

1. Record Nr.	UNINA9910392715903321
Autore	Dunbar Norman
Titolo	Arduino Software Internals : A Complete Guide to How Your Arduino Language and Hardware Work Together / / by Norman Dunbar
Pubbl/distr/stampa	Berkeley, CA : , : Apress : , : Imprint : Apress, , 2020
ISBN	9781484257906 1484257901
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (xix, 617 pages) : illustrations
Disciplina	006.22
Soggetti	Makerspaces Compilers (Computer programs) Operating systems (Computers) Maker Compilers and Interpreters Operating Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Chapter 1. Introduction -- Chapter 2. Arduino Compilation -- Chapter 3. Arduino Language Reference.-Chapter 4. Arduino Classes -- Chapter 5. Converting to the AVR Language -- Chapter 6. Alternatives to the Arduino IDE -- Chapter 7. ATmega328P Configuration and Management.-Chapter 8. ATmega328P Hardware - Timers and Counters -- Chapter 9. ATmega328P Hardware - ADC and USART -- Appendix A: Arduino Paths -- Appendix B: ATmega328P Pinout -- Appendix C: ATmega328P Power Restrictions -- Appendix D: Predefined Settings -- Appendix E: ADC Temperature Conversion -- Appendix F: Assembly Language - Briefly -- Appendix G: Smallest Blink Sketch? -- Appendix H: NormDuino -- Appendix I: No ICSP? No Problem! -- Appendix J: Breadboard 8MHz Board Setup -- Appendix K: AVRAssist.
Sommario/riassunto	It's not enough to just build your Arduino projects; it's time to actually learn how things work! This book will take you through not only how to use the Arduino software and hardware, but more importantly show you how it all works and how the software relates to the hardware.

Arduino Software Internals takes a detailed dive into the Arduino environment. We'll cover the Arduino language, hardware features, and how makers can finally ease themselves away from the hand holding of the Arduino environment and move towards coding in plain AVR C++ and talk to the microcontroller in its native language. What You'll Learn: How the Arduino Language interfaces with the hardware, as well as how it actually works in C++; How the compilation system works, and how it can be altered to suit personal requirements; A small amount of AVR Assembly Language; Exactly how to set up and use the various hardware features of the AVR without needing to try and decode the data sheets – which are often bug ridden and unclear; Alternatives to the Arduino IDE which might give them a better workflow; How to build their own Arduino clone from scratch. Who This Book Is For: No expertise is required for this book! All you need is an interest in learning about what you're making with Arduinos and how they work. This book is also useful for those looking to understand the AVR microcontroller used in the Arduino boards. In other words, all Makers are welcome!

---