

## Net C Asp Net Sql Technical Interview Questions

Now you can uncover the secrets behind accessing and retrieving data from a wide range of data sources such as SQL Server and XML sources. This book walks you through the array of ADO.NET 2.0 features and clearly shows you how they can be used to develop database-driven web applications in ASP.NET. You'll first gain an in-depth understanding of the data source controls that enable data binding in the ASP.NET platform. Next you'll uncover the advanced features of ASP.NET, including site navigation, implementing sorting and paging, and editing data in templates. You'll then focus on designing transactions in ADO.NET 2.0, displaying data, and utilizing SQL Server 2005 XML. Throughout the chapters, you'll find examples and source code (with ASP.NET examples written in C#) that you can integrate into your applications. This will enable you to leverage ADO.NET and ASP.NET features so you can easily create a scalable N-Tier web site. Some of the topics covered include: ASP.NET 2.0 Data Controls Data Binding with the SqlDataSource Control, XML Data, and Objects Selecting, Updating, Deleting Records Programmatically Creating and Adding Controls XSL Transformations with XmlDataSource Control Using Generics with the ObjectDataSource Control ASP.NET 2.0 Site Navigation including Implementing Breadcrumbs and Binding to Other Controls Displaying and Editing Data Using Templates GridView Sorting and Paging Advanced Data Source and Data-Bound Controls including Master/Detail Display, Displaying Images from a Database, and Using Themes with Data Bound Controls Transactions in .NET and Interoperability between System.Transactions and System.EnterpriseServices Advanced ADO.NET for ASP.NET Data Display including DataSet Object, ADO.NET 2.0 DataTable, and Provider-Independent Data Access Code Accessing Data from SQL Server 2005 including CLR in SQL Server 2005, New XML Features in SQL Server 2005, and Working with XML Data-Typed Columns from ADO.NET N-Tier Architecture with ASP.NET 2.0 and SQL Server 2005 Best Practices for Creating ASP.NET Web Sites including Implementation of CLR Stored Procedures and Implementation of Layers

A team of MVP authors guides you through the .NET 4 Framework Written by a group of experienced MVPs, this unparalleled book delves into the intricate?and often daunting?world of .NET 4. Each author draws from a particular area of expertise to provide invaluable information on using the various .NET 4, C# 4, Silverlight 4, and Visual Studio tools in the real world. The authors break down the vast .NET 4 Framework into easily digestible portions to offer you a strong foundation on what makes .NET such a popular and successful framework for building a wide range of solutions. Breaks down the .NET 4 Framework into easily understandable sections Features more than a dozen MVPs serving as authors, each of whom focuses on a particular area of expertise Covers such topics as Windows Presentation Foundation, Silverlight 4, Windows Communication Foundation, ASP.NET performance, the entity framework, and more Shares C# tips and tricks and .NET architecture best practices from a team of Microsoft MVPs Real World .NET 4 and C# is the ultimate resource for discovering and understanding the .NET 4 Framework. Innovations and Advances in Computing, Informatics, Systems Sciences, Networking and Engineering This book includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Computer

Science, Informatics, and Systems Sciences, and Engineering. It includes selected papers from the conference proceedings of the Eighth and some selected papers of the Ninth International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE 2012 & CISSE 2013). Coverage includes topics in: Industrial Electronics, Technology & Automation, Telecommunications and Networking, Systems, Computing Sciences and Software Engineering, Engineering Education, Instructional Technology, Assessment, and E-learning. · Provides the latest in a series of books growing out of the International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering; · Includes chapters in the most advanced areas of Computing, Informatics, Systems Sciences, and Engineering; · Accessible to a wide range of readership, including professors, researchers, practitioners and students.

It has become crucial for managers to be computer literate in today's business environment. It is also important that those entering the field acquire the fundamental theories of information systems, the essential practical skills in computer applications, and the desire for life-long learning in information technology. Programming Languages

Take the security of your ASP.NET Web API to the next level using some of the most amazing security techniques around About This Book This book has been completely updated for ASP.NET Web API 2.0 including the new features of ASP.NET Web API such as Cross-Origin Resource Sharing (CORS) and OWIN self-hosting Learn various techniques to secure ASP.NET Web API, including basic authentication using authentication filters, forms, Windows Authentication, external authentication services, and integrating ASP.NET's Identity system An easy-to-follow guide to enable SSL, prevent Cross-Site Request Forgery (CSRF) attacks, and enable CORS in ASP.NET Web API Who This Book Is For This book is intended for anyone who has previous knowledge of developing ASP.NET Web API applications. Good working knowledge and experience with C# and .NET Framework are prerequisites for this book. What You Will Learn Secure your web API by enabling Secured Socket Layer (SSL) Manage your application's user accounts by integrating ASP.NET's Identity system Ensure the security of your web API by implementing basic authentication Implement forms and Windows authentication to secure your web API Use external authentication such as Facebook and Twitter to authenticate a request to a web API Protect your web API from CSRF attacks Enable CORS in your web API to explicitly allow some cross-origin requests while rejecting others Fortify your web API using OAuth2 In Detail This book incorporates the new features of ASP.NET Web API 2 that will help you to secure an ASP.NET Web API and make a well-informed decision when choosing the right security mechanism for your security requirements. We start by showing you how to set up a browser client to utilize ASP.NET Web API services. We then cover ASP.NET Web API's security architecture, authentication, and authorization to help you secure a web API from unauthorized users. Next, you will learn how to use SSL with ASP.NET Web API, including using SSL client certificates, and integrate the ASP.NET Identity system with ASP.NET Web API. We'll show you how to secure a web API using OAuth2 to authenticate against a membership database using OWIN middleware. You will be able to use local logins to send authenticated requests using OAuth2. We also explain how to secure a web API using forms authentication and how users can log in with their Windows credentials using integrated Windows authentication. You will

come to understand the need for external authentication services to enable OAuth/OpenID and social media authentication. We'll then help you implement anti-Cross-Site Request Forgery (CSRF) measures in ASP.NET Web API. Finally, you will discover how to enable Cross-Origin Resource Sharing (CORS) in your web API application. Style and approach Each chapter is dedicated to a specific security technique, in a task-based and easy-to-follow way. Most of the chapters are accompanied with source code that demonstrates the step-by-step guidelines of implementing the technique, and includes an explanation of how each technique works.

- \* Provides a complete understanding of the general concepts of intranet development and the many features intranets comprise \*
- Includes thorough explanations of the various components of the IBuySpy Portal to aide in understanding and upgrading \*
- Contains tested examples of intranet features that can be used as starting point and applied to real life situations for intranet development

Each of the 20 chapters in this overview of current technology practices is dedicated to a different technology that is commonly used today, including programming languages, Web technologies, databases, and operating systems. By taking an interconnected look at many of the most popular technologies and how they rely on and work with each other, this guide serves as a reference guide to expert users, as well as an introduction to novices.

This book explains how to use the ASP.NET AJAX features to create richer, more responsive dynamic websites. It explains the architecture, including the ASP.NET server elements and the client-side Javascript library, and runtime. The book will walk you through examples for each feature element, demonstrating how the client and server interact to produce a better web application. The book also progresses in a way that educates you on how ASP.NET and AJAX build on each other to provide a comprehensive framework for rich application development.

ASP.NET 2.0 is Microsoft's premier technology for creating dynamic websites, and C# 2005 its preferred language. Development and innovation in this sector has continued at a rapid pace with the "Web 2.0" technologies of Ajax and Microsoft "Atlas" both becoming available since the .NET 2.0 launch. This special edition of Pro ASP.NET 2.0 in C# 2005 includes new chapters explaining how to use important new technologies. Beyond the book's already extensive coverage, readers will learn to create Ajax and Atlas applications in ASP.NET 2.0, and will appreciate its deeper coverage of ASP.NET 2.0 Performance Tuning.

