construction set. Batteries of 9V provided the necessary power supply. Adjustments were done through iterative steps to come to the final result of the robot system. The main adapted design feature was the motor and steering system. First of all a separate servomotor for the steering and a single DC motor for the forward movement was fixed. Through implemented and first testing steps this resolution lacked the required performance. Hence the design changed to two DC motors which offered a satisfactory solution. The electronic circuit was designed with the computer aided design tool Proteus and executed as a strip line board. The software algorithm development started with the truth table to reduce the possible events from thirty two to the eleven applied conditions. The generated flowchart gave the program a structure and applied the truth table decision in different PWM generations. Finally the software was written in assembler language and implemented on the PIC.

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Raspberry Pi Mechatronics Projects HOTSHOT Sai Yamanoor, Srihari Yamanoor, 2015-02-26 This book is targeted towards beginners and intermediate designers of mechatronic systems and embedded system design. Some familiarity with the Raspberry Pi and Python programming is preferred but not required.

Intel Edison Projects Avirup Basu, 2017-05-30 Build powerful Robots and IoT solutions using Intel Edison. About This Book Learn to build advanced level robots with Intel Edison and Arduino. Efficiently build and program home automation and IoT projects with Intel Edison. Master the skills of creating enticing projects with Intel Edison. Who This Book Is For If you are a hobbyist robot engineer IoT enthusiast programmer or developer who wants to create autonomous projects with Intel Edison then this book is for you. Prior programming knowledge would be beneficial. What You Will Learn Program your device using the Arduino processor language Python and Node.js. Interface different

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Enabling Healthcare 4.0 for Pandemics Abhinav Juneja,Vikram Bali,Sapna Juneja,Vishal Jain,Prashant Tyagi,2021-09-08 ENABLING HEALTHCARE 4 0 for PANDEMICS The book explores the role and scope of AI machine learning and other current technologies to handle pandemics In this timely book the editors explore the current state of practice in Healthcare 4 0 and provide a roadmap for harnessing artificial intelligence machine learning and Internet of Things as well as other modern cognitive technologies to aid in dealing with the various aspects of an emergency pandemic outbreak There is a need to improvise healthcare systems with the intervention of modern computing and data management platforms to increase the reliability of human processes and life expectancy There is an urgent need to come up with smart IoT based systems which can aid in the detection prevention and cure of these pandemics with more precision There are a lot of challenges to overcome but this book proposes a new approach to organize the technological warfare for tackling future pandemics In this book the reader will find State of the art technological advancements in pandemic management AI and ML based identification and forecasting of pandemic spread Smart IoT based ecosystem for pandemic scenario Audience The book will be used by researchers and practitioners in computer science artificial intelligence bioinformatics data scientists biomedical statisticians as well as industry professionals in disaster and pandemic management

Control Engineering Theory and Applications Jahangir Alam,Guoqing Hu,Hafiz Md. Hasan Babu,Huazhong Xu,2022-11-17 The book provides general knowledge of automatic control engineering and its applications Providing an overview of control theory and systems the chapters introduce transfer functions modeling of control systems automatic control systems block diagrams and signal flow graphs While control system analysis and design are accompanied by root locus methods and frequency response analyses distributed control systems nonlinearity in control systems including Z transformation are also presented With straightforward demonstrations examples and multiple choice questions this book

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IMAGINATIVE EXPERIMENTS THAT TEACH THE BASICS WHILE PROVIDING HOURS OF FUN

Proceedings of TEEM 2023 José Alexandre de Carvalho Gonçalves, José Luís Sousa de Magalhães Lima, João Paulo Coelho, Francisco José García-Peñalvo, Alicia García-Holgado, 2024-08-04 This proceedings volume presents outstanding advances with a multidisciplinary perspective in the technological ecosystems that support Knowledge Society building and development With its learning technology based focus using a transversal approach TEEM is divided into thematic and highly cohesive tracks each of which is oriented to a specific community of interest including researchers professionals and students Informatics and Education are the central issues in the conference tracks including broad scope research areas such as Educational Assessment and Orientation Human Computer Interaction eLearning Computers in Education Communication Media and Education Medicine and Education Learning Analytics Engineering Education Robotics in Education Mechatronics Diversity in Education Gamification and Games for Learning

