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Intelligent IoT Projects in 7 Days Packt Publishing Ltd
 Learn Why, What, Where, When Who and How behind the technologies of the AI & ML powering the Agents of Automation in a simple manner. Key features: Explore various trends of Automation impacting our lives today. Explains the reasons behind the proliferations of the various bots and autonomous agents. Explores the various areas being impacted by the use of these new workforce made of machines. Examines the components that make up Robots, Chatbots, Autonomous cars and Drones. Throws a light on the various limitations and threats encountered by the Agents of Automation. Explores how, Blockchain can be used to protect IOT, Robots, Drones and Autonomous cars. Throws a light on the various tools used to build Robots, Chatbots and RPA. Outlines the steps undertaken to manage while building projects to deploy the Agents of Automation. Description: We are faced with automatic machines and autonomous agents gradually replacing a lot of activities,

hitherto have been carried out by humans. From airports to call centers, shop floors in the factory to accounting and finance departments in large businesses, we are finding increasing applications of AI & ML led automation. Most of the time, the autonomous machines we interact with or work with, like the Robots, Drones and Self driving cars evoke awe, inspiration & perplexity at the same time. They seem to be the tools only used by the most technology empowered organizations and technology geeks. The effort of this book is to go under the veil of all these automation agents, explain their benefits and expose the way they work by leveraging hardware and software powered by AI & ML as well. We expect the book to demystify these technologies to the learners in a reader friendly manner without using too much of jargon, egging them to take the next step to develop a passion to follow and leverage these trends for their productivity and enhance their quality of life. What will you learn? From this book, you will get a very good idea about the various agents of automation like IOT, Robots, Chatbots, and Robotic Process Automation, Drones and Autonomous cars. Why do we use these machines? Where do we use them? Where do we find their applications? What are the components that go into

making of these machines? High level knowledge on how we can build them and what are the advantages, disadvantages, risks and appropriate way to limit these risks. Who this book is for This book is for all the students and those passionate to get a fundamental knowledge on various aspects of Disruptive technologies prevalent today like IOT, AI, ML, Blockchain and Automation. Engineering students, CXOs in organizations, Government officials, Digital natives and the young generation of technology enthusiasts will find this book extremely interesting and informative.

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Internet of Things Projects with ESP32 Maker Media, Inc.

This book provides an essential compilation of relevant and cutting edge academic and industry work on key cybersecurity

applications topics. Further, it introduces cybersecurity applications to the public at large to develop their cybersecurity applications knowledge and awareness. The book concentrates on a wide range of advances related to Cybersecurity Applications which include, among others, applications in the areas of Data Science, Internet of Things, Artificial Intelligence, Robotics, Web, High-Tech Systems, Cyber-Physical Systems, Mobile Devices, Digital Media, and Cloud Computing. It introduces the concepts, techniques, methods, approaches and trends needed by cybersecurity application specialists and educators for keeping current their cybersecurity applications knowledge. Further, it provides a glimpse of future directions where cybersecurity applications are headed. The book can be a valuable resource to applied cybersecurity experts towards their professional development efforts and to students as a supplement to their cybersecurity courses.