ASP.NET Programming with C# and SQL Server, International Edition covers the basics of ASP.NET, C#, and SQL Server along with advanced topics including object-oriented programming and how to build Web sites that incorporate authentication and security. After completing this text, you will be able to use ASP.NET to build professional quality, database-driven Web sites.

Web site designers, Web developers, and visual designers all use Dreamweaver CS4 to build world class Web sites. Whether you're just starting out or you're a design pro, DreamweaverCS4 All-In-One for Dummies makes Web development easy! You'll start with Dreamweaver basics and the essentials of a good Web site. Then you'll learn to add zing with Spry effects, set up Contribute, build dynamic pages, extend your site with Web applications, configure database connections using PHP, ASP.NET,

or ColdFusion, and more! Discover how to: Get familiar with Dreamweaver's workspace, use the toolbars and panels, and set preferences Plan, design, build, and manage a site that meets your audience's expectations Add Flash files, movies, and sound, and keep your site updated with Cascading Style Sheets Create and use code snippets and history panel commands Follow the right steps for setting up links Incorporate interactive images to build visually appealing Web pages Use layers with CSS, JavaScript behaviors, or Flash® movies Review source formatting and clean up your code to avoid errors when publishing your site Capture attention with dynamic content and forms Dreamweaver CS4 All-In-One for Dummies is divided into nine minibooks: Getting Started Mastering the Basics Working Like the Pros Energizing Your Site Publishing Your Site Working Collaboratively Building Web Applications Making Pages Dynamic Developing Applications Rapidly Your one-stop Dreamweaver reference is Dreamweaver CS4 All-In-One for Dummies!

In areas such as military, security, aerospace, and disaster management, the need for performance optimization and interoperability among heterogeneous systems is increasingly important. Model-driven engineering, a paradigm in which the model becomes the actual software, offers a promising approach toward systems of systems (SoS) engineering. However, model-driven engineering has largely been unachieved in complex dynamical systems and netcentric SoS, partly because modeling and simulation (M&S) frameworks are stove-piped and not designed for SoS composability. Addressing this gap, Netcentric System of Systems Engineering with DEVS Unified Process presents a methodology for realizing the model-driven engineering vision and netcentric SoS using DEVS Unified Process (DUNIP). The authors draw on their experience with Discrete Event Systems Specification (DEVS) formalism, System Entity Structure (SES) theory, and applying model-driven engineering in the context of a netcentric SoS. They describe formal model-driven engineering methods for netcentric M&S using standards-based approaches to develop and test complex dynamic models with DUNIP. The book is organized into five sections: Section I introduces undergraduate students and novices to the world of DEVS. It covers systems and SoS M&S as well as DEVS formalism, software, modeling language, and DUNIP. It also assesses DUNIP with the requirements of the Department of Defense's (DoD) Open Unified Technical Framework (OpenUTF) for netcentric Test and Evaluation (T&E). Section II delves into M&S-based systems engineering for graduate students, advanced practitioners, and industry professionals. It provides methodologies to apply M&S principles to SoS design and reviews the development of executable architectures based on a framework such as the Department of Defense Architecture Framework (DoDAF). It also describes an approach for building netcentric knowledge-based contingency-driven systems. Section III guides graduate students, advanced DEVS users, and industry professionals who are interested in building DEVS virtual machines and netcentric SoS. It discusses modeling standardization, the deployment of models and simulators in a netcentric environment, event-driven architectures, and more. Section IV explores real-world case studies that realize many of the concepts defined in the previous chapters. Section V outlines the next steps and looks at how the modeling of netcentric complex adaptive systems can be attempted using DEVS concepts. It touches on the boundaries of DEVS formalism and the future work needed to utilize advanced concepts like weak and strong emergence, self-organization, scale-free systems,

run-time modularity, and event interoperability. This groundbreaking work details how DUNIP offers a well-structured, platform-independent methodology for the modeling and simulation of netcentric system of systems.

Free to download eBook on Practical Solar Tracking Design, Solar Tracking, Sun Tracking, Sun Tracker, Solar Tracker, Follow Sun, Sun Position calculation (Azimuth, Elevation, Zenith), Sun following, Sunrise, Sunset, Moon-phase, Moonrise, Moonset calculators. In harnessing power from the sun through a solar tracker or solar tracking system, renewable energy system developers require automatic solar tracking software and solar position algorithms. On-axis sun tracking system such as the altitude-azimuth dual axis or multi-axis solar tracker systems use a sun tracking algorithm or ray tracing sensors or software to ensure the sun's passage through the sky is traced with high precision in automated solar tracker applications, right through summer solstice, solar equinox and winter solstice. Eco Friendly and Environmentally Sustainable Micro Combined Solar Heat and Power (m-CHP, m-CCHP, m-CHCP) with Microgrid Storage and Layered Smartgrid Control towards Supplying Off-Grid Rural Villages in developing BRICS countries such as Africa, India, China and Brazil. Off-grid rural villages and isolated islands areas require mCHP and trigeneration solar power plants and associated isolated smart microgrid solutions to serve the community energy needs. This article describes the development progress for such a system, also referred to as solar polygeneration. The system includes a sun tracker mechanism wherein a parabolic dish or lenses are guided by a light sensitive mechanism in a way that the solar receiver is always at right angle to the solar radiation. Solar thermal energy is then either converted into electrical energy through a free piston Stirling, or stored in a thermal storage container. The project includes the thermodynamic modeling of the plant in Matlab Simulink as well as the development of an intelligent control approach that includes smart microgrid distribution and optimization. The book includes aspects in the simulation and optimization of stand-alone hybrid renewable energy systems and co-generation in isolated or islanded microgrids. It focusses on the stepwise development of a hybrid solar driven micro combined cooling heating and power (mCCHP) compact trigeneration polygeneration and thermal energy storage (TES) system with intelligent weather prediction, weak-ahead scheduling (time horizon), and look-ahead dispatch on integrated smart microgrid distribution principles. The solar harvesting and solar thermodynamic system includes an automatic sun tracking platform based on a PLC controlled mechatronic sun tracking system that follows the sun progressing across the sky. An intelligent energy management and adaptive learning control optimization approach is proposed for autonomous off-grid remote power applications, both for thermodynamic optimization and smart micro-grid optimization for distributed energy resources (DER). The correct resolution of this load-following multi objective optimization problem is a complex task because of the high number and multi-dimensional variables, the cross-correlation and interdependency between the energy streams as well as the non-linearity in the performance of some of the system components. Exergy-based control approaches for smartgrid topologies are considered in terms of the intelligence behind the safe and reliable operation of a microgrid in an automated system that can manage energy flow in electrical as well as thermal energy systems. The standalone micro-grid solution would be suitable for a rural village, intelligent building, district energy system, campus power, shopping mall centre, isolated network, eco estate or remote island application setting where self-generation and decentralized energy system concepts play a role. Discrete digital simulation models for the thermodynamic and active demand side management systems with digital smartgrid control unit to optimize the system energy management is currently under development. Parametric simulation models for this trigeneration system (polygeneration, poligeneration, quadgeneration) are developed on the Matlab Simulink and TrnSys platforms. In terms of model predictive coding strategies, the automation controller will perform multi-objective cost optimization for energy management

on a microgrid level by managing the generation and storage of electrical, heat and cooling energies in layers. Each layer has its own set of smart microgrid priorities associated with user demand side cycle predictions. Mixed Integer Linear Programming and Neural network algorithms are being modeled to perform Multi Objective Control optimization as potential optimization and adaptive learning techniques. Provides information on the features and functions of ASP.NET 3.5, covering such topics as Web server controls, working with Master Pages, querying with LINQ, extending the provider model, caching, and debugging and error handling.

