

Read Free 5 Phase Hybrid Stepping Motor
Microstepping Control

5 Phase Hybrid Stepping Motor Microstepping Control

This book aims to examine innovation in the fields of computer engineering and networking. The book covers important emerging topics in computer engineering and networking, and it will help researchers and engineers improve their knowledge of state-of-art in related areas. The book presents papers from the 4th International Conference on Computer Engineering and Networks (CENet2014) held July 19-20, 2014 in Shanghai, China.

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This book provides an introductory text which will enable the reader to both appreciate the essential characteristics of stepping motor systems and understand how these characteristics are being exploited in the continuing development of new motors, drives and controllers.

Instrumentation and automatic control systems.

Permanent Magnet Motor Technology

Computational Methods and Applications

A Guide to Theory and Practice

Handbook of Fractional-Horsepower Drives

JEE, Journal of Electronic Engineering

System Dynamics

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This volume brings together contributions representing the state-of-the-art in new multimedia and future technology information research, currently a major topic in computer science and electronic engineering. Researchers aim to interoperate multimedia frameworks, transforming the way people work and interact with multimedia data. This book covers future information technology topics including digital and multimedia convergence, ubiquitous and pervasive computing,

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intelligent computing and applications, embedded systems, mobile and wireless communications, bio-inspired computing, grid and cloud computing, semantic web, human-centric computing and social networks, adaptive and context-aware computing, security and trust computing and related areas. Representing the combined proceedings of the 9th International Conference on Multimedia and Ubiquitous Engineering (MUE-15) and the 10th International Conference on Future

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Information Technology (Future Tech 2015), this book aims to provide a complete coverage of the areas outlined and to bring together researchers from academic and industry and other practitioners to share their research ideas, challenges and solutions.

Co-authored by a world-renowned expert in the field, Permanent Magnet Motor Technology: Design and Applications, Second Edition demonstrates the construction of PM motor drives and supplies ready-to-

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implement solutions for common roadblocks. The author presents fundamental equations and calculations to determine and evaluate system performance, efficiency, and reliability; explores modern computer-aided design of PM motors, including the finite element approach; and covers how to select PM motors to meet the specific requirements of electrical drives. The numerous examples, models, and diagrams provided in each chapter give the reader a clear understanding of motor operations and

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characteristics.

This book covers the various function principles of small motors, including rotating field machines, commutator machines, recent developments in the use of electronics in motors and the relationship between the motor and its driven load.

Design and Applications, Third Edition

Control Engineering

Volume I

Multibody Dynamics

Power Electronics Handbook

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Stepping Motors and Their Microprocessor Controls

Stepping motors are used wherever repeated stop-start or intermittent motions are encountered. Found in a diverse range of machines such as clocks, typewriters, automatic draughting machines, numerically controlled machine tools, and computer peripherals, stepping motors offer easy compatibility with digital equipment and ease of control. This thoroughly updated second edition of Stepping Motors offers a practical approach to the subject and relates the workings, design, and construction of

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these motors to underlying electromagnetic principles. The reader is taken through a brief history of stepping-motor development and is provided with expert treatments of the theory, terminology, control systems, and likely applications associated with the devices. The text is copiously illustrated with clear and helpful diagrams and contains much detailed information. It is the perfect introduction for students and professionals in electrical and electronic engineering.

This book presents the recent advances and developments in control, automation, robotics and

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measuring techniques. It presents contributions of top experts in the fields, focused on both theory and industrial practice. The particular chapters present a deep analysis of a specific technical problem which is in general followed by a numerical analysis and simulation and results of an implementation for the solution of a real world problem. The book presents the results of the International Conference AUTOMATION 2014 held 26 - 28 March, 2014 in Warsaw, Poland on Automation – Innovations and Future Perspectives The presented theoretical results, practical solutions and guidelines will be

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useful for both researchers working in the area of engineering sciences and for practitioners solving industrial problems.

