

PROGRAMMABLE LOGIC CONTROLLERS



**Frank D.
Petruzella**

Fourth Edition

Programmable Logic Controllers Petruzella 4th Edition

Y Pai



Programmable Logic Controllers Petruzella 4th Edition:

Programmable Logic Controllers, Activities Manual Frank D. Petruzella, 1996-10 PROGRAMMABLE LOGIC CONTROLLER PEng. Emmanuel Pregrino Mgissha, 2024-05-05 The programmable logic controller represents a key factor in industrial automation because before programmable logic controllers manufacturing plants employed relay based circuitry to energise different loads based on how the relays were wired together The circuit patterns used for these drawings are known as ladder diagrams Relays were costly required constant maintenance and could not be easily reconfigured As PLCs took over this process it was essential to maintain a similarity to the old system thus ladder logic was created as the first PLC programming language Ladder logic is one of the top 5 most popular types of PLC programming languages used in various module syllabuses in various fields of Engineering courses including Electrical Electronics Telecommunications Mechanical Mechatronics Electromechanical Oil and Gas Ship Building and Marine Engineering Pneumatic and Hydraulic Systems to design various projects and systems in various areas including domestic residence industrial systems control of machinery commercial mining sector aircraft electric vehicles marine automation power stations power substations electric train and railway electrification systems etc *Programmable Logic Controllers* Frank D. Petruzella, 2011-02-16 This fourth edition of Programmable Logic Controllers continues to provide an up to date introduction to all aspects of PLC programming installation and maintaining procedures No previous knowledge of PLC systems or programming is assumed As one reviewer of this edition put it I honestly believe that someone with little or no background to PLC systems could take this book and teach themselves PLCs Programmable Logic Controllers Frank PETRUZELLA, 2022 Programmable logic controllers PLCs continue to evolve as new technologies are added to their capabilities As PLC technology has advanced so have programming languages and communications capabilities Today s PLCs offer faster scan times space efficient high density input output systems and special interfaces to allow non traditional devices to be attached directly to the PLC Now in its Sixth Edition changes made to the content of the text have been made solely based on reviews from current instructors and include material that should be added or deleted from chapters topics requiring more in depth coverage increased integration of the ControlLogix platform of controllers chapter modifications require to meet current curriculum needs Questions and answers for job interview Offshore Oil & Gas Platforms Petrogav International Oil & Gas Training Center, 2020-07-01 The job interview is probably the most important step you will take in your job search journey Because it s always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry Since these questions are so common hiring managers will expect you to be able to answer them smoothly and without hesitation This eBook contains 291 questions and answers for job interview and as a BONUS web addresses to 288 video movies for a better understanding of the technological process This course covers aspects like HSE Process Mechanical Electrical and Instrumentation Control that will enable you

to apply for any position in the Oil and Gas Industry [100 technical questions and answers for job interview Offshore Oil & Gas Rigs](#) Petrogav International Oil & Gas Training Center,2020-06-30 The job interview is probably the most important step you will take in your job search journey Because it s always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry Since these questions are so common hiring managers will expect you to be able to answer them smoothly and without hesitation This eBook contains 100 questions and answers for job interview and as a BONUS web addresses to 230 video movies for a better understanding of the technological process This course covers aspects like HSE Process Mechanical Electrical and Instrumentation Control that will enable you to apply for any position in the Oil and Gas Industry **Technical questions and answers for job interview Offshore Oil & Gas Platforms** Petrogav International Oil & Gas Training Center,2020-06-30 The job interview is probably the most important step you will take in your job search journey Because it s always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry Since these questions are so common hiring managers will expect you to be able to answer them smoothly and without hesitation This eBook contains 273 questions and answers for job interview and as a BONUS web addresses to 100 video movies for a better understanding of the technological process This course covers aspects like HSE Process Mechanical Electrical and Instrumentation Control that will enable you to apply for any position in the Oil and Gas Industry **100 technical questions and answers for job interview Offshore Drilling Rigs** Petrogav International Oil & Gas Training Center,2020-06-28 The job interview is probably the most important step you will take in your job search journey Because it s always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry Since these questions are so common hiring managers will expect you to be able to answer them smoothly and without hesitation This eBook contains 100 questions and answers for job interview and as a BONUS 230 links to video movies This course covers aspects like HSE Process Mechanical Electrical and Instrumentation Control that will enable you to apply for any position in the Oil and Gas Industry [Technical questions and answers for job interview Offshore Oil & Gas Rigs](#) Petrogav International Oil & Gas Training Center,2020-06-29 The job interview is probably the most important step you will take in your job search journey Because it s always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry Since these questions are so common hiring managers will expect you to be able to answer them smoothly and without hesitation This eBook contains 273 questions and answers for job interview and as a BONUS web addresses to 218 video movies for a better understanding of the technological process This course covers aspects like HSE Process Mechanical Electrical and