The only complete reference for Windows command line utilities Instant results for time-crunched IT professionals The last thing you want as a busy systems administrator is to click endlessly through the Windows GUI every time you need to perform a simple task. Want a better solution? Windows Administration at the Command Line reacquaints you with the often-overlooked utilities accessible through the command line in Windows 2003, XP, and 2000. Locate files, check system status, secure and monitor systems, and best of all, save time by using scripts to automate your time-consuming management tasks. This practical book reveals all the command line utilities and puts them right at your fingertips. The only resource on the market with the complete set of Windows command line utilities, this hands-on reference gives you solutions that yield superior results compared to GUI-based utilities, increasing your productivity in the field. Inside you'll find: \* The complete set of all Windows command line utilities \* Real world scenarios that focus on practical applications \* Information on third-party utilities and scripting techniques \* Instructions for using the .NET Framework utilities \* A preview of Windows Vista utilities including detailed instructions for using Monad and MSH \* An appendix with 52 command line tricks and techniques In the Field Results Provides seasoned systems administrators with advanced tools, knowledge, and real-world skills to use on the job. Going beyond what the standard documentation or classroom training provides, these practical guides address the real situations IT professionals face every day, offering streamlined solutions to improve productivity.

A comprehensive guide to the Entity Framework with insight into its latest features and optimizations for responsive data access in your projects About This Book Create Entity data models from your database and use them in your applications Learn about the Entity Client data provider and write statements in Entity SQL to perform CRUD operations Explore ADO.NET Data Services and how they work with the Entity Framework Who This Book Is For If you are a C# developer who wants to learn a new way of querying data and utilizing it in applications efficiently for data binding or other operations, then this book is for you. Basic knowledge of ADO.NET is assumed. What You Will Learn Explore the features of the ADO.NET Entity Framework Understand the concepts of entities and their relationships Create an Entity Data Model using the ADO.NET Entity Data Model Designer and the EdmGen tool Extend existing Entity Types to create your own Entity Types Write programs against the Entity Data Model to perform CRUD operations Discover ADO.NET Data Services and learn how they can be used with the Entity Framework Familiarize yourself with WCF Data Services (formerly ADO.NET Data Services) Apply Code First, Model First and Database First approaches In Detail The ADO.NET Entity Framework from Microsoft is a new ADO.NET development framework that provides a level of abstraction for data access strategies and solves the impedance mismatch issues that exist between different data models. This book explores Microsoft's Entity Framework and explains how it can be used to build enterprise level applications. It will also teach you how you can work with RESTful Services and Google's Protocol Buffers with Entity Framework and WCF. You will explore how to use Entity Framework with ASP.NET Web API and also how to consume the data exposed by Entity Framework from client applications of varying types, i.e., ASP.NET MVC, WPF and Silverlight. You will familiarize yourself with the new features and improvements introduced in Entity Framework including enhanced POCO support, template-based code generation, tooling consolidation and connection resiliency. By

the end of the book, you will be able to successfully extend the new functionalities of Entity framework into your project. Style and approach This book is a step-by-step tutorial providing hands-on code examples with detailed explanations. The book aims to explain the concepts of the Entity Framework and illustrate how you can use these in applications with a tutorial based approach.

This book details Practical Solar Energy Harvesting, Automatic Solar-Tracking, Sun-Tracking-Systems, Solar-Trackers and Sun Tracker Systems using motorized automatic positioning concepts and control principles. An intelligent automatic solar tracker is a device that orients a payload toward the sun. Such programmable computer based solar tracking device includes principles of solar tracking, solar tracking systems, as well as microcontroller, microprocessor and/or PC based solar tracking control to orientate solar reflectors, solar lenses, photovoltaic panels or other optical configurations towards the sun. Motorized space frames and kinematic systems ensure motion dynamics and employ drive technology and gearing principles to steer optical configurations such as mangin, parabolic, conic, or cassegrain solar energy collectors to face the sun and follow the sun movement contour continuously. In general, the book may benefit solar research and solar energy applications in countries such as Africa, Mediterranean, Italy, Spain, Greece, USA, Mexico, South America, Brazilia, Argentina, Chili, India, Malaysia, Middle East, UAE, Russia, Japan and China. This book on practical automatic Solar-Tracking Sun-Tracking is in .PDF format and can easily be converted to the .EPUB .MOBI .AZW .ePub .FB2 .LIT .LRF .MOBI .PDB .PDF .TCR formats for smartphones and Kindle by using the [ebook.online-convert.com](http://ebook.online-convert.com) facility. The content of the book is also applicable to communication antenna satellite tracking and moon tracking algorithm source code for which links to free download links are provided. In harnessing power from the sun through a solar tracker or practical solar tracking system, renewable energy control automation systems require automatic solar tracking software and solar position algorithms to accomplish dynamic motion control with control automation architecture, circuit boards and hardware. On-axis sun tracking system such as the altitude-azimuth dual axis or multi-axis solar tracker systems use a sun tracking algorithm or ray tracing sensors or software to ensure the sun's passage through the sky is traced with high precision in automated solar tracker applications, right through summer solstice, solar equinox and winter solstice. A high precision sun position calculator or sun position algorithm is this an important step in the design and construction of an automatic solar tracking system. From sun tracing software perspective, the sonnet Tracing The Sun has a literal meaning. Within the context of sun track and trace, this book explains that the sun's daily path across the sky is directed by relatively simple principles, and if grasped/understood, then it is relatively easy to trace the sun with sun following software. Sun position computer software for tracing the sun are available as open source code, sources that is listed in this book. Ironically there was even a system called sun chaser, said to have been a solar positioner system known for chasing the sun throughout the day. Using solar equations in an electronic circuit for automatic solar tracking is quite simple, even if you are a novice, but mathematical solar equations are over complicated by academic experts and professors in text-books, journal articles and internet websites. In terms of solar hobbies, scholars, students and Hobbyist's looking at solar tracking electronics or PC programs for solar tracking are usually overcome by the sheer volume of scientific material and internet resources, which leaves many developers in frustration when search for simple experimental solar tracking source-code for their on-axis sun-tracking systems. This booklet will simplify the search for the mystical sun tracking formulas for your sun tracker innovation and help you develop your own autonomous solar tracking controller. By directing the solar collector directly into the sun, a solar harvesting means or device can harness sunlight or thermal heat. This is achieved with the help of sun angle formulas, solar angle formulas or solar tracking procedures for the calculation of sun's position in the sky. Automatic sun tracking system software includes algorithms for solar altitude azimuth angle calculations required in following the sun across the sky. In using the longitude, latitude GPS coordinates of the