*Written for non-specialist users of electric motors and drives, this book explains how electric drives work and compares the performance of the main systems, with many examples of applications. The author's approach - using a minimum of mathematics - has made this book equally popular as an outline for professionals and an introductory student text. * First edition (1990) has sold over 6000 copies. Drives and Controls on the first edition: 'This book is*

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very readable, up-to-date and should be extremely useful to both users and o.e.m. designers. I unhesitatingly recommend it to any busy engineer who needs to make informed judgements about selecting the right drive system.' New features of the second edition: * New section on the cycloconverter drive. * More on switched reluctance motor drives. * More on vector-controlled induction motor drives. * More on power switching devices. * New 'question and answer' sections on common problems and misconceptions. * Updating throughout. *Electric Motors and Drives is for non-specialist users of*

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electric motors and drives. It fills the gap between specialist textbooks (which are pitched at a level which is too academic for the average user) and the more prosaic 'handbooks' which are filled with useful detail but provide little opportunity for the development of any real insight or understanding. The book explores most of the widely-used modern types of motor and drive, including conventional and brushless d.c., induction motors (mains and inverter-fed), stepping motors, synchronous motors (mains and converter-fed) and reluctance motors.

Step Motors and Control Systems

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Power Electronics and Motor Drive Systems

*Design with Microprocessors for Mechanical
Engineers*

*Mechanisms and Mechanical Devices Sourcebook,
Fourth Edition*

A Guide to Modern Theory and Practice

2,501 mechanisms and mechanical devices

– at your fingertips! A one-of-a-kind

pictorial directory, Mechanisms and

Mechanical Devices Sourcebook, Third

Edition, gives you drawings and

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descriptions of time-tested components, mechanisms, and devices. A carefully compiled index lets you quickly find a specific component which may very well be the exact problem-solving answer you've been seeking. You can count on this guide to help you:

- * Recycle successful mechanical inventions into new products, with or without modifications
- * Design basic mechanisms from scratch with a chapter of tutorial text and formulas
- * Save time

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researching patents * Get a refresher on the design and function of bearings, belts, brakes, clutches, couplings, cranks, feeders, gears, genevas, joints, latches, linkages, pumps, screws, springs, and switches Stay on top of present and future trends in mechanical engineering and machine design, with up-to-date treatments of motion control systems; 2D and 3D CAD software; industrial robots and rapid prototyping (RP) systems; recent

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research and spinoffs of MEMS
technology

This Is The First Indian Publication
Devoted Solely To Stepper Motors. It
Covers All Aspects Of Stepper Motors:
Construction, Operation And
Characteristics Of Stepper Motors;
Electronic As Well As Microprocessor
Based Controllers For Stepper Motors;
Stepper Motor Applications In Control,
Instrumentation, Computer Peripheral
Devices, Cnc Systems, Robotics, Etc.;

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And Stepper Motor Analysis And Design. Furthermore, The Book Contains Certain Special Features Which Have Appeared, Perhaps For The First Time, In A Book Of This Nature Such As The Latest Remp Disk Magnet Stepper Motor Micros-Tepping Controller, Etc. Certain Indian Contributions To Stepper Motor Controller Technology Have Been Highlighted In Microprocessor-Based Controllers For Stepper Motor. For Practising Engineers And Students,

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Selection And Sizing Of Stepper Motor Has Been Discussed In Detail And Illustrated With Typical Illustrative Examples.

Addressing topics from system elements and simple first- and second-order systems to complex lumped- and distributed-parameter models of practical machines and processes, this work details the utility of systems dynamics for the analysis and design of mechanical, fluid, thermal and mixed

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engineering systems. It emphasizes digital simulation and integrates frequency-response methods throughout.; College or university bookshops may order five or more copies at a special student price, available on request.

A Study of Noise and Vibration of
5-phase Hybrid Stepping Motors
Second International Conference on
Power Electronics, Machines, and Drives
(PEMD 2004)

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A Primer with MATLAB

Proceedings

Proceedings of the 6th International

Asia Conference on Industrial

Engineering and Management Innovation

Proceedings of the ... Annual

International Motorcon ... Conference

Less expensive, lighter, and smaller than its electromechanical counterparts, power electronics lie at the very heart of controlling and converting electric energy, which in turn lies at the heart of making that energy useful. From household appliances

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to space-faring vehicles, the applications of power electronics are virtually limitless. Until now, however, the same could not be said for access to up-to-date reference books devoted to power electronics. Written by engineers for engineers, The Power Electronics Handbook covers the full range of relevant topics, from basic principles to cutting-edge applications. Compiled from contributions by an international panel of experts and full of illustrations, this is not a theoretical tome, but a practical and enlightening presentation of the usefulness and variety of technologies that encompass

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the field. For modern and emerging applications, power electronic devices and systems must be small, efficient, lightweight, controllable, reliable, and economical. The Power Electronics Handbook is your key to understanding those devices, incorporating them into controllable circuits, and implementing those systems into applications from virtually every area of electrical engineering.