Bluetooth Low Energy Academic Press

Use the power of BLE to create exciting IoT applications About This Book Build hands-on IoT projects using Bluetooth Low Energy and learn about Bluetooth 5 and its features. Build a health tracking system, and indoor navigation and warehouse weather monitoring projects using smart devices. Build on a theoretical foundation and create a practice-based understanding of Bluetooth Low Energy. Who This Book Is For If you're an application developer, a hardware enthusiast, or just curious about the Internet of Things and how to convert it into hands-on projects, then this book is for you. Having some knowledge of writing mobile applications will be advantageous. What You Will Learn Learn about the architecture and IoT uses of BLE, and in which domains it is being used the most Set up and learn about various development platforms (Android, iOS, Firebase, Raspberry Pi, Beacons, and GitHub) Create an Explorer App (Android/iOS) to diagnose a Fitness Tracker Design a Beacon with the Raspberry Pi and write an app to detect the Beacon Write a mobile app to periodically poll the BLE tracking sensor Compose an app to read data periodically from temperature and humidity sensors Explore more applications of BLE with IoT Design projects for both Android and iOS mobile platforms In Detail Bluetooth Low Energy, or Bluetooth Smart, is Wireless Personal Area networking aimed at smart devices and IoT applications. BLE has been increasingly adopted by application developers and IoT enthusiasts to establish connections between smart devices. This book initially covers all the required aspects of BLE, before you start working on IoT projects. In the initial stages of the book, you will learn about the basic aspects of Bluetooth Low Energy—such as discovering devices, services, and characteristics—that will be helpful for advanced-level projects. This book will guide you through building hands-on projects using BLE and IoT. These projects include tracking health data, using a mobile App, and making this data available for health practitioners; Indoor navigation; creating beacons using the Raspberry Pi; and warehouse weather Monitoring. This book also covers aspects of Bluetooth 5 (the latest release) and its effect on each of these projects. By the end of this book, you will have hands-on experience of using Bluetooth Low Energy to integrate with smart devices and IoT projects. Style and Approach A practical guide that will help you promote yourself into an expert by building and exploring practical applications of Bluetooth Low Energy.

TinyML CRC Press

Unleash the power of the Raspberry Pi 3 board to create interesting IoT projects Key Features Learn how to interface various sensors and actuators with the Raspberry Pi 3 and send this data to the cloud. Explore the possibilities offered by the IoT by using the Raspberry Pi to upload measurements to Google Docs. A practical guide that will help you create a Raspberry Pi

robot using IoT modules. Book Description This book is designed to introduce you to IoT and Raspberry Pi 3. It will help you create interesting projects, such as setting up a weather station and measuring temperature and humidity using sensors; it will also show you how to send sensor data to cloud for visualization in real-time. Then we shift our focus to leveraging IoT for accomplishing complex tasks, such as facial recognition using the Raspberry Pi camera module, AWS Rekognition, and the AWS S3 service. Furthermore, you will master security aspects by building a security surveillance system to protect your premises from intruders using Raspberry Pi, a camera, motion sensors, and AWS Cloud. We'll also create a real-world project by building a Wi-Fi - controlled robot car with Raspberry Pi using a motor driver circuit, DC motor, and a web application. This book is a must-have as it provides a practical overview of IoT's existing architectures, communication protocols, and security threats at the software and hardware levels—security being the most important aspect of IoT. What you will learn Understand the concept of IoT and get familiar with the features of Raspberry Pi Learn to integrate sensors and actuators with the Raspberry Pi Communicate with cloud and Raspberry using communication protocols such as HTTP and MQTT Build DIY projects using Raspberry Pi, JavaScript/node.js and cloud (AWS) Explore the best practices to ensure the security of your connected devices Who this book is for If you're a developer or electronics engineer and are curious about the Internet of Things, then this is the book for you. With only a rudimentary understanding of electronics, the Raspberry Pi, or similar credit-card sized computers, and some programming experience, you will be taught to develop state-of-the-art solutions for the Internet of Things in an instant.

[Fundamentals of Internet of Things](#) Apress

This book is a practical guide to programming Bluetooth Low Energy in iPhones and iPads. In this book, you will learn the basics of how to program an iOS device to communicate with any Central or Peripheral device over Bluetooth Low Energy. Each chapter of the book builds on the previous one, culminating in three projects: - A Beacon and Scanner - A Echo Server and Client - A Remote Controlled Device Through the course of the book you will learn important concepts that relate to: - How Bluetooth Low Energy works - How data is sent and received - Common paradigms for handling data This book is excellent for anyone who has basic or advanced knowledge of iOS programming in SWIFT.

