



Hackers: Heroes of the Computer Revolution, Steven Levy, Penguin Group (USA) Incorporated, 2001, 0141000511, 9780141000510, 455 pages. A mere fifteen years ago, 'computer nerds' were seen as marginal weirdos, outsiders whose world would never resonate with the mainstream. That was before one pioneering work documented the underground computer revolution that was about to change our world forever. With groundbreaking profiles of Bill Gates, Steve Wozniak, MIT's Tech Model Railroad Club, and more, Steven Levy's Hackers brilliantly captured a seminal moment when the risk-takers and explorers were poised to conquer twentieth-century America's last great frontier..

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Smartbomb The Quest for Art, Entertainment, and Big Bucks in the Videogame Revolution, Heather Chaplin, Aaron Ruby, 2005, Games, 287 pages. Ranges from the hackers at MIT in the 1960s to professional "cyberathletes," in an up-close and personal look at the egos, battles, and one-upmanship of the mavericks, geniuses

The hacker crackdown law and disorder on the electronic frontier, Bruce Sterling, Oct 1, 1992, Computers, 328 pages. A searing probe into computer hacking--a cutting-edge nonfiction book by the bestselling co-author of The Difference Engine. Sterling looks at the issue of computer freedom vs

The CEH Prep Guide The Comprehensive Guide to Certified Ethical Hacking, Ronald L. Krutz, Russell Dean Vines, Oct 22, 2007, Computers, 768 pages. The Certified Ethical Hacker program began in 2003 and ensures that IT professionals apply security principles in the context of their daily job scope Presents critical

Hacking the Xbox An Introduction to Reverse Engineering, Andrew Huang, 2003, Computers, 272 pages. Provides step-by-step instructions on basic hacking techniques and reverse engineering skills along with information on Xbox security, hardware, and software..

Computer Hacking , Peggy J. Parks, Aug 8, 2008, , 104 pages. Examines the fascinating world of the criminal investigator and other professionals who are on the frontline of solving notorious crimes with the help of technological advances

Computer basics , , 1985, Computers, 128 pages. This is one of the introductory volumes in this extensive 23-volume series on computers that also includes a volume called The Personal Computer (1989)..

An Unofficial Guide to Ethical Hacking , Ankit Fadia, 2006, , 616 pages. The basic motive behind this book is to create a new wave of ethical hackers, which would revolutionise the global security scene. The book looks at topics such as hacking

Logic and Structured Design for Computer Programmers , Harold J. Rood, 1985, Computers, 370

pages. LOGIC AND STRUCTURED DESIGN is an introduction to the logic of data processing. It is intended for those who plan, but have not yet begun, to study programming, particularly

Historical Ontology , Ian Hacking, 2004, Philosophy, 279 pages. With the unusual clarity, distinctive and engaging style, and penetrating insight that have drawn such a wide range of readers to his work, Ian Hacking here offers his

Programming principles an introduction, John Motil, Jan 1, 1984, Computers, 434 pages. .

Inside Intel Andy Grove and the Rise of the World's Most Powerful Chip Company, Tim Jackson, Nov 9, 1998, Technology & Engineering, 422 pages. Presents a look inside the inner workings of Intel, and the competitive tactics of its chairman, Andrew Grove.

Computers and programming a neoclassical approach, Peter Olivieri, Michael W. Rubin, 1975, , 429 pages. .

American Salvage Stories, Bonnie Jo Campbell, 2009, Fiction, 170 pages. A lush and rowdy collection of stories set in a rural Michigan landscape, where wildlife, jobs, and ways of life are vanishing. "American Salvage" is rich with local color and

The Art of Halo Creating a Virtual World, Eric S. Trautmann, 2004, Art, 155 pages. A collection of interviews, anecdotes, commentary, and artwork spotlights the innovative work of the artists, musicians, writers, and game developers of Bungie Studios who

This 25th anniversary edition of Steven Levy's classic book traces the exploits of the computer revolution's original hackers -- those brilliant and eccentric nerds from the late 1950s through the early '80s who took risks, bent the rules, and pushed the world in a radical new direction. With updated material from noteworthy hackers such as Bill Gates, Mark Zuckerberg, Richard Stallman, and Steve Wozniak, Hackers is a fascinating story that begins in early computer research labs and leads to the first home computers.

Levy profiles the imaginative brainiacs who found clever and unorthodox solutions to computer engineering problems. They had a shared sense of values, known as "the hacker ethic," that still thrives today. Hackers captures a seminal period in recent history when underground activities blazed a trail for today's digital world, from MIT students finagling access to clunky computer-card machines to the DIY culture that spawned the Altair and the Apple II.

When I began researching Hackers--so many years ago that it's scary--I thought I'd largely be chronicling the foibles of a sociologically weird cohort who escaped normal human interaction by retreating to the sterile confines of computers labs. Instead, I discovered a fascinating, funny cohort who wound up transforming human interaction, spreading a culture that affects our views about everything from politics to entertainment to business. The stories of those amazing people and what they did is the backbone of Hackers: Heroes of the Computer Revolution.