Instrumentation Control that will enable you to apply for any position in the Oil and Gas Industry **Subject Guide to Books in Print** ,1991 **JOB INTERVIEW Offshore Oil & Gas Rigs** Petrogav International Oil & Gas Training Center,2020-07-01 The job interview is probably the most important step you will take in your job search journey Because it is always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry Since these questions are so common hiring managers will expect you to be able to answer them smoothly and without hesitation This eBook contains 282 questions and answers for job interview and as a BONUS web addresses to 289 video movies for a better understanding of the technological process This course covers aspects like HSE Process Mechanical Electrical and Instrumentation Control that will enable you to apply for any position in the Oil and Gas Industry **The Indian National Bibliography** ,2018-10 *Loose Leaf for Programmable Logic Controllers* Frank Petruzella,2016-02-02 The fifth edition of Programmable Logic Controllers continues to provide an up to date introduction to all aspects of PLC programming installation and maintaining procedures Improvements have been made to every chapter The content applied programming examples available instructor and student resources including lesson PowerPoint presentations with simulated PLC program videos Test Generator LogixPro Lab Manual and Activities Manual leaves little to be desired by the student or instructor With the fifth edition students and instructors have access to McGraw s digital products Connect and SmartBook for the first time Connect is the only integrated learning system that empowers students by continuously adapting to deliver precisely what they need when they need it how they need it so that your class time is more engaging and effective **Forthcoming Books** Rose Army,2004 **Perry's Chemical Engineers' Handbook, 9th Edition** Don W. Green,Marylee Z. Southard,2018-07-13 Up to Date Coverage of All Chemical Engineering Topics from the Fundamentals to the State of the Art Now in its 85th Anniversary Edition this industry standard resource has equipped generations of engineers and chemists with vital information data and insights Thoroughly revised to reflect the latest technological advances and processes Perry s Chemical Engineers Handbook Ninth Edition provides unsurpassed coverage of every aspect of chemical engineering You will get comprehensive details on chemical processes reactor modeling biological processes biochemical and membrane separation process and chemical plant safety and much more This fully updated edition covers Unit Conversion Factors and Symbols Physical and Chemical Data including Prediction and Correlation of Physical Properties Mathematics including Differential and Integral Calculus Statistics Optimization Thermodynamics Heat and Mass Transfer Fluid and Particle Dynamics Reaction Kinetics Process Control and Instrumentation Process Economics Transport and Storage of Fluids Heat Transfer Operations and Equipment Psychrometry Evaporative Cooling and Solids Drying Distillation Gas Absorption and Gas Liquid System Design Liquid Liquid Extraction Operations and Equipment Adsorption and Ion Exchange Gas Solid Operations and Equipment Liquid Solid Operations and Equipment Solid Solid Operations and Equipment Chemical Reactors Bio based

Reactions and Processing Waste Management including Air Wastewater and Solid Waste Management Process Safety including Inherently Safer Design Energy Resources Conversion and Utilization Materials of Construction