solar tracker location, these sun tracking software tools supports precision solar tracking by determining the solar altitude-azimuth coordinates for the sun trajectory in altitude-azimuth tracking at the tracker location, using certain sun angle formulas in sun vector calculations. Instead of follow the sun software, a sun tracking sensor such as a sun sensor or webcam or video camera with vision based sun following image processing software can also be used to determine the position of the sun optically. Such optical feedback devices are often used in solar panel tracking systems and dish tracking systems. Dynamic sun tracing is also used in solar surveying, DNI analyser and sun surveying systems that build solar infographics maps with solar radiance, irradiance and DNI models for GIS (geographical information system). In this way geospatial methods on solar/environment interaction makes use use of geospatial technologies (GIS, Remote Sensing, and Cartography). Climatic data and weather station or weather center data, as well as queries from sky servers and solar resource database systems (i.e. on DB2, Sybase, Oracle, SQL, MySQL) may also be associated with solar GIS maps. In such solar resource modelling systems, a pyranometer or solarimeter is normally used in addition to measure direct and indirect, scattered, dispersed, reflective radiation for a particular geographical location. Sunlight analysis is important in flash photography where photographic lighting are important for photographers. GIS systems are used by architects who add sun shadow applets to study architectural shading or sun shadow analysis, solar flux calculations, optical modelling or to perform weather modelling. Such systems often employ a computer operated telescope type mechanism with ray tracing program software as a solar navigator or sun tracer that determines the solar position and intensity. The purpose of this booklet is to assist developers to track and trace suitable source-code and solar tracking algorithms for their application, whether a hobbyist, scientist, technician or engineer. Many open-source sun following and tracking algorithms and source-code for solar tracking programs and modules are freely available to download on the internet today. Certain proprietary solar tracker kits and solar tracking controllers include a software development kit SDK for its application programming interface API attributes (Pebble). Widget libraries, widget toolkits, GUI toolkit and UX libraries with graphical control elements are also available to construct the graphical user interface (GUI) for your solar tracking or solar power monitoring program. The solar library used by solar position calculators, solar simulation software and solar contour calculators include machine program code for the solar hardware controller which are software programmed into Micro-controllers, Programmable Logic Controllers PLC, programmable gate arrays, Arduino processor or PIC processor. PC based solar tracking is also high in demand using C++, Visual Basic VB, as well as MS Windows, Linux and Apple Mac based operating systems for sun path tables on Matlab, Excel. Some books and internet webpages use other terms, such as: sun angle calculator, sun position calculator or solar angle calculator. As said, such software code calculate the solar azimuth angle, solar altitude angle, solar elevation angle or the solar Zenith angle (Zenith solar angle is simply referenced from vertical plane, the mirror of the elevation angle measured from the horizontal or ground plane level). Similar software code is also used in solar calculator apps or the solar power calculator apps for IOS and Android smartphone devices. Most of these smartphone solar mobile apps show the sun path and sun-angles for any location and date over a 24 hour period. Some smartphones include augmented reality features in which you can physically see and look at the solar path through your cell phone camera or mobile phone camera at your phone's specific GPS location. In the computer programming and digital signal processing (DSP) environment, (free/open source) program code are available for VB, .Net, Delphi, Python, C, C+, C++, PHP, Swift, ADM, F, Flash, Basic, QBasic, GBasic, KBasic, SIMPL language, Squirrel, Solaris, Assembly language on operating systems such as MS Windows, Apple Mac, DOS or Linux OS. Software algorithms predicting position of the sun in the sky are commonly available as graphical programming platforms such as Matlab (Mathworks), Simulink models, Java applets, TRNSYS simulations, Scada system apps, Labview module, Beckhoff TwinCAT (Visual Studio),

Siemens SPA, mobile and iphone apps, Android or iOS tablet apps, and so forth. At the same time, PLC software code for a range of sun tracking automation technology can follow the profile of sun in sky for Siemens, HP, Panasonic, ABB, Allan Bradley, OMRON, SEW, Festo, Beckhoff, Rockwell, Schneider, Endress Hauser, Fuji electric, Honeywell, Fuchs, Yokonawa, or Mitsubishi platforms. Sun path projection software are also available for a range of modular IPC embedded PC motherboards, Industrial PC, PLC (Programmable Logic Controller) and PAC (Programmable Automation Controller) such as the Siemens S7-1200 or Siemens Logo, Beckhoff IPC or CX series, OMRON PLC, Ercam PLC, AC500plc ABB, National Instruments NI PXI or NI cRIO, PIC processor, Intel 8051/8085, IBM (Cell, Power, Brain or Truenorth series), FPGA (Xilinx Altera Nios), Intel, Xeon, Atmel megaAVR, MPU, Maple, Teensy, MSP, XMOS, Xbee, ARM, Raspberry Pi, Eagle, Arduino or Arduino AtMega microcontroller, with servo motor, stepper motor, direct current DC pulse width modulation PWM (current driver) or alternating current AC SPS or IPC variable frequency drives VFD motor drives (also termed adjustable-frequency drive, variable-speed drive, AC drive, micro drive or inverter drive) for electrical, mechatronic, pneumatic, or hydraulic solar tracking actuators. The above motion control and robot control systems include analogue or digital interfacing ports on the processors to allow for tracker angle orientation feedback control through one or a combination of angle sensor or angle encoder, shaft encoder, precision encoder, optical encoder, magnetic encoder, direction encoder, rotational encoder, chip encoder, tilt sensor, inclination sensor, or pitch sensor. Note that the tracker's elevation or zenith axis angle may be measured using an altitude angle-, declination angle-, inclination angle-, pitch angle-, or vertical angle-, zenith angle-sensor or inclinometer. Similarly the tracker's azimuth axis angle may be measured with a azimuth angle-, horizontal angle-, or roll angle- sensor. Chip integrated accelerometer magnetometer gyroscope type angle sensors can also be used to calculate displacement. Other options include the use of thermal imaging systems such as a Fluke thermal imager, or robotic or vision based solar tracker systems that employ face tracking, head tracking, hand tracking, eye tracking and car tracking principles in solar tracking. With unattended decentralised rural, island, isolated, or autonomous off-grid power installations, remote control, monitoring, data acquisition, digital datalogging and online measurement and verification equipment becomes crucial. It assists the operator with supervisory control to monitor the efficiency of remote renewable energy resources and systems and provide valuable web-based feedback in terms of CO2 and clean development mechanism (CDM) reporting. A power quality analyser for diagnostics through internet, WiFi and cellular mobile links is most valuable in frontline troubleshooting and predictive maintenance, where quick diagnostic analysis is required to detect and prevent power quality issues. Solar tracker applications cover a wide spectrum of solar applications and solar assisted application, including concentrated solar power generation, solar desalination, solar water purification, solar steam generation, solar electricity generation, solar industrial process heat, solar thermal heat storage, solar food dryers, solar water pumping, hydrogen production from methane or producing hydrogen and oxygen from water (HHO) through electrolysis. Many patented or non-patented solar apparatus include tracking in solar apparatus for solar electric generator, solar desalinator, solar steam engine, solar ice maker, solar water purifier, solar cooling, solar refrigeration, USB solar charger, solar phone charging, portable solar charging tracker, solar coffee brewing, solar cooking or solar drying means. Your project may be the next breakthrough or patent, but your invention is held back by frustration in search for the sun tracker you require for your solar powered appliance, solar generator, solar tracker robot, solar freezer, solar cooker, solar drier, solar pump, solar freezer, or solar dryer project. Whether your solar electronic circuit diagram include a simplified solar controller design in a solar electricity project, solar power kit, solar hobby kit, solar steam generator, solar hot water system, solar ice maker, solar desalinator, hobbyist solar panels, hobby robot, or if you are developing professional or hobby electronics for a solar utility or micro scale solar powerplant for your own solar farm or solar farming, this publication may help accelerate the

