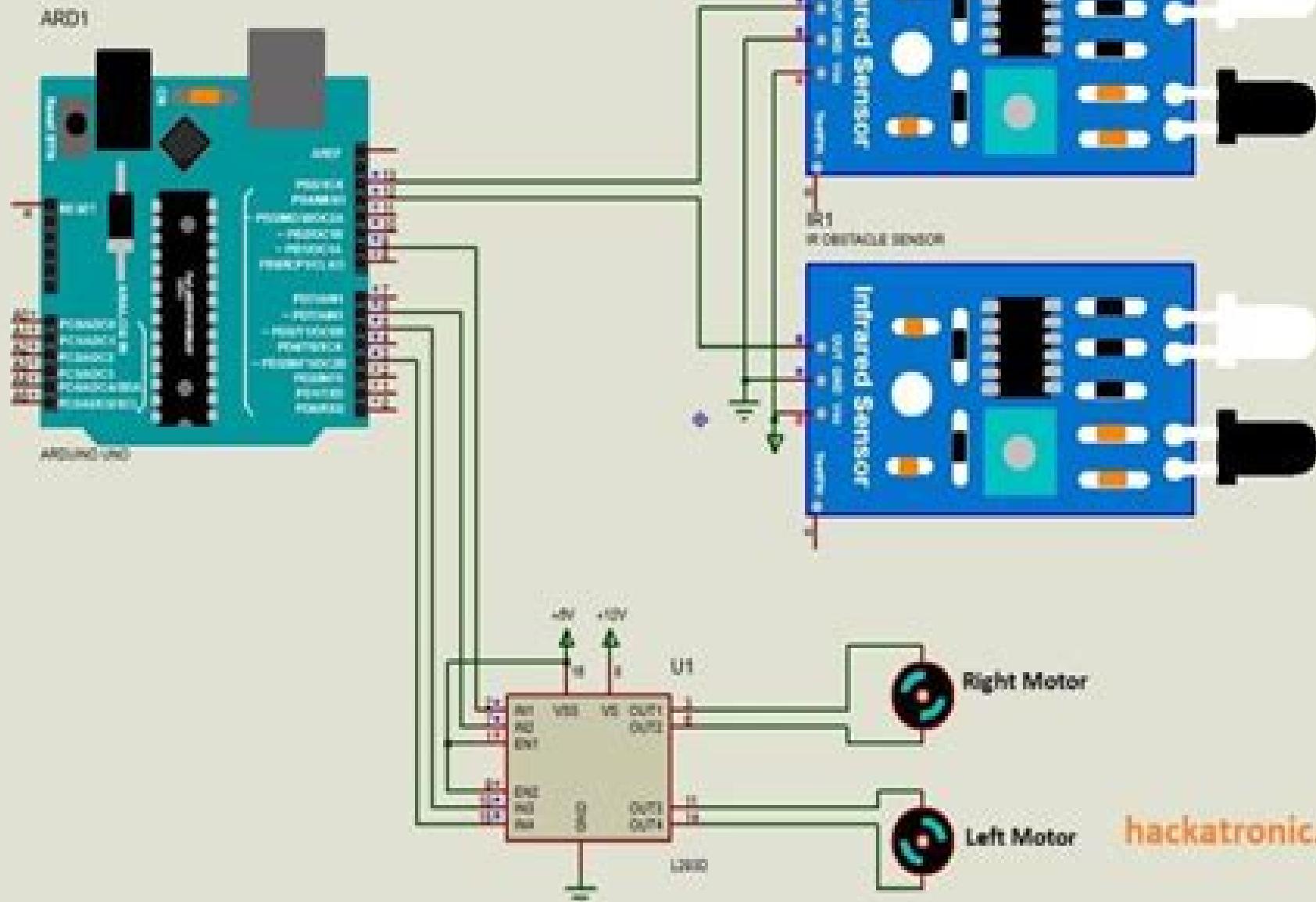


Line follower Robot Using Arduino



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 built 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 Inhaltsverzeichnis Table of Contents iTitlei iiAbstractii iiiAcknowledgementsiii ivList of Figuresiv vList of Tablesvi viList of Abbreviationsvii viiList of Symbolsix viiiTable of Contentsx 1 Introduction1 1 1Project Aims2 1 2RoboRama Rules2 2 Specification and Analysis5 2 1Specification of the project5 2 1 1Research and definition for the project5 2 1 2Resources management7 2 2Project time plan8 3 Design of the robot9 3 1Design of the electronic hardware11 3 1 1Sensors OPD 70911 3 1 2Comparator

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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123 Robotics Experiments for the Evil Genius

Myke Predko,2003-05-21 123 ROBOT EXPERIMENTS 123 STEPS NEEDED TO BRING OUT THE GENIUS IN EVERY BASEMENT HOBBYIST If you enjoy tinkering in your workshop and have a fascination for robotics you ll have hours of fun working through the 123 experiments found in this innovative project book More than just an enjoyable way to spend time these exciting experiments also provide a solid grounding in robotics electronics and programming Each experiment builds on the skills acquired in those before it so you develop a hands on nuts and bolts understanding of robotics from the ground up 123 Robotics Projects for the Evil Genius Introduces you to robotics electronics and programming for robotics step by step you don t need to be a science whiz to get started but you will be when you have finished Vividly explains the science behind robots and the technologies needed to build them including Electronics Mechanical assembly Motors and batteries Programming and microcontrollers Shows how you can create simple robots and models using materials found around the house and workroom Requires only inexpensive easily obtained parts and tools Provides a PCB printed circuit board that will make it easy to create the circuits used in this book as well as your own experiments Gives you directions for building a maze solving robot two different designs for a light seeking robot an artificial intelligence program that will respond to you and much more Explains underlying principles and suggests other applications Supplies parts lists and program listings

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-Peña, 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 Hryniw,David Hryniw,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 ROM 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.

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[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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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

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