But when I revisited the book recently to prepare the 25th Anniversary Edition of my first book, it was clear that I had luckily stumbled on the origin of a computer (and Internet) related controversy that still permeates the digital discussion. Throughout the book I write about something I called The Hacker Ethic, my interpretation of several principles implicitly shared by true hackers, no matter whether they were among the early pioneers from MIT's Tech Model Railroad Club (the Mesopotamia of hacker culture), the hardware hackers of Silicon Valley's Homebrew Computer Club (who invented the PC industry), or the slick kid programmers of commercial game software. One of those principles was 'Information Should Be Free'; This wasn't a justification of stealing, but an expression of the yearning to know more so one could hack more. The programs that early MIT hackers wrote for big computers were stored on paper tapes. The hackers would keep the tapes in a drawer by the computer so anyone could run the program, change it, and then cut a new tape for the next person to improve. The idea of

ownership was alien.

This idea came under stress with the advent of personal computers. The Homebrew Club was made of fanatic engineers, along with a few social activists who were thrilled at the democratic possibilities of PCs. The first home computer they could get their hands on was 1975's Altair, which came in a kit that required a fairly hairy assembly process. (Its inventor was Ed Roberts, an underappreciated pioneer who died earlier this year.) No software came with it. So it was a big deal when 19-year-old Harvard undergrad Bill Gates and his partner Paul Allen wrote a BASIC computer language for it. The Homebrew people were delighted with Altair BASIC, but unhappy that Gates and Allen charged real money for it. Some Homebrew people felt that their need for it outweighed their ability to pay. And after one of them got hold of a 'borrowed' tape with the program, he showed up at a meeting with a box of copies (because it is so easy to make perfect copies in the digital age), and proceeded to distribute them to anyone who wanted one, gratis.

This didn't sit well with Bill Gates, who wrote what was to become a famous 'Letter to Hobbyists,' basically accusing them of stealing his property. It was the computer-age equivalent to Luther posting the Ninety-Five Theses on the Castle Church. Gate's complaints would reverberate well into the Internet age, and variations on the controversy persist. Years later, when another undergrad named Shawn Fanning wrote a program called Napster that kicked off massive piracy of song files over the Internet, we saw a bloodier replay of the flap. Today, issues of cost, copying and control still rage--note Viacom's continuing lawsuit against YouTube and Google. And in my own business;journalism--availability of free news is threatening more traditional, expensive new-gathering. Related issues that also spring from controversies in Hackers are debates over the 'walled gardens' of Facebook and Apple's iPad.

I ended the original Hackers with a portrait of Richard Stallman, an MIT hacker dedicated to the principle of free software. I recently revisited him while gathering new material for the 25th Anniversary Edition of Hackers, he was more hard core than ever. He even eschewed the Open Source movement for being insufficiently noncommercial.

So Amazon.com readers, it's up to you. Those who have not read Hackers,, have fun and be amazed at the tales of those who changed the world and had a hell of a time doing it. Those who have previously read and loved Hackers, replace your beat-up copies, or the ones you loaned out and never got back, with this beautiful 25th Anniversary Edition from O'Reilly with new material about my subsequent visits with Gates, Stallman, and younger hacker figures like Mark Zuckerberg of Facebook. If you don't I may have to buy a scissors--and the next bad haircut could be yours!

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Steven Levy's classic book explains why the misuse of the word "hackers" to describe computer criminals does a terrible disservice to many important shapers of the digital revolution. Levy follows members of an MIT model railroad club--a group of brilliant budding electrical engineers and computer innovators--from the late 1950s to the mid-1980s. These eccentric characters used the term "hack" to describe a clever way of improving the electronic system that ran their massive railroad. And as they started designing clever ways to improve computer systems, "hack" moved over with them. These maverick characters were often fanatics who did not always restrict themselves to the letter of the law and who devoted themselves to what became known as "The Hacker Ethic." The book traces the history of hackers, from finagling access to clunky computer-card-punching machines to uncovering the inner secrets of what would become the Internet. This story of brilliant, eccentric, flawed, and often funny people devoted to their dream of a better world will appeal to a wide audience. --This text refers to an out of print or unavailable edition of this title.

This book is a history of the beginning, growth and rise of the use of computers by people outside of the big businesses and governments that worked to create them in proprietary silos. This 25th anniversary edition of Steven Levy's classic book retains its detailed and interesting chronicle of the events that brought computing power to the masses. It also records some of the problems, pitfalls, and failures along the way. Here you will find many names that computer lovers are sure to recognize from Bill Gates to Richard Stallman as well as many that are not as well known, but that deserve to have their victories recorded also.

I greatly appreciate that this book exists. To be honest, it wasn't always a fun read. That isn't a commentary on the quality of the writing, but rather on the ups and downs of the narrative. There were times when I found myself wishing I was there in the middle of the action and other times when I had difficulty knowing who to root for. There were still other moments when I found myself cringing as I read about events long past, wishing that different decisions had been made or disappointed at the actions and attitudes of geniuses.