Programmable Logic Controllers William Bolton, 2015-03-06 This textbook now in its sixth edition continues to be straightforward and easy to read presenting the principles of PLCs while not tying itself to one manufacturer or another Extensive examples and chapter ending problems utilize several popular PLCs highlighting understanding of fundamentals that can be used regardless of manufacturer This book will help you to understand the main design characteristics internal architecture and operating principles of PLCs as well as Identify safety issues and methods for fault diagnosis testing and debugging New to This edition A new chapter 1 with a comparison of relay controlled systems microprocessor controlled systems and the programmable logic controller a discussion of PLC hardware and architecture examples from various PLC manufacturers and coverage of security the IEC programming standard programming devices and manufacturer s software More detail of programming using Sequential Function Charts Extended coverage of the sequencer More Information on fault finding including testing inputs and outputs with an illustration of how it is done with the PLC manufacturer s software New case studies A methodical introduction with many illustrations describing how to program PLCs no matter the manufacturer and how to use internal relays timers counters shift registers sequencers and data handling facilities Consideration of the standards given by IEC 1131 3 and the programming methods of ladder functional block diagram instruction list structured text and sequential function chart Many worked examples multiple choice questions and problems are included with answers to all multiple choice questions and problems given at the end of the book **American Book Publishing Record** ,1996-09 *Books in Print Supplement* ,2002 **Bibliographic Guide to Technology** New York Public Library. Research Libraries,1989 **Programmable Logic Controllers: an Emphasis on Design and Application, 4th Edition** Kelvin T. Erickson,2023-02

Unveiling the Magic of Words: A Report on "**Programmable Logic Controllers Petruzella 4th Edition**"

In a global defined by information and interconnectivity, the enchanting power of words has acquired unparalleled significance. Their power to kindle emotions, provoke contemplation, and ignite transformative change is actually awe-inspiring. Enter the realm of "**Programmable Logic Controllers Petruzella 4th Edition**," a mesmerizing literary masterpiece penned with a distinguished author, guiding readers on a profound journey to unravel the secrets and potential hidden within every word. In this critique, we shall delve in to the book is central themes, examine its distinctive writing style, and assess its profound impact on the souls of its readers.

https://matrix.jamesarcher.co/About/virtual-library/Documents/environmental_science_and_engineering_by_ravi_krishnan_gogle_books.pdf

Table of Contents Programmable Logic Controllers Petruzella 4th Edition

1. Understanding the eBook Programmable Logic Controllers Petruzella 4th Edition
 - The Rise of Digital Reading Programmable Logic Controllers Petruzella 4th Edition
 - Advantages of eBooks Over Traditional Books
2. Identifying Programmable Logic Controllers Petruzella 4th Edition
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Programmable Logic Controllers Petruzella 4th Edition
 - User-Friendly Interface
4. Exploring eBook Recommendations from Programmable Logic Controllers Petruzella 4th Edition
 - Personalized Recommendations
 - Programmable Logic Controllers Petruzella 4th Edition User Reviews and Ratings

- Programmable Logic Controllers Petruzella 4th Edition and Bestseller Lists
- 5. Accessing Programmable Logic Controllers Petruzella 4th Edition Free and Paid eBooks
 - Programmable Logic Controllers Petruzella 4th Edition Public Domain eBooks
 - Programmable Logic Controllers Petruzella 4th Edition eBook Subscription Services
 - Programmable Logic Controllers Petruzella 4th Edition Budget-Friendly Options
- 6. Navigating Programmable Logic Controllers Petruzella 4th Edition eBook Formats
 - ePub, PDF, MOBI, and More
 - Programmable Logic Controllers Petruzella 4th Edition Compatibility with Devices
 - Programmable Logic Controllers Petruzella 4th Edition Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Programmable Logic Controllers Petruzella 4th Edition
 - Highlighting and Note-Taking Programmable Logic Controllers Petruzella 4th Edition
 - Interactive Elements Programmable Logic Controllers Petruzella 4th Edition
- 8. Staying Engaged with Programmable Logic Controllers Petruzella 4th Edition
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Programmable Logic Controllers Petruzella 4th Edition
- 9. Balancing eBooks and Physical Books Programmable Logic Controllers Petruzella 4th Edition
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Programmable Logic Controllers Petruzella 4th Edition
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Programmable Logic Controllers Petruzella 4th Edition
 - Setting Reading Goals Programmable Logic Controllers Petruzella 4th Edition
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Programmable Logic Controllers Petruzella 4th Edition
 - Fact-Checking eBook Content of Programmable Logic Controllers Petruzella 4th Edition
 - Distinguishing Credible Sources