[Advances in Edge Computing: Massive Parallel Processing and Applications](#) Packt Publishing Ltd

The First Complete Guide to Bluetooth Low Energy: How It Works, What It Can Do, and How to Apply It A radical departure from conventional Bluetooth technology, Bluetooth low energy (BLE) enables breakthrough wireless applications in industries ranging from healthcare to transportation. Running on a coin-sized battery, BLE can operate reliably for years, connecting and extending everything from personal area network devices to next-generation sensors. Now, one of the standard's leading developers has written the first comprehensive, accessible introduction to BLE for every system developer, designer, and engineer. Robin Heydon, a member of the Bluetooth SIG Hall of Fame, has brought together essential information previously scattered through multiple standards documents, sharing the context and expert insights needed to implement high-performance working systems. He first reviews BLE's design goals, explaining how they drove key architectural decisions, and introduces BLE's innovative usage models. Next, he thoroughly covers how the two main parts of BLE, the controller and host, work together, and then addresses key issues from security and profiles through testing and qualification. This knowledge has

enabled the creation of Bluetooth Smart and Bluetooth Smart Ready devices. This guide is an indispensable companion to the official BLE standards documents and is for every technical professional and decision-maker considering BLE, planning BLE products, or transforming plans into working systems. Topics Include BLE device types, design goals, terminology, and core concepts Architecture: controller, host, applications, and stack splits Usage models: presence detection, data broadcasting, connectionless models, and gateways Physical Layer: modulation, frequency band, radio channels, power, tolerance, and range Direct Test Mode: transceiver testing, hardware interfaces, and HCI Link Layer: state machine, packets, channels, broadcasting, encryption, and optimization HCI: physical/logical interfaces, controller setup, and connection management L2CAP: channels and packet structure, and LE signaling channels Attributes: grouping, services, characteristics, and protocols Security: pairing, bonding, and data signing Generic Access Profiles: roles, modes, procedures, security modes, data advertising, and services Applications, devices, services, profiles, and peripherals Testing/qualification: starting projects, selecting features, planning, testing, compliance, and more

[Protocols and Applications for the Industrial Internet of Things](#) CRC Press

With Bluetooth Low Energy (BLE), smart devices are about to become even smarter. This practical guide demonstrates how this exciting wireless technology helps developers build mobile apps that share data with external hardware, and how hardware engineers can gain easy and reliable access to mobile operating systems. This book provides a solid, high-level overview of how devices use BLE to communicate with each other. You'll learn useful low-cost tools for developing and testing BLE-enabled mobile apps and embedded firmware and get examples using various development platforms—including iOS and Android for app developers and embedded platforms for product designers and hardware engineers. Understand how data is organized and transferred by BLE devices Explore BLE's concepts, key limitations, and network topology Dig into the protocol stack to grasp how and why BLE operates Learn how BLE devices discover each other and establish secure connections Set up the tools and infrastructure for BLE application development Get examples for connecting BLE to iPhones, iPads, Android devices, and sensors Develop code for a simple device that transmits heart rate data to a mobile device

[Guide to Bluetooth Security](#) IGI Global

This document provides info. to organizations on the security capabilities of Bluetooth and provide recommendations to organizations employing Bluetooth technologies on securing them effectively. It discusses Bluetooth technologies and security capabilities in technical detail. This document assumes that the readers have at least some operating system, wireless networking, and security knowledge. Because of the constantly changing nature of the wireless security industry and the threats and vulnerabilities to the technologies, readers are strongly encouraged to take advantage of other resources (including those listed in this document) for more current and detailed information. Illustrations.

Key Technologies of Internet of Things and Smart Grid

Tony Gaitatzis

FUNDAMENTALS OF INTERNET OF THINGS Fundamentals of Internet of Things: For Students and Professionals teaches the principles of IoT systems. It employs a systematic approach to explain IoT architecture models and their layers. The textbook is arranged based on various layers of an architecture model. For readers who are unfamiliar with the concept of data communication and networks, the first chapter of this book

covers the fundamentals of data communication and networks. It can also be used as review material for those who are already familiar with the concept. The book begins with many examples of IoT use cases to show readers how IoT can be applied to various IoT verticals. The concept of smart sensors is then described, as well as their applications in the IoT ecosystem. Because internet connectivity is an essential part of any IoT system, the book explores wired and wireless connectivity schemes including cellular IoT in the 4G and 5G eras. IoT protocols, analytics, as well as IoT security and privacy are important topics that are explained in this book with simple explanations. The last chapter of this book is dedicated to IoT solution development. IoT is one of the most rapidly evolving technologies today, and there is no better guide to this rapidly expanding sector than *Fundamentals of Internet of Things (IoT) for Students and Professionals*. Features: Simple explanations of complex concepts More than 300 exercise problems and advanced exercise questions Provided solutions for the exercise problems 10 practical IoT projects