development of your solar tracking innovation. Lately, solar polygeneration, solar trigeneration (solar triple generation), and solar quad generation (adding delivery of steam, liquid/gaseous fuel, or capture food-grade CO<sub>2</sub>) systems have need for automatic solar tracking. These systems are known for significant efficiency increases in energy yield as a result of the integration and re-use of waste or residual heat and are suitable for compact packaged micro solar powerplants that could be manufactured and transported in kit-form and operate on a plug-and-play basis. Typical hybrid solar power systems include compact or packaged solar micro combined heat and power (CHP or mCHP) or solar micro combined, cooling, heating and power (CCHP, CHPC, mCCHP, or mCHPC) systems used in distributed power generation. These systems are often combined in concentrated solar CSP and CPV smart microgrid configurations for off-grid rural, island or isolated microgrid, minigrid and distributed power renewable energy systems. Solar tracking algorithms are also used in modelling of trigeneration systems using Matlab Simulink (Modelica or TRNSYS) platform as well as in automation and control of renewable energy systems through intelligent parsing, multi-objective, adaptive learning control and control optimization strategies. Solar tracking algorithms also find application in developing solar models for country or location specific solar studies, for example in terms of measuring or analysis of the fluctuations of the solar radiation (i.e. direct and diffuse radiation) in a particular area. Solar DNI, solar irradiance and atmospheric information and models can thus be integrated into a solar map, solar atlas or geographical information systems (GIS). Such models allows for defining local parameters for specific regions that may be valuable in terms of the evaluation of different solar in photovoltaic or CSP systems on simulation and synthesis platforms such as Matlab and Simulink or in linear or multi-objective optimization algorithm platforms such as COMPOSE, EnergyPLAN or DER-CAM. A dual-axis solar tracker and single-axis solar tracker may use a sun tracker program or sun tracker algorithm to position a solar dish, solar panel array, heliostat array, PV panel, solar antenna or infrared solar nantenna. A self-tracking solar concentrator performs automatic solar tracking by computing the solar vector. Solar position algorithms (TwinCAT, SPA, or PSA Algorithms) use an astronomical algorithm to calculate the position of the sun. It uses astronomical software algorithms and equations for solar tracking in the calculation of sun's position in the sky for each location on the earth at any time of day. Like an optical solar telescope, the solar position algorithm pin-points the solar reflector at the sun and locks onto the sun's position to track the sun across the sky as the sun progresses throughout the day. Optical sensors such as photodiodes, light-dependant-resistors (LDR) or photoresistors are used as optical accuracy feedback devices. Lately we also included a section in the book (with links to microprocessor code) on how the PixArt Wii infrared camera in the Wii remote or Wiimote may be used in infrared solar tracking applications. In order to harvest free energy from the sun, some automatic solar positioning systems use an optical means to direct the solar tracking device. These solar tracking strategies use optical tracking techniques, such as a sun sensor means, to direct sun rays onto a silicon or CMOS substrate to determine the X and Y coordinates of the sun's position. In a solar mems sun-sensor device, incident sunlight enters the sun sensor through a small pin-hole in a mask plate where light is exposed to a silicon substrate. In a web-camera or camera image processing sun tracking and sun following means, object tracking software performs multi object tracking or moving object tracking methods. In an solar object tracking technique, image processing software performs mathematical processing to box the outline of the apparent solar disc or sun blob within the captured image frame, while sun-localization is performed with an edge detection algorithm to determine the solar vector coordinates. An automated positioning system help maximize the yields of solar power plants through solar tracking control to harness sun's energy. In such renewable energy systems, the solar panel positioning system uses a sun tracking techniques and a solar angle calculator in positioning PV panels in photovoltaic systems and concentrated photovoltaic CPV systems. Automatic on-axis solar tracking in a PV solar tracking system can be dual-axis sun tracking or



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ASP .NET PROGRAMMING WITH C# AND SQL SERVER covers the basics of ASP.NET, C#, and SQL Server along with advanced topics including object-oriented programming and how to build Web sites that incorporate authentication and security. After completing this text, you will be able to use ASP .NET to build professional quality, database-driven Web sites. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

InfoWorld is targeted to Senior IT professionals. Content is segmented into Channels and Topic Centers. InfoWorld also celebrates people, companies, and projects.

With the incarnations of ASP.NET 3.5 and SQL Server 2008, programming dynamic data-driven web sites with Microsoft technologies has become easier and much more efficient than ever before. Fewer mouse clicks and fewer lines of code can now enable more powerful features and the tools you need—Visual Web Developer and SQL Server 2008 Express Edition—are free. In *Beginning ASP.NET E-Commerce in C#: From Novice to Professional*, you'll learn how to best use the free development tools offered by Microsoft to build an online product catalog. You will gain an intimate understanding of every piece of code you write. This understanding will enable you to build your own powerful and flexible web sites efficiently and rapidly with ASP.NET 3.5. Build a complete site, including a shopping cart, checkout, product searching, product recommendations, control panel, customer accounts, order processing, and much, much more. Explore new challenges and theoretical concepts, which are carefully analyzed and explained throughout the book, with each feature you add to the web site. Learn to handle payments by integrating PayPal and DataCash into your site. What you'll learn Use Microsoft's Express products to build an online product catalog Add payment processing with PayPal and DataCash Expand your site's product listing through web services Implement an order pipeline Take advantage of search engine optimization techniques to publicize your site Who this book is for Developers wanting to build professional e-commerce sites using .NET technologies.

As the first technical book of its kind, this unique resource walks you through the process of building a real-world application using Domain-Driven Design implemented in C#. Based on a real application for an existing company, each chapter is broken down into specific modules so that you can identify the problem, decide what solution will provide the best results, and then execute that design to solve the problem. With each chapter, you'll build a complete project from beginning to end.

*Be Right at Home in the World's Most Powerful Web Development Environment* For large-scale web application development, Visual Studio 2005 is the most capable product around. This book shows team members and leaders how to use its power in several key dimensions. You'll master dozens of built-in features for creating a large, high-performance website based on ASP.NET 2.0. You'll work seamlessly with dynamic data, both reading from and writing to databases. And throughout, you'll learn how Visual Studio 2005 supports a more efficient group process in terms of design, development, and deployment. And everything is brought together with the enterprise-scale example, "ABC Incorporated," that runs throughout the book. This is a book no web developer, and no web-dependent organization, should be without. Coverage Includes Reaping the benefits of master pages and

themes Generating site maps and other navigational aids automatically Building a shopping cart application for your website Adding search functionality to your website Creating a flexible user environment using Webpart technology Increasing application performance using client-side and server-side scripting technologies Giving users the ability to change the website's theme to meet specific needs Using components and controls to add special effects and user customization Improving team efficiency using modern development and design techniques Monitoring and responding to usage statistics Combining technologies to get the best possible results from large applications Making your site accessible to everyone Master Standards-Based Web Development Techniques New to Visual Studio 2005 Discover How Visual Studio 2005 Solves Team Development Issues, Such as Source Code Control and Application Design Simplify Database Application Development without Compromising Security or Reliability For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

### ASP.NET Programming with C# and SQL Server Course Technology

A guide to the practical issues and applications in database programming with updated Visual Basic.NET SQL Server Database Programming with Visual Basic.NET offers a guide to the fundamental knowledge and practical techniques for the design and creation of professional database programs that can be used for real-world commercial and industrial applications. The author—a noted expert on the topic—uses the most current version of Visual Basic.NET, Visual Basic.NET 2017 with Visual Studio.NET 2017. In addition, he introduces the updated SQL Server database and Microsoft SQL Server 2017 Express. All sample program projects can be run in the most updated version, Visual Basic.NET 2019 with Visual Studio.NET 2019. Written in an accessible, down-to-earth style, the author explains how to build a sample database using the SQL Server management system and Microsoft SQL Server Management Studio 2018. The latest version of ASP.NET, ASP.NET 4.7, is also discussed to provide the most up-to-date Web database programming technologies. This important book:

- Offers illustrative practical examples and detailed descriptions to aid in comprehension of the material presented
- Includes both fundamental and advanced database programming techniques
- Integrates images into associated database tables using a DevExpress UI tools - WindowsUI

Written for graduate and senior undergraduate students studying database implementations and programming courses, SQL Server Database Programming with Visual Basic.NET shows how to develop professional and practical database programs in Visual Basic.NET 2017/Visual Basic.NET 2019.

