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Formato	Materiale a stampa
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Nota di contenuto	Intro -- Title page -- Copyright and Credits -- Dedication -- Contributors -- Table of Contents -- Preface -- Section 1: Introduction to WebAssembly -- Chapter 1: Understanding LLVM -- Technical requirements -- Understanding compilers -- Compiled languages -- Compiler efficiency -- Exploring LLVM -- LLVM in action -- Summary -- Chapter 2: Understanding Emscripten -- Technical requirements -- Installing Emscripten using emsdk -- Generating asm.js using Emscripten -- Running Hello World with Emscripten in Node.js -- Running Hello World with Emscripten in the browser -- Exploring other options in emsdk -- Listing the tools and SDK -- Managing the tools and SDK -- Understanding various levels of optimizations -- Optimizations -- Closure Compiler -- Summary -- Chapter 3: Exploring WebAssembly Modules -- Technical requirements -- Understanding how WebAssembly works -- Understanding JavaScript execution inside the JavaScript engine -- Understanding WebAssembly execution inside the JavaScript engine -- Exploring the WebAssembly text format -- Building a function in WebAssembly text

format -- Summary -- Section 2: WebAssembly Tools

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Chapter 6: Installing and Using Binaryen -- Technical requirements -- Installing and using Binaryen -- Linux/macOS -- Windows -- wasm-as -- wasm-dis -- wasm-opt -- wasm2js -- Summary -- Section 3: Rust and WebAssembly -- Chapter 7: Integrating Rust with WebAssembly -- Technical requirements -- Installing Rust -- Converting Rust into WebAssembly via rustc -- Converting Rust into WebAssembly via Cargo -- Installing wasm-bindgen -- Converting Rust into WebAssembly via wasm-bindgen -- Summary -- Chapter 8: Bundling WebAssembly Using wasm-pack -- Technical requirements

Bundling WebAssembly modules with webpack -- Bundling WebAssembly modules with Parcel -- Introducing wasm-pack -- Why do you need wasm-pack? -- How to use wasm-pack -- Packing and publishing using wasm-pack -- Summary -- Chapter 9: Crossing the Boundary between Rust and WebAssembly -- Technical requirements -- Sharing classes from Rust with JavaScript -- Sharing classes from JavaScript with Rust -- Calling the JavaScript API via WebAssembly -- Calling closures via WebAssembly -- Importing the JavaScript function into Rust -- Calling a web API via WebAssembly -- Summary

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## Sommario/riassunto

Understand the basic building blocks of WebAssembly and learn, install, and use various tools from the Rust and WebAssembly ecosystem

**Key Features**

- Understand the Rust programming language and WebAssembly concepts for web development
- Build web, mobile, and embedded apps using WebAssembly
- Enhance the scalability and resilience of your web apps

**Book Description**

Rust is an open source language tuned toward safety, concurrency, and performance. WebAssembly brings all the capabilities of the native world into the JavaScript world. Together, Rust and WebAssembly provide a way to create robust and performant web applications. They help make your web applications blazingly fast and have small binaries. Developers working with JavaScript will be able to put their knowledge to work with this practical guide to developing faster and maintainable code. Complete with step-by-step explanations of essential concepts, examples, and self-assessment questions, you'll begin by exploring WebAssembly, using the various tools provided by the ecosystem, and understanding how to use WebAssembly and JavaScript together to build a high-performing application. You'll then learn binary code to work with a variety of tools that help you to convert native code into WebAssembly. The book will introduce you to the world of Rust and the ecosystem that makes it easy to build/ship WebAssembly-based applications. By the end of this WebAssembly Rust book, you'll be able to create and ship your own WebAssembly applications using Rust and JavaScript, understand how to debug, and use the right tools to optimize and deliver high-performing applications.

**What you will learn**

- Explore WebAssembly and the different tools available in the WebAssembly ecosystem
- Understand the raw WebAssembly binary and the WebAssembly text format
- Use the Web and JavaScript API with wasm-bindgen
- Optimize Rust and WebAssembly for high

performanceRun and debug WebAssembly and Rust codeExplore  
various tools available in the RustWASM ecosystemWho this book is  
forThis book is for JavaScript developers who want to deliver better  
performance and ship type-safe code. Rust developers or backend  
engineers looking to build full-stack applications without worrying too  
much about JavaScript programming will also find the book useful.

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