[IoT Fundamentals](#) IGI Global

Embedded Systems For Engineers and Students is a comprehensive textbook written to provide an in-depth understanding of the principles and practical applications of embedded systems. The book begins with an introduction to the basics of embedded systems, including the hardware and software components, design methodologies, and programming languages. It then delves into the different types of microcontrollers and processors commonly used in embedded systems, their architectures, and how to program them using high-level programming languages such as C and C++. The book also covers topics such as real-time operating systems, interrupts, and event-driven programming. It discusses the importance of software testing and debugging techniques and introduces students to different debugging tools and methods. It is a valuable resource for anyone interested in learning about embedded systems. It provides a comprehensive introduction to the principles and practical applications of embedded systems, making it an ideal textbook for students and a useful reference guide for practicing engineers. Book Portions: Embedded Systems Introduction Microcontrollers and Sensors Embedded Programming Embedded Systems Design The highly complex processing capabilities found in modern digital gadgets utilized in homes, cars, and wearables are made up of embedded systems. This book will demonstrate how to create circuits using various circuit components and how to create programmable circuits with various microcontrollers. The book takes you through the fundamental concepts of embedded systems, including real-time operation and the Internet of Things (IoT). In order to create a high-performance embedded device, the book will also assist you in becoming familiar with embedded system design, circuit design, hardware fabrication, firmware development, and debugging. You'll explore techniques such as designing electronics circuits, use of modern embedded system software, electronics circuits. By the end of the book, you'll be able to design and build your own complex digital devices because you'll have a firm grasp of the ideas underpinning embedded systems, electronic circuits, programmable circuits, microcontrollers, and processors.

Getting Started with Bluetooth Low Energy Apress

Get started with the extremely versatile and powerful Arduino Nano 33 BLE Sense, a smart device based on the nRF52840 from Nordic semiconductors. This book introduces you to developing with the device. You'll learn how to access Arduino I/O such as analog and digital I/O, serial communication, SPI and I2C. The book also covers how to access sensor devices on Arduino Nano

33 BLE Sense, how to interact with other external devices over BLE, and build embedded Artificial Intelligence applications. Arduino Nano 33 BLE Sense consists of multiple built-in sensors such as 9-axis inertial, humidity, temperature, barometric, microphone, gesture, proximity, light color and light intensity sensors. With this book, you'll see how this board supports the Bluetooth Low Energy (BLE) network, enabling interactions with other devices over the network. What You'll Learn Prepare and set up Arduino Nano 33 BLE Sense board Operate Arduino Nano 33 BLE Sense board hardware and software Develop programs to access Arduino Nano 33 BLE Sense board I/O Build IoT programs with Arduino Nano 33 BLE Sense board Who This Book Is For Makers, developers, students, and professionals at any level interested in developing with the Arduino Nano 33 BLE Sense board.

Internet of Things Theory and Practice Springer Nature

McKinsey Global Institute predicts Internet of Things (IoT) could generate up to \$11.1 trillion a year in economic value by 2025. Gartner Research Company expects 20 billion inter-connected devices by 2020 and, as per Gartner, the IoT will have a significant impact on the economy by transforming many enterprises into digital businesses and facilitating new business models, improving efficiency and increasing employee and customer engagement. It's clear from above and our research that the IoT is a game changer and will have huge positive impact in foreseeable future. In order to harvest the benefits of IoT revolution, the traditional software development paradigms must be fully upgraded. The mission of our book, is to prepare current and future software engineering teams with the skills and tools to fully utilize IoT capabilities. The book introduces essential IoT concepts from the perspectives of full-scale software development with the emphasis on creating niche blue ocean products. It also: Outlines a fundamental full stack architecture for IoT Describes various development technologies in each IoT layer Explains IoT solution development from Product management perspective Extensively covers security and applicable threat models as part of IoT stack The book provides details of several IoT reference architectures with emphasis on data integration, edge analytics, cluster architectures and closed loop responses.