Automatic Solar Tracking Sun Tracking : This book details Automatic Solar-Tracking, Sun-Tracking-Systems, Solar-Trackers and Sun Tracker Systems. An intelligent automatic solar tracker is a device that orients a payload toward the sun. Such programmable computer based solar tracking device includes principles of solar tracking, solar tracking systems, as well as microcontroller, microprocessor and/or PC based solar tracking control to orientate solar reflectors, solar lenses, photovoltaic panels or other optical configurations towards the sun. Motorized space frames and kinematic systems ensure motion dynamics and employ drive

technology and gearing principles to steer optical configurations such as mangin, parabolic, conic, or cassegrain solar energy collectors to face the sun and follow the sun movement contour continuously (seguimiento solar y automatización, automatización seguidor solar, tracking solar e automação, automação seguidor solar, inseguimento solare, inseguitore solare, energia termica, sole seguito, posizionatore motorizzato) In harnessing power from the sun through a solar tracker or practical solar tracking system, renewable energy control automation systems require automatic solar tracking software and solar position algorithms to accomplish dynamic motion control with control automation architecture, circuit boards and hardware. On-axis sun tracking system such as the altitude-azimuth dual axis or multi-axis solar tracker systems use a sun tracking algorithm or ray tracing sensors or software to ensure the sun's passage through the sky is traced with high precision in automated solar tracker applications, right through summer solstice, solar equinox and winter solstice. A high precision sun position calculator or sun position algorithm is this an important step in the design and construction of an automatic solar tracking system. The content of the book is also applicable to communication antenna satellite tracking and moon tracking algorithm source code for which links to free download links are provided. From sun tracing software perspective, the sonnet Tracing The Sun has a literal meaning. Within the context of sun track and trace, this book explains that the sun's daily path across the sky is directed by relatively simple principles, and if grasped/understood, then it is relatively easy to trace the sun with sun following software. Sun position computer software for tracing the sun are available as open source code, sources that is listed in this book. The book also describes the use of satellite tracking software and mechanisms in solar tracking applications. Ironically there was even a system called sun chaser, said to have been a solar positioner system known for chasing the sun throughout the day. Using solar equations in an electronic circuit for automatic solar tracking is quite simple, even if you are a novice, but mathematical solar equations are over complicated by academic experts and professors in text-books, journal articles and internet websites. In terms of solar hobbies, scholars, students and Hobbyist's looking at solar tracking electronics or PC programs for solar tracking are usually overcome by the sheer volume of scientific material and internet resources, which leaves many developers in frustration when search for simple experimental solar tracking source-code for their on-axis sun-tracking systems. This booklet will simplify the search for the mystical sun tracking formulas for your sun tracker innovation and help you develop your own autonomous solar tracking controller. By directing the solar collector directly into the sun, a solar harvesting means or device can harness sunlight or thermal heat. This is achieved with the help of sun angle formulas, solar angle formulas or solar tracking procedures for the calculation of sun's position in the sky. Automatic sun tracking system software includes algorithms for solar altitude azimuth angle calculations required in following the sun across the sky. In using the longitude, latitude GPS coordinates of the solar tracker location, these sun tracking software tools supports precision solar tracking by determining the solar altitude-azimuth coordinates for the sun trajectory in altitude-azimuth tracking at the tracker location, using certain sun angle formulas in sun vector calculations. Instead of follow the sun software, a sun tracking sensor such as a sun sensor or webcam or video camera with vision based sun following image processing software can also be used to determine the position of the sun optically. Such optical feedback devices are often used in solar panel

tracking systems and dish tracking systems. Dynamic sun tracing is also used in solar surveying, DNI analyser and sun surveying systems that build solar infographics maps with solar radiance, irradiance and DNI models for GIS (geographical information system). In this way geospatial methods on solar/environment interaction makes use of geospatial technologies (GIS, Remote Sensing, and Cartography). Climatic data and weather station or weather center data, as well as queries from sky servers and solar resource database systems (i.e. on DB2, Sybase, Oracle, SQL, MySQL) may also be associated with solar GIS maps. In such solar resource modelling systems, a pyranometer or solarimeter is normally used in addition to measure direct and indirect, scattered, dispersed, reflective radiation for a particular geographical location. Sunlight analysis is important in flash photography where photographic lighting are important for photographers. GIS systems are used by architects who add sun shadow applets to study architectural shading or sun shadow analysis, solar flux calculations, optical modelling or to perform weather modelling. Such systems often employ a computer operated telescope type mechanism with ray tracing program software as a solar navigator or sun tracer that determines the solar position and intensity. The purpose of this booklet is to assist developers to track and trace suitable source-code and solar tracking algorithms for their application, whether a hobbyist, scientist, technician or engineer. Many open-source sun following and tracking algorithms and source-code for solar tracking programs and modules are freely available to download on the internet today. Certain proprietary solar tracker kits and solar tracking controllers include a software development kit SDK for its application programming interface API attributes (Pebble). Widget libraries, widget toolkits, GUI toolkit and UX libraries with graphical control elements are also available to construct the graphical user interface (GUI) for your solar tracking or solar power monitoring program. The solar library used by solar position calculators, solar simulation software and solar contour calculators include machine program code for the solar hardware controller which are software programmed into Micro-controllers, Programmable Logic Controllers PLC, programmable gate arrays, Arduino processor or PIC processor. PC based solar tracking is also high in demand using C++, Visual Basic VB, as well as MS Windows, Linux and Apple Mac based operating systems for sun path tables on Matlab, Excel. Some books and internet webpages use other terms, such as: sun angle calculator, sun position calculator or solar angle calculator. As said, such software code calculate the solar azimuth angle, solar altitude angle, solar elevation angle or the solar Zenith angle (Zenith solar angle is simply referenced from vertical plane, the mirror of the elevation angle measured from the horizontal or ground plane level). Similar software code is also used in solar calculator apps or the solar power calculator apps for IOS and Android smartphone devices. Most of these smartphone solar mobile apps show the sun path and sun-angles for any location and date over a 24 hour period. Some smartphones include augmented reality features in which you can physically see and look at the solar path through your cell phone camera or mobile phone camera at your phone's specific GPS location. In the computer programming and digital signal processing (DSP) environment, (free/open source) program code are available for VB, .Net, Delphi, Python, C, C+, C++, PHP, Swift, ADM, F, Flash, Basic, QBasic, GBasic, KBasic, SIMPL language, Squirrel, Solaris, Assembly language on operating systems such as MS Windows, Apple Mac, DOS or Linux OS. Software algorithms predicting position of the sun in the sky are commonly available as

graphical programming platforms such as Matlab (Mathworks), Simulink models, Java applets, TRNSYS simulations, Scada system apps, Labview module, Beckhoff TwinCAT (Visual Studio), Siemens SPA, mobile and iphone apps, Android or iOS tablet apps, and so forth. At the same time, PLC software code for a range of sun tracking automation technology can follow the profile of sun in sky for Siemens, HP, Panasonic, ABB, Allan Bradley, OMRON, SEW, Festo, Beckhoff, Rockwell, Schneider, Endress Hauser, Fuji electric, Honeywell, Fuchs, Yokonawa, or Mitsubishi platforms. Sun path projection software are also available for a range of modular IPC embedded PC motherboards, Industrial PC, PLC (Programmable Logic Controller) and PAC (Programmable Automation Controller) such as the Siemens S7-1200 or Siemens Logo, Beckhoff IPC or CX series, OMRON PLC, Ercam PLC, AC500plc ABB, National Instruments NI PXI or NI cRIO, PIC processor, Intel 8051/8085, IBM (Cell, Power, Brain or Truenorth series), FPGA (Xilinx Altera Nios), Intel, Xeon, Atmel megaAVR, MPU, Maple, Teensy, MSP, XMOS, Xbee, ARM, Raspberry Pi, Eagle, Arduino or Arduino AtMega microcontroller, with servo motor, stepper motor, direct current DC pulse width modulation PWM (current driver) or alternating current AC SPS or IPC variable frequency drives VFD motor drives (also termed adjustable-frequency drive, variable-speed drive, AC drive, micro drive or inverter drive) for electrical, mechatronic, pneumatic, or hydraulic solar tracking actuators. The above motion control and robot control systems include analogue or digital interfacing ports on the processors to allow for tracker angle orientation feedback control through one or a combination of angle sensor or angle encoder, shaft encoder, precision encoder, optical encoder, magnetic encoder, direction encoder, rotational encoder, chip encoder, tilt sensor, inclination sensor, or pitch sensor. Note that the tracker's elevation or zenith axis angle may be measured using an altitude angle-, declination angle-, inclination angle-, pitch angle-, or vertical angle-, zenith angle- sensor or inclinometer. Similarly the tracker's azimuth axis angle may be measured with an azimuth angle-, horizontal angle-, or roll angle- sensor. Chip integrated accelerometer magnetometer gyroscope type angle sensors can also be used to calculate displacement. Other options include the use of thermal imaging systems such as a Fluke thermal imager, or robotic or vision based solar tracker systems that employ face tracking, head tracking, hand tracking, eye tracking and car tracking principles in solar tracking. With unattended decentralised rural, island, isolated, or autonomous off-grid power installations, remote control, monitoring, data acquisition, digital datalogging and online measurement and verification equipment becomes crucial. It assists the operator with supervisory control to monitor the efficiency of remote renewable energy resources and systems and provide valuable web-based feedback in terms of CO2 and clean development mechanism (CDM) reporting. A power quality analyser for diagnostics through internet, WiFi and cellular mobile links is most valuable in frontline troubleshooting and predictive maintenance, where quick diagnostic analysis is required to detect and prevent power quality issues. Solar tracker applications cover a wide spectrum of solar applications and solar assisted application, including concentrated solar power generation, solar desalination, solar water purification, solar steam generation, solar electricity generation, solar industrial process heat, solar thermal heat storage, solar food dryers, solar water pumping, hydrogen production from methane or producing hydrogen and oxygen from water (HHO) through electrolysis. Many patented or non-patented solar apparatus include tracking in solar apparatus for solar electric generator, solar desalinators, solar