13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

Programmable Logic Controllers Petruzella 4th Edition Introduction

In today's digital age, the availability of Programmable Logic Controllers Petruzella 4th Edition books and manuals for download has revolutionized the way we access information. Gone are the days of physically flipping through pages and carrying heavy textbooks or manuals. With just a few clicks, we can now access a wealth of knowledge from the comfort of our own homes or on the go. This article will explore the advantages of Programmable Logic Controllers Petruzella 4th Edition books and manuals for download, along with some popular platforms that offer these resources. One of the significant advantages of Programmable Logic Controllers Petruzella 4th Edition books and manuals for download is the cost-saving aspect. Traditional books and manuals can be costly, especially if you need to purchase several of them for educational or professional purposes. By accessing Programmable Logic Controllers Petruzella 4th Edition versions, you eliminate the need to spend money on physical copies. This not only saves you money but also reduces the environmental impact associated with book production and transportation. Furthermore, Programmable Logic Controllers Petruzella 4th Edition books and manuals for download are incredibly convenient. With just a computer or smartphone and an internet connection, you can access a vast library of resources on any subject imaginable. Whether you're a student looking for textbooks, a professional seeking industry-specific manuals, or someone interested in self-improvement, these digital resources provide an efficient and accessible means of acquiring knowledge. Moreover, PDF books and manuals offer a range of benefits compared to other digital formats. PDF files are designed to retain their formatting regardless of the device used to open them. This ensures that the content appears exactly as intended by the author, with no loss of formatting or missing graphics. Additionally, PDF files can be easily annotated, bookmarked, and searched for specific terms, making them highly practical for studying or referencing. When it comes to accessing Programmable Logic Controllers Petruzella 4th Edition books and manuals, several platforms offer an extensive collection of resources. One such platform is Project Gutenberg, a nonprofit organization that provides over 60,000 free eBooks. These books are primarily in the public domain, meaning they can be freely distributed and downloaded. Project Gutenberg offers a wide range of classic literature, making it an excellent resource for literature enthusiasts. Another popular platform for Programmable Logic Controllers Petruzella 4th Edition books and manuals is Open

Library. Open Library is an initiative of the Internet Archive, a non-profit organization dedicated to digitizing cultural artifacts and making them accessible to the public. Open Library hosts millions of books, including both public domain works and contemporary titles. It also allows users to borrow digital copies of certain books for a limited period, similar to a library lending system. Additionally, many universities and educational institutions have their own digital libraries that provide free access to PDF books and manuals. These libraries often offer academic texts, research papers, and technical manuals, making them invaluable resources for students and researchers. Some notable examples include MIT OpenCourseWare, which offers free access to course materials from the Massachusetts Institute of Technology, and the Digital Public Library of America, which provides a vast collection of digitized books and historical documents. In conclusion, Programmable Logic Controllers Petruzella 4th Edition books and manuals for download have transformed the way we access information. They provide a cost-effective and convenient means of acquiring knowledge, offering the ability to access a vast library of resources at our fingertips. With platforms like Project Gutenberg, Open Library, and various digital libraries offered by educational institutions, we have access to an ever-expanding collection of books and manuals. Whether for educational, professional, or personal purposes, these digital resources serve as valuable tools for continuous learning and self-improvement. So why not take advantage of the vast world of Programmable Logic Controllers Petruzella 4th Edition books and manuals for download and embark on your journey of knowledge?