[IoT Projects with Bluetooth Low Energy](#) Apress

The rapid advance of Internet of Things (IoT) technologies has resulted in the number of IoT-connected devices growing exponentially, with billions of connected devices worldwide. While this development brings with it great opportunities for many fields of science, engineering, business and everyday life, it also presents challenges such as an architectural bottleneck - with a very large number of IoT devices connected to a rather small number of servers in Cloud data centers - and the problem of data deluge. Edge computing aims to alleviate the computational burden of the IoT for the Cloud by pushing some of the computations and logics of processing from the Cloud to the Edge of the Internet. It is becoming commonplace to allocate tasks and applications such as data filtering, classification, semantic enrichment and data aggregation to this layer, but to prevent this new layer from itself becoming another bottleneck for the whole computing stack from IoT to the Cloud, the Edge computing layer needs to be capable of implementing massively parallel and distributed algorithms efficiently. This book, *Advances in Edge Computing: Massive Parallel Processing and Applications*, addresses these challenges in 11 chapters. Subjects covered include: Fog storage software architecture; IoT-based crowdsourcing; the industrial Internet of Things; privacy issues; smart home management in the Cloud and the Fog; and a cloud robotic solution to assist medical applications. Providing an

overview of developments in the field, the book will be of interest to all those working with the Internet of Things and Edge computing.

Hands-On Internet of Things with Blynk Packt Publishing Ltd
Build cutting-edge projects with ChatGPT, PlatformIO, ESP32, and Arduino-compatible sensors by integrating AWS Cloud and the ThingsBoard dashboard
Key Features
Leverage ChatGPT to generate code on ESP32 for sending sensor data to AWS Cloud
Create your own visualization dashboard on ThingsBoard Cloud
Follow step-by-step configuration guidance to ingest, process, store, and query data on AWS Cloud
Purchase of the print or Kindle book includes a free PDF eBook
Book Description
Unlike other IoT books that focus on theory and generic applications, this guide takes a practical approach, empowering you to leverage ChatGPT to build your very first IoT prototype. With over 20 years of experience in wireless and IoT technologies and a background as an instructor, Jun Wen expertly guides you from project kick-off to a fully functional prototype. The book emphasizes the transformative impact of ChatGPT for IoT, teaching you how to use ChatGPT to generate code for your applications, even with limited coding experience. You'll be introduced to using PlatformIO IDE within Visual Studio Code and discover the cutting-edge RISC-V architecture, the ESP32 MCU, Arduino-compatible sensors, and integration methods for AWS and the ThingsBoard dashboard. Working through 10 different project examples, including flame detection, smoke detection, and air quality measurement, you'll become proficient in the functions and specifications of each sensor and the use cases they solve. By the end of this book, you'll be ready to undertake IoT development projects, bridging the gap between your ideas and functional creations.
What you will learn
Master IoT essentials, such as networks, end devices, wireless connectivity, and the cloud
Explore the ChatGPT prompting framework and build crucial skills for IoT projects
Discover best practices for building robust IoT hardware prototypes
Find out how to set up Visual Studio Code and PlatformIO IDE
Connect ESP32 to AWS through TLS and MQTT
Explore popular connectivity technologies widely adopted in IoT
Integrate IoT sensors with ESP32 to capture accurate data using ChatGPT's assistance
Who this book is for
If you're a beginner interested in applying IoT technology to your projects but face challenges due to limited experience in embedded software coding, specifically in C and C++, this book is for you. Whether you're a student, hardware hobbyist, DIY enthusiast, IoT developer, or professional from a non-technical background, if you feel that your ability to innovate is often stalled by the complexity of software coding, this easy-to-follow guide to using ChatGPT for generating example code will boost your IoT prototype development.