steam engine, solar ice maker, solar water purifier, solar cooling, solar refrigeration, USB solar charger, solar phone charging, portable solar charging tracker, solar coffee brewing, solar cooking or solar drying means. Your project may be the next breakthrough or patent, but your invention is held back by frustration in search for the sun tracker you require for your solar powered appliance, solar generator, solar tracker robot, solar freezer, solar cooker, solar drier, solar pump, solar freezer, or solar dryer project. Whether your solar electronic circuit diagram include a simplified solar controller design in a solar electricity project, solar power kit, solar hobby kit, solar steam generator, solar hot water system, solar ice maker, solar desalinator, hobbyist solar panels, hobby robot, or if you are developing professional or hobby electronics for a solar utility or micro scale solar powerplant for your own solar farm or solar farming, this publication may help accelerate the development of your solar tracking innovation. Lately, solar polygeneration, solar trigeneration (solar triple generation), and solar quad generation (adding delivery of steam, liquid/gaseous fuel, or capture food-grade CO<sub>2</sub>) systems have need for automatic solar tracking. These systems are known for significant efficiency increases in energy yield as a result of the integration and re-use of waste or residual heat and are suitable for compact packaged micro solar powerplants that could be manufactured and transported in kit-form and operate on a plug-and play basis. Typical hybrid solar power systems include compact or packaged solar micro combined heat and power (CHP or mCHP) or solar micro combined, cooling, heating and power (CCHP, CHPC, mCCHP, or mCHPC) systems used in distributed power generation. These systems are often combined in concentrated solar CSP and CPV smart microgrid configurations for off-grid rural, island or isolated microgrid, minigrid and distributed power renewable energy systems. Solar tracking algorithms are also used in modelling of trigeneration systems using Matlab Simulink (Modelica or TRNSYS) platform as well as in automation and control of renewable energy systems through intelligent parsing, multi-objective, adaptive learning control and control optimization strategies. Solar tracking algorithms also find application in developing solar models for country or location specific solar studies, for example in terms of measuring or analysis of the fluctuations of the solar radiation (i.e. direct and diffuse radiation) in a particular area. Solar DNI, solar irradiance and atmospheric information and models can thus be integrated into a solar map, solar atlas or geographical information systems (GIS). Such models allows for defining local parameters for specific regions that may be valuable in terms of the evaluation of different solar in photovoltaic or CSP systems on simulation and synthesis platforms such as Matlab and Simulink or in linear or multi-objective optimization algorithm platforms such as COMPOSE, EnergyPLAN or DER-CAM. A dual-axis solar tracker and single-axis solar tracker may use a sun tracker program or sun tracker algorithm to position a solar dish, solar panel array, heliostat array, PV panel, solar antenna or infrared solar antenna. A self-tracking solar concentrator performs automatic solar tracking by computing the solar vector. Solar position algorithms (TwinCAT, SPA, or PSA Algorithms) use an astronomical algorithm to calculate the position of the sun. It uses astronomical software algorithms and equations for solar tracking in the calculation of sun's position in the sky for each location on the earth at any time of day. Like an optical solar telescope, the solar position algorithm pin-points the solar reflector at the sun and locks onto the sun's position to track the sun across the sky as the sun progresses throughout the day. Optical sensors such as photodiodes,

light-dependant-resistors (LDR) or photoresistors are used as optical accuracy feedback devices. Lately we also included a section in the book (with links to microprocessor code) on how the PixArt Wii infrared camera in the Wii remote or Wiimote may be used in infrared solar tracking applications. In order to harvest free energy from the sun, some automatic solar positioning systems use an optical means to direct the solar tracking device. These solar tracking strategies use optical tracking techniques, such as a sun sensor means, to direct sun rays onto a silicon or CMOS substrate to determine the X and Y coordinates of the sun's position. In a solar mems sun-sensor device, incident sunlight enters the sun sensor through a small pin-hole in a mask plate where light is exposed to a silicon substrate. In a web-camera or camera image processing sun tracking and sun following means, object tracking software performs multi object tracking or moving object tracking methods. In an solar object tracking technique, image processing software performs mathematical processing to box the outline of the apparent solar disc or sun blob within the captured image frame, while sun-localization is performed with an edge detection algorithm to determine the solar vector coordinates. An automated positioning system help maximize the yields of solar power plants through solar tracking control to harness sun's energy. In such renewable energy systems, the solar panel positioning system uses a sun tracking techniques and a solar angle calculator in positioning PV panels in photovoltaic systems and concentrated photovoltaic CPV systems. Automatic on-axis solar tracking in a PV solar tracking system can be dual-axis sun tracking or single-axis sun solar tracking. It is known that a motorized positioning system in a photovoltaic panel tracker increase energy yield and ensures increased power output, even in a single axis solar tracking configuration. Other applications such as robotic solar tracker or robotic solar tracking system uses robotica with artificial intelligence in the control optimization of energy yield in solar harvesting through a robotic tracking system. Automatic positioning systems in solar tracking designs are also used in other free energy generators, such as concentrated solar thermal power CSP and dish Stirling systems. The sun tracking device in a solar collector in a solar concentrator or solar collector Such a performs on-axis solar tracking, a dual axis solar tracker assists to harness energy from the sun through an optical solar collector, which can be a parabolic mirror, parabolic reflector, Fresnel lens or mirror array/matrix. A parabolic dish or reflector is dynamically steered using a transmission system or solar tracking slew drive mean. In steering the dish to face the sun, the power dish actuator and actuation means in a parabolic dish system optically focusses the sun's energy on the focal point of a parabolic dish or solar concentrating means. A Stirling engine, solar heat pipe, thermosyphin, solar phase change material PCM receiver, or a fibre optic sunlight receiver means is located at the focal point of the solar concentrator. The dish Stirling engine configuration is referred to as a dish Stirling system or Stirling power generation system. Hybrid solar power systems (used in combination with biogas, biofuel, petrol, ethanol, diesel, natural gas or PNG) use a combination of power sources to harness and store solar energy in a storage medium. Any multitude of energy sources can be combined through the use of controllers and the energy stored in batteries, phase change material, thermal heat storage, and in cogeneration form converted to the required power using thermodynamic cycles (organic Rankin, Brayton cycle, micro turbine, Stirling) with an inverter and charge controller. Microsoft recognizes key individuals who contribute significantly to the community of technologists through the Microsoft Most

