

AUTOMATIC CAR WASHING SYSTEM USING MICROCONTROLLER

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ABSTRACT - This paper presents the proposal and development of a programmed sensor-based carwash system. The system provides quick, convenient, and efficient washing services. The main steps involving in the car wash system consists of car peripheral planning, adjustment of nozzles based on car peripherals, and smearing various washing practices. In the initial step, object planning is achieved using a suitable sensor system. Subsequently, data acquired from sensors is processed and the relevant information regarding the car periphery is stored. Lastly, the status of the nozzles is adjusted (at a suitable position/angles) based on the car peripheral planning. Once the nozzles are adjusted to appropriate angles, the washing process is initiated that includes foam spray, water spray, and drying. In this paper, the simulation model of the proposed followed by the development of a small-scale hardware prototype. With the information merged in the design, the developed system is capable to clean off considerably the exterior dimensions of objects for efficient washing method.

Key Words: car wash, car peripheral planning, atmega16, ultra-sonic sensors.

1. INTRODUCTION

Automatic Car-Washing is controlled using the electro-mechanical system as shown. A proto-type model is executed in our project. Automatic washing was started way long before in the 1930s. Overtime, many apprising's were done on it in the previous method car was to be lifted to wash downside. We are using angular jet spraying using nozzles at a suitable position which helps cleaning downside more easily the full mechanism includes the rolling of the car and moving it on a conveyor belt in a forward direction in steps. At transitional steps, the car cleaning is done with water in real form and soap water is allowed to fall on the car under wash. Care is taken for not allowing the water to fall on the fabrication, also suspended front rollable brushes are installed to clean the upper side neatly at the end the car is again allowed to move forward for drying. Belt Returns for loading a new car.

2. MICROCONTROLLER

Atmega16 is a controller that can power most of the machines very straightforwardly. The atmega16 is just

doing precisely what the human software engineer instructed them to do. atmega16 can without much of a stretch run numerous machines. At the point when running a microcontroller program, a visual operation can be seen on the screen. A microcontroller system can be tried, approved, and remedied sparing an exceptionally important time. With wired hand-off sort boards, any project change requires time for the rewiring of boards and gadgets. The programs are written can be confirmed and tartan before closing putting in place and it can be modified at any time without alarming any physical changes. ATmega16 is an 8-bit high presentation microcontroller it belongs to Atmel's Mega AVR family. It's a 40-pin microcontroller based on enhanced Reduced Instruction Set Computing architecture with many powerful commands. It has a programmable flash memory of 16KB, static RAM of 1 KB, EEPROM of 512 Bytes. The resolution cycle of flash memory and EEPROM is 10,000 and 100,000, correspondingly. Most of the commands execute in one machine cycle. It can work on an extreme frequency of 16MHz.

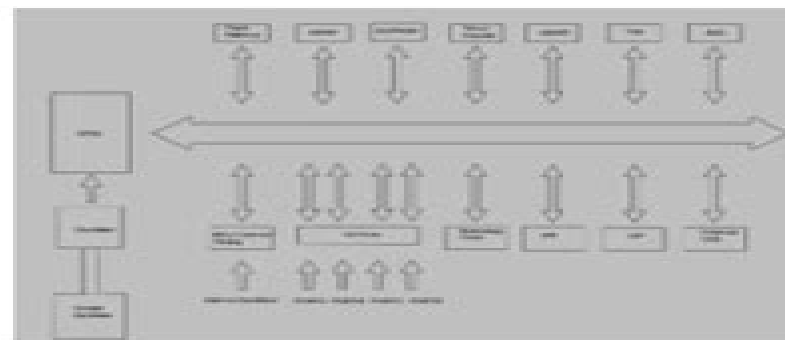


Figure -1: Atmega16 Architecture

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Microcontroller Technology, the 68HC11 Peter Spasov,2002 This updated edition continues to provide readers with the background needed to understand and use microcontrollers specifically the popular Motorola 68HC11 The 68HC11 is relatively easy to work with and has most of the features essential for a complete control system The book starts at an introductory level by explaining the applications and origins of microcontrollers Next a programmer's view of the device is developed Finally the hardware is described and the reader learns how to connect it to the outside world for control applications Many changes have been made to this edition To acknowledge the prominence of C programming the topic is introduced earlier and the text uses C program examples throughout A CD ROM containing source code a special demo version of the THRSim11 simulator a IC11 demo C compiler a cross assembler fuzzy logic tools and assorted electronic design tools is included Because it provides a practical way to explore programming and interfacing concepts readers will find the simulator extremely useful Chapter openers now list learning objectives to help the reader pick out the important points in each chapter Numerous helpful appendices have been added to reinforce key topics This book is an excellent guide and reference and it will prove indispensable to students of control automation and interested amateurs as well as to experienced users of microcontrollers An Instructor's Manual ISBN 0 13 033248 8 is available free of charge to instructors

using the book for a course **Microcontroller Technology** Peter Spasov, 2004 CD ROM contains source code and a special demo version of the THRSim11 simulator *Electronics: A First Course* Owen Bishop, 2007-06-07 Owen Bishop's First Course starts with the basics of electricity and component types and introduces students to practical work almost straightaway. No prior knowledge of electronics is assumed. The approach is student centred with Self Test features to check understanding and numerous Activities suitable for practicals, homework and other assignments. New Multiple Choice Questions are incorporated throughout the text to aid student learning. Key facts, formulae and definitions are highlighted to aid revision and theory is backed up by numerous examples within the book. Each chapter ends with a set of problems which includes exam style questions with numerical answers provided. This text is ideal for a wide range of introductory courses in electronics, technology, physics and engineering. The coverage has been carefully matched to the latest UK syllabuses including GCSE Electronics, GCSE Design, temperature and resistance, sawtooth waveform, fundamentals of digital communication and data transmission, industrial processes, cells and batteries, wind and solar power. CDs, DVDs, mobile phones and the latest LED technology. Owen Bishop's talent for introducing the world of electronics has long been a proven fact with his textbooks, professional introductions and popular circuit construction guides being chosen by thousands of students, lecturers and electronics enthusiasts. Companion website: A new companion website features animated circuit diagrams to indicate the flow of current, calculators to help with elementary electronic design, project work answers to revision questions and multiple choice questions in the book as well as essential circuit diagrams and illustrations from the text made available as PowerPoint slides for lecturers to use in presentations and handouts. <http://books.elsevier.com/companions/0750669608>

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