JunkBots, Bugbots, and Bots on Wheels: Building Simple Robots With BEAM Technology Dave Hrynkiw, David Hrynkiw, Mark W. Tilden, Mark Tilden, 2002-10-18 From the publishers of BattleBots The Official Guide comes this do it yourself guide to BEAM Biology Electronics Aesthetics Mechanics robots They re cheap simple and can be built by beginners in just a few hours with help from this expert guide complete with full color photos Get

ready for some dumpster diving *PIC Robotics: A Beginner's Guide to Robotics Projects Using the PIC Micro* John Iovine, 2004-01-02 Here's everything the robotics hobbyist needs to harness the power of the PICMicro MCU In this heavily illustrated resource author John Iovine provides plans and complete parts lists for 11 easy to build robots each with a PICMicro brain The expertly written coverage of the PIC Basic Computer makes programming a snap and lots of fun

Arduino Robot Bonanza Gordon McComb, 2013-04-03 Bestselling robotics author Gordon McComb shows how to build seven fun functional and affordable robots that roll walk talk crawl slither and even sling insults all using the popular Arduino microcontroller Programming and Customizing the OOPic Microcontroller Dennis Clark, 2003 this authoritative guide delves deeply into this groundbreaking technology and delivers a programming guide and application notes dedicated to the OOPic environment This title includes a full object listing as well as an IDE Integrated Development Interface hardware and software guide and a CD OM with all project and experiment codes that you incorporate to customise your own projects Stay ahead of the robotics curve tap into the power of OOPic microcontrollers with this indispensable volume **Robot Building for Beginners** David Cook, 2002-01-16 Learning robotics by yourself isn't easy but it helps when the encouragement comes from an expert who's spent years in the field Not only does author David Cook assist you in understanding the component parts of robot development but he also presents valuable techniques that prepare you to make new discoveries on your own Cook begins with the anatomy of a homemade robot and gives you the best advice on how to proceed successfully General sources for tools and parts are provided in a consolidated list and specific parts are recommended throughout the book Also basic safety precautions and essential measuring and numbering systems are promoted throughout Specific tools and parts covered include digital multimeters motors wheels resistors LEDs photoresistors transistors chips gears nut drivers batteries and more Robot Building for Beginners is an inspiring book that provides an essential base of practical knowledge for anyone getting started in amateur robotics Microelectronics for All Bob Campbell, Robin Millar, 1985 **Robot Builder's**

Bonanza, 4th Edition Gordon McComb, 2011-05-23 The Bestselling Robotics Book Now with New Projects and Online Tools Amazing should be required reading for any budding robot builder GeekDad Wired com Have fun while learning how to design construct and use small robots This richly illustrated guide offers everything you need to know to construct sophisticated fully autonomous robots that can be programmed from your computer Fully updated with the latest technologies and techniques Robot Builder's Bonanza Fourth Edition includes step by step plans that take you from building basic motorized platforms to giving the machine a brain and teaching it to walk talk and obey commands This robot builder's paradise is packed with more than 100 affordable projects including 10 completely new robot designs The projects are modular and can be combined to create a variety of highly intelligent and workable robots of all shapes and sizes Mix and match the projects to develop your own unique creations The only limit is your imagination Robot Builder's Bonanza Fourth Edition covers Parts materials and tools Building motorized wooden plastic and metal platforms Rapid prototyping methods

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International Encyclopedia of Robotics ,1988 **Robot Builder's Bonanza, 5th Edition** Gordon McComb,2018-12-14 The bestselling guide to hobby robotics fully updated for the latest technologies Learn to build your own robots using the hands on information contained in this thoroughly revised TAB guide Written by the godfather of hobby robotics the book clearly explains the essential hardware circuits and brains and contains easy to follow step by step plans for low cost cool robotics projects Robot Builder s Bonanza Fifth Edition contains more than two dozen new projects for hobbyists of all ages and skill levels The projects are modular and can be combined to create a variety of highly intelligent

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Decoding **Line Follower Robot Project Circuit**: Revealing the Captivating Potential of Verbal Expression

In a period characterized by interconnectedness and an insatiable thirst for knowledge, the captivating potential of verbal expression has emerged as a formidable force. Its ability to evoke sentiments, stimulate introspection, and incite profound transformations is genuinely awe-inspiring. Within the pages of "**Line Follower Robot Project Circuit**," a mesmerizing literary creation penned with a celebrated wordsmith, readers embark on an enlightening odyssey, unraveling the intricate significance of language and its enduring affect our lives. In this appraisal, we shall explore the book is central themes, evaluate its distinctive writing style, and gauge its pervasive influence on the hearts and minds of its readership.

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