Valuable Professional (MVP) award. These individuals are active authors, speakers, bloggers, and innovators. They are also skilled network engineers, developers, trainers, designers, and architects. In the SharePoint community, these MVPs are recognized for their expertise in either Windows SharePoint Services (WSS) or Microsoft Office SharePoint Server (MOSS). This book represents the efforts of 16 MVPs in the SharePoint community to present core areas of SharePoint 2007 products and technologies seasoned with significant field experience. The idea behind the book is to lower the learning curve for the reader, while providing the insight necessary to avoid common missteps. This book is an extension of the work the authors have done in their own blogs, books, and presentations. This book is for the community of SharePoint professionals. That means that architects, designers, developers, administrators, and engineers all will find something useful in its pages. As a reader, you will want to focus on chapters that appeal to your areas of expertise directly. Some of the chapters, for example, assume a strong programming background, whereas others are centered on administration or maintenance. All readers should have some prior experience with SharePoint 2007 products and technologies to get the most out of this book, although the book does include an introductory chapter for those who are just getting started. The authors generally assume a working knowledge of SharePoint in an effort to focus the discussion on implementation and best practices. This book covers SharePoint 2007 products and technologies. Specifically, you will find topics relating to both WSS and MOSS. The topics were selected by SharePoint MVP and Editor Scot Hiller based on the authors' capabilities to represent a cross-section of the most important areas within SharePoint. Although the chapters have been arranged in a logical order, they are intended to stand alone as independent articles. Specifically, here's what the book covers: Introduction to SharePoint by Mike Walsh: an overview of SharePoint Configuring Forms Based Authentication by Stacy Draper: different approaches to FBA, along with their strengths and weaknesses including some custom solutions to problems such as user and role management. Understanding SharePoint Administration by Todd Klindt: the basics (such as backup and recovery), more advanced topics (such as command-line utilities and tips), and techniques for managing site templates. Developing Publishing Sites the Smart and Structured Way by Andrew Connell: an alternative technique for developing Publishing sites within MOSS discusses development with the SharePoint Designer (SPD), but then challenges the conventional thinking with a new structured approach. Readers will learn new ways to ease the management and maintenance of Publishing sites. Using SharePoint Designer 2007 by Dustin Miller: This often-maligned tool can be a powerful part of your SharePoint toolkit. Customizing and Branding the SharePoint 2007 Interface by Shane Perran and Heather Solomon: One of the first tasks in any SharePoint project is branding the use interface. The reader will learn all of the different ways to customize the look and feel of SharePoint using master pages, style sheets, and graphics. Understanding Web Parts by Jan Tielens: walks the reader through the creation and deployment of Web Parts. Readers should have a strong C# programming background. Creating Workflows in WSS by Robert Bogue: Readers will learn how to create custom workflows and forms for deployment in WSS including many tips and tricks from actual field experience. Readers should have a strong C# programming background. Creating Workflow in SharePoint Server 2007 by Joris Poelmans: The big difference between WSS and MOSS workflows is the ability to use InfoPath

forms. This has extensive coverage of InfoPath forms and how to use them with MOSS workflows. Using the Business Data Catalog by Nick Swan: The Business Data Catalog (BDC) is used to allow MOSS to access line-of-business databases. Includes tips to make the development process easier. Readers should be familiar with XML. Using Excel Services by Luis Du Solier Grinda: Excel Services is used to allow MOSS to present spreadsheet data to end users through a browser. This technology is a foundational element in the development of dashboards in the SharePoint Report Center. Securing SharePoint Communication by Adam Buenz: Readers will learn to implement Secure Sockets Layer (SSL), Kerberos security, and how to use the Microsoft Internet Security and Acceleration (ISA) Server. Using Information Rights Management by Jason Medero: setting up IRM and using it with SharePoint libraries to restrict document functionality (such as printing and attaching) so sensitive information does not leave an organization. Upgrading from SPS 2003 to MOSS 2007 Using the Gradual Method by Shane Young: One of the biggest trends in the SharePoint community is upgrading from SharePoint Portal Server 2003 (SPS 2003) to MOSS. This examines all of the different upgrade approaches, and then walks the reader through the gradual method for upgrading. Contains a wealth of field experience learned from performing many upgrades. This book is also available as part of the 4-book SharePoint 2007 Wrox Box (ISBN: 0470431946) with these 4 books: Professional SharePoint 2007 Development (ISBN: 0470117567) Real World SharePoint 2007 (ISBN: 0470168358) Professional Microsoft SharePoint 2007 Design (ISBN: 047028580X) Professional SharePoint 2007 Web Content Management Development (ISBN: 0470224754)

Giving organizations the ability to track, secure, and manage items from the time they are raw materials through the life-cycle of the product, radio frequency identification (RFID) makes internal processes more efficient and improves overall supply chain responsiveness. Helping you bring your organization into the future, RFID in the Supply Chain: A Guide to Selection and Implementation explains RFID technology, its applications in SCM, data storage and retrieval, business processes, operational and implementation problems, risks, security and privacy, facility layout, handling systems and methods, and transportation costs. In short, with its soup-to-nuts coverage, the book ensures that your RFID implementation is successful and that you get the most from your investment. The book discusses the major paradigm shift in product traceability that began with transitioning to RFID technology from bar code technology. It examines the economic feasibility of rolling out RFID and the challenges in supply chain synchronization, customer privacy, security, operations and IT, logistics, program management, education and training, and implementation, as well as what lessons have been learned. The author addresses the RFID business processes needed to analyze and resolve problems the suppliers face when they deal with multiple customers, each with a different mandate, and with their own set of suppliers. Going beyond the technology and how it has changed supply chain processes, the book includes selection guidelines and implementation examples, such as speed of tag reads versus quality of computer inputs and optimal tag location. The author discusses the implementation of a business process model and the separate but equal concerns that business and IT executives have about the implementation of RFID applications. The book also covers security, integrated control management linked to the corporate strategy, and laws and regulations.

Discover how to use ASP.NET to build, deploy, and run 10 distributed Web applications that can target any browser on any device. ASP.NET provides developers with the functionality they need to create enterprise-level Web applications. This book clearly shows them how to use this framework to create the top ten enterprise applications that they will need for their organizations. To build these applications, Smith explains how to combine the functionality of ASP.NET with products and technologies such as VB.NET, C#, ADO.NET, SQL Server 2000, WAP, XML, HTML, JavaScript, and Cascading Style Sheets (CSS). The projects include an address book application, a contact manager application, advertising manager, online store, and a Web log analyzer. CD-ROM includes the complete source code for the ten projects, additional resource links, corrections, and FAQs. Companion Web site features a working version of the ten projects built in the book. Microsoft Technologies .NET Platform: The next big overhaul to Microsoft's technologies that will bring enterprise distributed computing to the next level by fully integrating the Internet into the development platform. This will allow interaction between any machine, on any platform, and on any device. Visual Basic.NET: The update to this popular visual programming language will offer greater Web functionality, more sophisticated object-oriented language features, links to Microsoft's new common runtime, and a new interface. ASP.NET: A programming framework (formerly known as Active Server Pages) for building powerful Web-based enterprise applications; can be programmed using VB.NET or C#. C#: Microsoft's new truly object-oriented programming language that builds on the strengths of C++ and the ease of Visual Basic; promises to give Sun's Java a run for its money. Visit our Web site at [www.wiley.com/compbooks/](http://www.wiley.com/compbooks/) Visit the author's Web site at [www.10projectswithasp.net](http://www.10projectswithasp.net) Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

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