An electric machine is a device that converts mechanical energy into electrical energy or vice versa. It can take the form of an electric generator, electric motor, or

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transformer. Electric generators produce virtually all electric power we use all over the world. Electric machine blends the three major areas of electrical engineering: power, control and power electronics. This book presents the relation of power quantities for the machine as the current, voltage power flow, power losses, and efficiency. This book will provide a good understanding of the behavior and its drive, beginning with the study of salient features of electrical dc and ac machines.

Designing with microprocessors or mechatronics (the integration of mechanical

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and electronic components) is an emerging field within mechanical engineering. This text covers microprocessor-based design specifically for mechanical engineers; it is suitable for upper level courses in Design with Microprocessors offered in Mechanical Engineering departments. The emphasis is on microprocessor-based design in consumer products rather than in computers. The book is intended to help the mechanical engineer become familiar with the microprocessor as a design tool.

Stepping Motors

The Industrial Electronics Handbook

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**Future Information Technology
Proceedings of the 4th International
Conference on Computer Engineering and
Networks
Small Electric Motors
IAS '93**

A Study of Noise and Vibration of 5-phase Hybrid Stepping
Motors Stepping Motors and Their Microprocessor
Controls Mechanisms and Mechanical Devices Sourcebook,
5th Edition McGraw Hill Professional

Aimed at engineers in product development as well as
advanced students of electrical engineering, control and
mechatronics, this is the first English-language edition of the
bestselling German book in which the authors address the

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issue of fractional horsepower drives. They are crucial for all kinds of products, from simple domestic utensils to the most complex and advanced technological applications. This handbook gives a practical overview on all of the available drives.

Over 2000 drawings make this sourcebook a gold mine of information for learning and innovating in mechanical design. The fourth edition of this unique engineering reference book covers the past, present, and future of mechanisms and mechanical devices. Among the thousands of proven mechanisms illustrated and described are many suitable for recycling into new mechanical, electromechanical, or mechatronic products and systems. Overviews of robotics, rapid prototyping, MEMS, and nanotechnology will get you up-

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to-speed on these cutting-edge technologies. Easy-to-read tutorial chapters on the basics of mechanisms and motion control will introduce those subjects to you or refresh your knowledge of them. Comprehensive index to speed your search for topics of interest Glossaries of terms for gears, cams, mechanisms, and robotics New industrial robot specifications and applications Mobile robots for exploration, scientific research, and defense INSIDE Mechanisms and Mechanical Devices Sourcebook, 4th Edition Basics of Mechanisms □ Motion Control Systems □ Industrial Robots □ Mobile Robots □ Drives and Mechanisms That Include Linkages, Gears, Cams, Geneva, and Ratchets □ Clutches and Brakes □ Devices That Latch, Fasten, and Clamp □ Chains, Belts, Springs, and Screws □ Shaft Couplings and

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Connections □ Machines That Perform Specific Motions or
Package, Convey, Handle, or Assure Safety □ Systems for
Torque, Speed, Tension, and Limit Control □ Pneumatic,
Hydraulic, Electric, and Electronic Instruments and Controls □
Computer-Aided Design Concepts □ Rapid Prototyping □ New
Directions in Mechanical Engineering

NASA Tech Briefs

Design and Applications, Second Edition,
Machine Design

Stepper Motors : Fundamentals, Applications And Design

Motion Control Report

Fundamentals, Types and Applications

The 6th International Asia Conference on Industrial

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Engineering and Management Innovation is sponsored by the Chinese Industrial Engineering Institution and organized by Tianjin University. The conference aims to share and disseminate information on the most recent and relevant researches, theories and practices in industrial and system engineering to promote their development and application in university and enterprises.

From traditional topics that form the core of industrial electronics, to new and emerging concepts and technologies, The Industrial Electronics Handbook, in a single volume, has the field covered. Nowhere else will you find so much information on so many major topics in

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the field. For facts you need every day, and for discussions on topics you have only dreamed of, *The Industrial Electronics Handbook* is an ideal reference.