FAQs About Programmable Logic Controllers Petruzella 4th Edition Books

How do I know which eBook platform is the best for me? Finding the best eBook platform depends on your reading preferences and device compatibility. Research different platforms, read user reviews, and explore their features before making a choice. Are free eBooks of good quality? Yes, many reputable platforms offer high-quality free eBooks, including classics and public domain works. However, make sure to verify the source to ensure the eBook credibility. Can I read eBooks without an eReader? Absolutely! Most eBook platforms offer web-based readers or mobile apps that allow you to read eBooks on your computer, tablet, or smartphone. How do I avoid digital eye strain while reading eBooks? To prevent digital eye strain, take regular breaks, adjust the font size and background color, and ensure proper lighting while reading eBooks. What the advantage of interactive eBooks? Interactive eBooks incorporate multimedia elements, quizzes, and activities, enhancing the reader engagement and providing a more immersive learning experience. Programmable Logic Controllers Petruzella 4th Edition is one of the best book in our library for free trial. We provide copy of Programmable Logic Controllers Petruzella 4th Edition in digital format, so the resources that you find are reliable. There are also many Ebooks of related with Programmable Logic Controllers Petruzella 4th Edition. Where to download Programmable Logic Controllers Petruzella

4th Edition online for free? Are you looking for Programmable Logic Controllers Petruzella 4th Edition PDF? This is definitely going to save you time and cash in something you should think about.

Find Programmable Logic Controllers Petruzella 4th Edition :

[environmental science and engineering by ravi krishnan google books](#)
[environmental biotechnology principles and applications solution manual](#)
[excel das zauberbuch](#)

esp32 built in oled heltec wifi kit 32 robot zero one

[examining factors affecting diversity in the workplace webs](#)
[english russian medical dictionary](#)
[environmental engineering by gerard kiely pdf download](#)

english test papers for grade 7

[enlightened sexism the seductive message that feminisms work is done](#)
[everything science grade 11 teacher guide](#)
[exercises in oral radiology and interpretation](#)
[enlightenment through the path of kundalini a to a positive spiritual awakening and overcoming kundalini syndrome](#)
[essentials of abnormal psychology in a changing world second canadian edition with companion website with gradetracker](#)
[2nd edition](#)
[explanatory notes to the harmonized system download](#)
[evaluating websites and web services interdisciplinary perspectives on user satisfaction advances in web technologies and engineering](#)

Programmable Logic Controllers Petruzella 4th Edition :

An Introduction To Statistical Methods And Data Analysis ... Access An Introduction to Statistical Methods and Data Analysis 7th Edition solutions now. Our solutions are written by Chegg experts so you can be assured ... An Introduction To Statistical Methods And Data Analysis ... Get instant access to our step-by-step An Introduction To Statistical Methods And Data Analysis solutions manual. Our solution manuals are written by Chegg ... An Introduction to Statistical Methods and Data Analysis Textbook solutions for An Introduction to Statistical Methods and Data Analysis... 7th Edition R. Lyman Ott and others in this series. Student Solutions Manual for Introduction to Statistical ... Amazon.com: Student Solutions Manual for