Principles and Applications of Narrowband Internet of Things (NB-IoT) Springer Nature

Build DIY wireless projects using the Raspberry Pi Zero W board
About This Book
Explore the functionalities of the Raspberry Pi Zero W with exciting projects
Master the wireless features (and extend the use cases) of this \$10 chip
A project-based guide that will teach you to build simple yet exciting projects using the Raspberry Pi Zero W board
Who This Book Is For
If you are a hobbyist or an enthusiast and want to get your hands on the latest Raspberry Pi Zero W to build exciting wireless projects, then this book is for you. Some prior programming knowledge, with some experience in electronics, would be useful.
What You Will Learn
Set up a router and connect Raspberry Pi Zero W to the internet
Create a two-wheel mobile robot and control it from your Android device
Build an automated home bot assistant device
Host your personal website with the help of Raspberry Pi Zero W
Connect Raspberry Pi Zero to speakers to play your favorite

music
Set up a web camera connected to the Raspberry Pi Zero W and add another security layer to your home automation
In Detail
The Raspberry Pi has always been the go-to, lightweight ARM-based computer. The recent launch of the Pi Zero W has not disappointed its audience with its \$10 release. "W" here stands for Wireless, denoting that the Raspberry Pi is solely focused on the recent trends for wireless tools and the relevant use cases. This is where our book—Raspberry Pi Zero W Wireless Projects—comes into its own. Each chapter will help you design and build a few DIY projects using the Raspberry Pi Zero W board. First, you will learn how to create a wireless decentralized chat service (client-client) using the Raspberry Pi's features?. Then you will make a simple two-wheel mobile robot and control it via your Android device over your local Wi-Fi network. Further, you will use the board to design a home bot that can be connected to plenty of devices in your home. The next two projects build a simple web streaming security layer using a web camera and portable speakers that will adjust the playlist according to your mood. You will also build a home server to host files and websites using the board. Towards the end, you will create free Alexa voice recognition software and an FPV Pi Camera, which can be used to monitor a system, watch a movie, spy on something, remotely control a drone, and more. By the end of this book, you will have developed the skills required to build exciting and complex projects with Raspberry Pi Zero W.
Style and approach
A step-by-step guide that will help you design and create simple yet exciting projects using the Raspberry Pi Zero W board.

Information System Design: Communication Networks and IoT Springer Nature

Develop Internet of Things projects with Sketch to build your Arduino programs. This book is a quick reference guide to getting started with Nano 33 IoT, Arduino's popular IoT board. You'll learn how to access the Arduino I/O, understand the WiFi and BLE networks, and optimize your board by connecting it to the Arduino IoT Cloud. Arduino Nano 33 IoT is designed to build IoT solutions with supported WiFi and BLE networks. This board can be easily extend through I/O pins, sensors and actuators.
Beginning Arduino Nano 33 IoT is the perfect solution for those interested in learning how to use the latest technology and project samples through a practical and content-driven approach.
What You'll Learn
Prepare and set up Arduino Nano 33 IoT board
Operate Arduino Nano 33 IoT board hardware and software
Develop programs to access Arduino Nano 33 IoT board I/O
Build IoT programs with Arduino Nano 33 IoT board
Who This Book Is For
Makers, developers, students, and professional of all levels.

Accelerating IoT Development with ChatGPT Springer Nature

The Internet of Things (IoT) has become a major influence on the development of new technologies and innovations. When utilized properly, these applications can enhance business functions and make them easier to perform. *Protocols and Applications for the Industrial Internet of Things* discusses and addresses the difficulties, challenges, and applications of IoT in industrial processes and production and work life. Featuring coverage on a broad range of topics such as industrial process control, machine learning, and data mining, this book is geared toward academicians, computer engineers, students, researchers, and professionals seeking current and relevant research on applications of the IoT.

AI & ML - Powering the Agents of Automation Packt Publishing Ltd
Connect things to create amazing IoT applications in minutes
Key Features
Use Blynk cloud and Blynk server to connect devices
Build IoT applications on Android and iOS platforms
A practical guide that will show how to connect devices using Blynk and Raspberry Pi 3
Book Description
Blynk, known as the most user-