The importance of permanent magnet (PM) motor technology and its impact on electromechanical drives has grown exponentially since the publication of the bestselling second edition. The PM brushless motor market has grown considerably faster than the overall motion control market. This rapid growth makes it essential for electrical and electromechanical engineers and students to stay up-to-date on developments in modern electrical motors and drives, including their control, simulation, and CAD.

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Reflecting innovations in the development of PM motors for electromechanical drives, Permanent Magnet Motor Technology: Design and Applications, Third Edition demonstrates the construction of PM motor drives and supplies ready-to-implement solutions to common roadblocks along the way. This edition supplies fundamental equations and calculations for determining and evaluating system performance, efficiency, reliability, and cost. It explores modern computer-aided design of PM motors, including the finite element approach, and explains how to select PM motors to meet the specific requirements of electrical drives. The numerous examples,

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models, and diagrams provided in each chapter facilitate a lucid understanding of motor operations and characteristics. This 3rd edition of a bestselling reference has been thoroughly revised to include: Chapters on high speed motors and micromotors Advances in permanent magnet motor technology Additional numerical examples and illustrations An increased effort to bridge the gap between theory and industrial applications Modified research results The growing global trend toward energy conservation makes it quite possible that the era of the PM brushless motor drive is just around the corner. This reference book will give engineers, researchers, and

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graduate-level students the comprehensive understanding required to develop the breakthroughs that will push this exciting technology to the forefront.

The Power Electronics Handbook

Proceedings of 2021 Chinese Intelligent Systems
Conference

Modeling, Analysis, Simulation, Design

Conference Record of the 1993 IEEE Industry

Applications Conference, Twenty-eighth IAS Annual
Meeting

Electric Motors and Drives

31 March - 2 April 2004, University of Edinburgh, UK

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Power Electronics Handbook, Fourth Edition, brings together over 100 years of combined experience in the specialist areas of power engineering to offer a fully revised and updated expert guide to total power solutions. Designed to provide the best technical and most commercially viable solutions available, this handbook undertakes any or all aspects of a project requiring specialist design, installation, commissioning and maintenance services. Comprising a complete revision throughout and enhanced chapters on semiconductor diodes and transistors and thyristors, this volume includes renewable resource content useful for the new generation of engineering professionals. This market leading reference has new chapters covering

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electric traction theory and motors and wide band gap (WBG) materials and devices. With this book in hand, engineers will be able to execute design, analysis and evaluation of assigned projects using sound engineering principles and adhering to the business policies and product/program requirements. Includes a list of leading international academic and professional contributors Offers practical concepts and developments for laboratory test plans Includes new technical chapters on electric vehicle charging and traction theory and motors Includes renewable resource content useful for the new generation of engineering professionals Power Electronics and Motor Drive Systems is designed to aid electrical engineers, researchers, and students to

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analyze and address common problems in state-of-the-art power electronics technologies. Author Stefanos Manias supplies a detailed discussion of the theory of power electronics circuits and electronic power conversion technology systems, with common problems and methods of analysis to critically evaluate results. These theories are reinforced by simulation examples using well-known and widely available software programs, including SPICE, PSIM, and MATLAB/SIMULINK. Manias expertly analyzes power electronic circuits with basic power semiconductor devices, as well as the new power electronic converters. He also clearly and comprehensively provides an analysis of modulation and output voltage, current

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control techniques, passive and active filtering, and the characteristics and gating circuits of different power semiconductor switches, such as BJTs, IGBTs, MOSFETs, IGCTs, MCTs and GTOs. Includes step-by-step analysis of power electronic systems Reinforced by simulation examples using SPICE, PSIM, and MATLAB/SIMULINK Provides 110 common problems and solutions in power electronics technologies

This book includes selected papers from the ECCOMAS Thematic Conference on Multibody Dynamics, that took place in Barcelona, Spain, from June 29 to July 2, 2015. By having its origin in analytical and continuum mechanics, as well as in computer science and applied mathematics, multibody dynamics provides a basis for

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analysis and virtual prototyping of innovative applications in many fields of contemporary engineering. With the utilization of computational models and algorithms that classically belonged to different fields of applied science, multibody dynamics delivers reliable simulation platforms for diverse highly-developed industrial products such as vehicle and railway systems, aeronautical and space vehicles, robotic manipulators, smart structures, biomechanical systems, and nanotechnologies.