Introduction to Statistical Methods and Data Analysis: 9780534371234: Ott, R. Lyman, Longnecker, Micheal T.: Books. Student Solutions Manual for Ott/Longnecker's ... - Cengage Student Solutions Manual for Ott/Longnecker's An Introduction to Statistical Methods and Data Analysis, 7th | 7th Edition. Introduction To Statistical Methods And Data Analysis 6th ... Apr 2, 2019 — Introduction To Statistical Methods And Data Analysis 6th Edition Ott Solutions Manual by Rama - Issuu. An Introduction to Statistical Methods and Data Analysis Find step-by-step solutions and answers to An Introduction to Statistical Methods and Data Analysis - 9780495017585, as well as thousands of textbooks so ... Student solutions manual for Ott/Longnecker's An ... Student solutions manual for Ott/Longnecker's An introduction to statistical methods and data analysis. Show more ; Authors: Michael Longnecker, Lyman Ott. Student Solutions Manual for Ott/Longnecker's An ... Student Solutions Manual for Ott/Longnecker's An Introduction to Statistical Methods and Data Analysis, 7th | 7th Edition. Selection of Appropriate Statistical Methods for Data Analysis by P Mishra · 2019 · Cited by 162 — Two main statistical methods are used in data analysis: descriptive statistics, which summarizes data using indexes such as mean and median and another is ... Theories of Development: Concepts and Applications (5th ... The result of extensive scholarship and consultation with leading scholars, this classic text introduces students to twenty-four theorists and compares and ... Theories of Development: Concepts and Applications ... Theories of Development: Concepts and Applications (5th Edition) (MySearchLab Series). William Crain. 4.5 out of 5 stars 82. Paperback. \$83.04\$83.04. Theories of development : concepts and applications Theories of development : concepts and applications. Author: William C. Crain ... 5th ed View all formats and editions. Publisher: Pearson/Prentice Hall, Upper ... Theories of Development: Concepts and Applications (5th ... This engaging book, written with the help of extensive scholarship and leading scholars, introduces learners to twenty-four different theorists and compares ... Theories of Development: Concepts and Applications Theories of Development: Concepts and Applications. Author, William C. Crain. Edition, 5, illustrated. Publisher, Pearson/Prentice Hall, 2005. Original from ... Theories of Development Concepts and Applications ... Theories of Development: Concepts and Applications, Sixth Edition. William Crain. Copyright © 2011 by Pearson Education, Inc. Published by Pearson. Prentice ... Theories of development: Concepts and applications This engaging book, written with the help of extensive scholarship and leading scholars, introduces learners to twenty-four different theorists and compares ... Theories of Development Concepts and Applications | Rent Theories of Development5th edition ; ISBN-13: 9780131849914 ; Authors: William Crain, William C Crain ; Full Title: Theories of Development: Concepts and ... Theories of Development: Concepts and Applications Emphasizing the theories that build upon the developmental tradition established by Rousseau, this text also covers theories in the environmental/learning ... Theories of Development: Concepts and Applications From Locke and Rousseau to Piaget and Bandura, scholars have advanced our understanding of psychological development. In this lively and readable book, Crain ... Chevrolet Venture Starter AutoZone's dependable starters rotate the engine between 85 and 150 RPMs and connect to high-amperage batteries so that engines can

ignite. New Starter Compatible With 2001-2005 Chevy ... SPECIFICATIONS: 1.4kW/12 Volt, CW, 9-Tooth Pinion UNIT TYPE: PG260D PMGR SERIES: PG260D DESIGN: PMGR VOLTAGE: 12. KW: 1.4. ROTATION: CW NUMBER OF TEETH: 9 2003 Chevrolet Venture - Starter - O'Reilly Auto Parts ACDelco Starter - 337-1030 ... A starter is an electric motor that engages your flexplate to spin your engine on startup. It includes a bendix, which is a ... Chevrolet Venture Starter Low prices on Starter for your Chevrolet Venture at Advance Auto Parts. Find aftermarket and OEM parts online or at a local store near you. Chevrolet Venture Starter Motor New Starter 2003 CHEVROLET VENTURE 3.4L V6. \$5499. current price \$54.99. New ... Starter - Compatible with 1997 - 2005 Chevy Venture 3.4L V6 1998 1999 2000 2001 ... Starters for Chevrolet Venture for sale Get the best deals on Starters for Chevrolet Venture when you shop the largest online selection at eBay.com. Free shipping on many items | Browse your ... Starter -Chevy 2.2L, S10 2002-2003, Monte Carlo ... Starter for Chevy 2.2L, S10 2002-2003, Monte Carlo 3.4L Venture 410-12260 ; Item Condition, Aftermarket Part ; Unit Type, Starter ; Voltage, 12 ; Rotation, CW. New Starter 2003 CHEVROLET VENTURE 3.4L V6 This starter fits the following: 2003 CHEVROLET VENTURE 3.4L(207) V6 Replaces: AC DELCO 323-1429, 336-1931, 323-1447, 323-1626, 336-1931