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Nota di contenuto	Chapter 1: Embedded Systems and Architectures -- Chapter 2: Embedded Systems Software Development -- Chapter 3: The Tock Architecture System -- Chapter 4: Rust for Tock -- Chapter 5: Getting Started with Tock OS -- Chapter 6: The Structure of a Custom Tock System -- Chapter 7: Userspace Applications Development -- Chapter 8: Writing a Synchronus Syscall Capsule -- Chapter 9: Writing an Asynchronus Syscall Capsule -- Chapter 10: The Implementation of a Service Capsule -- Chapter 12: Tock Userspace Driver -- Chapter 12: Tock Systems Manager.
Sommario/riassunto	Build secure and reliable IoT applications for micro:bit and Raspberry Pi Pico by using Rust and Tock. One of the first Operating Systems written in Rust, Tock is designed to safely run multiple applications on low power devices, enabling you to build a secure foundation for IoT systems. It is an open-source OS that has recently gained popularity as companies such as Google[1] explore and integrate it into their products. This book guides you through the steps necessary to customize and integrate Tock into your devices. First, you'll explore the

characteristics of Tock and how to run it on two of the most popular IoT platforms: micro:bit and Raspberry Pi Pico. You'll also take a look at Rust and how to use it for building secure applications with T6ock. The book focuses on the Tock kernel internals and presents the steps necessary to integrate new features. From simple drivers to the more complex asynchronous ones, you are provided with a detailed description of the Tock kernel API. Next, you'll review the Tock applications framework for C. Starting from simple Tock APIs to the more complex Inter-Process Communication system, this book provides a complete overview of the Tock application ecosystem. By taking a practical approach, Getting Started with Secure Embedded Systems provides a starting point for building a secure IoT foundation using the Tock Operating System. You will: Use Rust for embedded systems development Write applications and drivers for Tock Customize the Tock kernel for specific hardware platforms Set a solid base for building secure and reliable IoT applications Use Tock to ensure the security of your microcontrollers and integrate them into your projects Manage products that rely on Tock Who This Book Is For IoT system designers, developers, and integrators who are familiar with operating systems concepts. The book can also be suitable for people with less experience, who want to gain an overview of the latest hardware and software technologies related to building secure IoT systems.