friendly IoT platform, provides a way to build mobile applications in minutes. With the Blynk drag-n-drop mobile app builder, anyone can build amazing IoT applications with minimal resources and effort, on hardware ranging from prototyping platforms such as Arduino and Raspberry Pi 3 to industrial-grade ESP8266, Intel, Sierra Wireless, Particle, Texas Instruments, and a few others. This book uses Raspberry Pi as the main hardware platform and C/C++ to write sketches to build projects. The first part of this book shows how to set up a development environment with various hardware combinations and required software. Then you will build your first IoT application with Blynk using various hardware combinations and connectivity types such as Ethernet and Wi-Fi. Then you'll use and configure various widgets (control, display, notification, interface, time input, and some advanced widgets) with Blynk App Builder to build applications. Towards the end, you will learn how to connect with and use built-in sensors on Android and iOS mobile devices. Finally you will learn how to build a robot that can be controlled with a Blynk app through the Blynk cloud and personal server. By the end of this book, you will have hands-on experience building IoT applications using Blynk. What you will learn Build devices using Raspberry Pi and various sensors and actuators Use Blynk cloud to connect and control devices through the Blynk app builder Connect devices to Blynk cloud and server through Ethernet and Wi-Fi Make applications using Blynk app builder on Android and iOS platforms Run Blynk personal server on the Windows, MAC, and Raspberry Pi platforms Who this book is for This book is targeted at any stakeholder working in the IoT sector who wants to understand how Blynk works and build exciting IoT projects. Prior understanding of Raspberry Pi, C/C++, and electronics is a must.

[Android Things Projects](#) IOS Press

Management of IoT Open Data Projects in Smart Cities demonstrates a key project management methodology for the implementation of Smart Cities projects: Principles and Regulations for Smart Cities (PaRSC). This methodology adopts a basis in classic Scrum soft management methods with carefully considered expansions. These include design principals for high-level architecture design and recommendations for design at the level of project teams. This approach enables the deployment of rule-based linguistic models for IoT project management, supporting the design of high-level architecture and providing rules for Scrum Smart Cities team. After reading this book, the reader will have a thorough grounding in IoT nodes and methods of their design, the acquisition and use of open data, and the use of project management methods to collect open data and build business models based on them. - Presents a unified method for smart urban interventions based on the adjustment of Scrum to

the complexity of smart city projects - Establishes a key model for intelligent systems verification in Smart Cities projects - Demonstrates how practitioners can gain from the adoption of rule-based linguistic models

[LPWAN Technologies for IoT and M2M Applications](#) Sheikh Muhammad Ibraheem

Master the technique of using ESP32 as an edge device in any IoT application where wireless communication can make life easier Key Features Gain practical experience in working with ESP32 Learn to interface various electronic devices such as sensors, integrated circuits (ICs), and displays Apply your knowledge to build real-world automation projects Book Description Developing IoT Projects with ESP32 provides end-to-end coverage of secure data communication techniques from sensors to cloud platforms that will help you to develop production-grade IoT solutions by using the ESP32 SoC. You'll learn how to employ ESP32 in your IoT projects by interfacing with different sensors and actuators using different types of serial protocols. This book will show you how some projects require immediate output for end-users, and cover different display technologies as well as examples of driving different types of displays. The book features a dedicated chapter on cybersecurity packed with hands-on examples. As you progress, you'll get to grips with BLE technologies and BLE mesh networking and work on a complete smart home project where all nodes communicate over a BLE mesh. Later chapters will show you how IoT requires cloud connectivity most of the time and remote access to smart devices. You'll also see how cloud platforms and third-party integrations enable endless possibilities for your end-users, such as insights with big data analytics and predictive maintenance to minimize costs. By the end of this book, you'll have developed the skills you need to start using ESP32 in your next wireless IoT project and meet the project's requirements by building effective, efficient, and secure solutions. What you will learn Explore advanced use cases like UART communication, sound and camera features, low-energy scenarios, and scheduling with an RTOS Add different types of displays in your projects where immediate output to users is required Connect to Wi-Fi and Bluetooth for local network communication Connect cloud platforms through different IoT messaging protocols Integrate ESP32 with third-party services such as voice assistants and IFTTT Discover best practices for implementing IoT security features in a production-grade solution Who this book is for If you are an embedded software developer, an IoT software architect or developer, a technologist, or anyone who wants to learn how to use ESP32 and its applications, this book is for you. A basic understanding of embedded systems, programming, networking, and cloud computing concepts is necessary to get started with the book.

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