**Incremental Motion Control: Step motors and control systems, edited by B. C. Kuo
Innovation and Practice of Industrial Engineering and Management (volume 2)**

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**Recent Advances in Automation, Robotics and
Measuring Techniques**

Power Transmission Design

**Advanced Multimedia and Ubiquitous Engineering
CENet2014**

**Please note this is a short discount publication. In today's
manufacturing environment, Motion Control plays a major role
in virtually every project. The Motion Control Report provides
a comprehensive overview of the technology of Motion Control:
* Design Considerations * Technologies * Methods to Control
Motion * Examples of Motion Control in Systems * A Detailed
Vendors List**

**This book presents the proceedings of the 17th Chinese
Intelligent Systems Conference, held in Fuzhou, China, on Oct**

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16-17, 2021. It focuses on new theoretical results and techniques in the field of intelligent systems and control. This is achieved by providing in-depth study on a number of major topics such as Multi-Agent Systems, Complex Networks, Intelligent Robots, Complex System Theory and Swarm Behavior, Event-Triggered Control and Data-Driven Control, Robust and Adaptive Control, Big Data and Brain Science, Process Control, Intelligent Sensor and Detection Technology, Deep learning and Learning Control Guidance, Navigation and Control of Flight Vehicles and so on. The book is particularly suited for readers who are interested in learning intelligent system and control and artificial intelligence. The book can benefit researchers, engineers, and graduate students.

THOUSANDS OF DRAWINGS AND DESCRIPTIONS

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COVER INNOVATIONS IN MECHANICAL ENGINEERING

Fully revised throughout, this abundantly illustrated reference describes proven mechanisms and mechanical devices. Each illustration represents a design concept that can easily be recycled for use in new or modified mechanical, electromechanical, or mechatronic products. Tutorials on the basics of mechanisms and motion control systems introduce you to those subjects or act as a refresher. Mechanisms and Mechanical Devices Sourcebook, Fifth Edition, contains new chapters on mechanisms for converting renewable energy into electrical power, 3D digital prototyping and simulation, and progress in MEMS and nanotechnology based on carbon nanotubes. A new chapter on stationary and mobile robots describes their roles in industry, science, national defense, and

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medicine. The latest advances in rapid prototyping are also discussed. This practical guide will get you up to speed on many classical mechanical devices as well as the hot new topics in mechanical engineering. COMPREHENSIVE INDEX MAKES IT EASY TO FIND SUBJECTS OF INTEREST GLOSSARIES OF TERMS ON: CAMS, GEARS, MECHANICS, MOTION CONTROL, ROBOTICS, WIND TURBINES, PUMPS, AND 3D DIGITAL PROTOTYPING AND SIMULATION COVERAGE OF MOBILE ROBOTS THAT EXPLORE MARS, PERFORM MILITARY DUTIES AND PUBLIC SERVICE, HANDLE AUTOMATED DELIVERY, CONDUCT SURVEILLANCE FROM THE AIR, AND SEARCH UNDER THE SEA DETAILS ON THE MECHANISMS IN RENEWABLE-ENERGY AND WIND-TURBINE AND

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SOLAR-THERMAL FARMS AND WAVE-MOTION POWER PLANTS Mechanisms and Mechanical Devices Sourcebook, Fifth Edition, covers: Basics of mechanisms * Motion control systems * New stationary and mobile robots * New mechanisms for renewable power generation * Drives and mechanisms with linkages, gears, cams, genevas, and ratchets * Clutches and brakes * Latching, fastening, and clamping devices and mechanisms * Chains, belts, springs, and screws * Shaft couplings and connections * Motion-specific devices * Packaging, conveying, handling, and safety mechanisms and machines * Torque, speed, tension, and limit control systems * Instruments and controls: pneumatic, hydraulic, electric, and electronic * New 3D digital prototyping and simulation techniques * New rapid prototyping methods * New directions

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in mechanical engineering

**Fundamentals of Electric Machines: A Primer with MATLAB
Analysis on Dynamic Characteristics of Hybrid Stepping Motor
and Control of Its Power Converter**

**Mechanisms and Mechanical Devices Sourcebook, 5th Edition
Mechanisms and Mechanical Devices Sourcebook**