I'm not going to spoil the book for anyone interested by giving out specific details. All I'll say here is that the story begins with a bunch of model railroaders who love technology and who fall in love with a computer they discover they may access freely in an out of the way room in a building at MIT in the late 1950s. They took their love of piecing together technological gadgets in imaginative and creative ways (hacks) and applied it to this new tool / toy. [Read more](#)

I am a senior engineer for network security operations, who when nine years old in 1980 started computing on a Timex-Sinclair ZX-80. I probably first heard the term "hacker" when "War Games" was released in 1983. I read Steven's book because it is an early but enlightening account (first published in 1984) of the Hacker Ethic.

Consider: in a closed, self-policed environment, like the computer labs of the 1960s and early 1970s, freely sharing information makes sense. In an open, under-policed environment, like the modern Internet, deviants abuse the Hacker Ethic. Well-intentioned "white hats" may explore the phone system purely to understand its operation, but evil-minded "black hats" abuse the same knowledge to make free long distance calls. Does this mean information should be confined? No -- full disclosure is still the best way to counter black hat activity.

Steven lays the groundwork for these thoughts, and serves up gems from hacker history. His 1970s quote from Popular Electronics editor Les Solomon is the earliest reference I know linking hacking to kung fu: "The computer is...an art form. It's the ultimate martial art." Steven also shares tales of Sierra On-Line, Apple Corp., Homebrew Computer Club, the Altair, and even Bill Gates' 1975 rant against software piracy.

Hackers covers the computer revolution- from research lab to home- up to approximately 1984, right before the Commodore 64 took over as #1 home computer. Even though the book is a large one, Mr. Levy keeps the focus on a single winding narrative throughout. This makes the book interesting to read and relatively easy to follow, but unfortunately tends to leave out parts of the computer revolution that don't fit into his rigid outline.

The outline is as follows: hacking begins at MIT and spreads to Stanford, and we see the genesis of video games in Spacewar. A new movement sprouts in post-hippie California with the release of Intel's first 8-bit chips, and this movement- dedicated to homebrew and user-built systems- is the font from which the Altair and the Apple II spring. Finally, the narrative ends on the rise of game software companies- especially Sierra- on the strength of the Apple II's market share. There's also an epilogue on Richard Stallman. While other stories are recounted in short fashion along the way- John Harris' Sierra/Frogger/Atari story in particular- little is done to acknowledge the larger picture of the industry, whether it's universities outside of MIT and Stanford or Atari's massive rise to and fall from power.

Steven Levy writes much like Tom Wolfe circa-"Right Stuff", and the overall theme and feel of the

book is the same as much of Tom Wolfe's books- an expose of a (then) little understood sub-culture, written in an engaging fashion. Even Mr. Levy's use of coined words, phrases, and lingo is much like Tom Wolfe. Read more ›

Hackers: Heroes of the Computer Revolution (ISBN 0-385-19195-2) is a book by Steven Levy about hacker culture. It was published in 1984 in Garden City, New York by Nerraw Manijaime/Doubleday. Levy describes the people, the machines, and the events that defined the Hacker Culture and the Hacker Ethic, from the early mainframe hackers at MIT, to the self-made hardware hackers and game hackers. Immediately following is a brief overview of the issues and ideas that are brought forward by Steven Levy's book, as well as a more detailed interpretation of each chapter of the book, mentioning some of the principal characters and events.

The hacker ethic deals with the idea that individuals are performing a duty for the common good, an analogy to a modern day 'Robin Hood'. The hacker communities as a result are prided on the fact that they are the rebellion against authority figures that restrict this level of computer freedom. Hackers are only judged by their ability as opposed to the various systems in places that currently dictate authority, such as schools and universities. Mostly the hacker ethic idealizes the notion of hacking being an art-form, something revered as opposed to disputed and frowned upon. Popularized by 'phreakers' in the 1970s and 1980s, this is something that is not only evident, but also widespread among the growing community. As Manuel Castells, another lecturer involved in the field of computing, it is something that reflects not only on this community, but also of the wider social, political and financial world. In a sense, hacking is something that should affect everyone, but it is whether or not the interpretation that is given to hackers by Steven Levy compared with negative stereotypes of the media that dictate this perception.

Levy decided to write about the subject of hackers because he thought they were fascinating people. He also wanted to present a more accurate view of hackers than the one most people had. Levy found them to be "adventurers, visionaries, risk-takers, [and] artists" rather than "nerdy social outcasts or 'unprofessional' programmers who wrote dirty, 'nonstandard' computer code."

At the beginning, Levy introduces many important hacker figures and machines. Among them are: John Draper (also known as Captain Crunch), infamous phone phreaker; Bill Gates, Harvard dropout and "cocky wizard" who wrote Altair BASIC; Richard Greenblatt, the "hacker's hacker"; Steve Jobs, visionary; Marvin Minsky, "playful and brilliant" MIT professor who headed the MIT AI Lab; Richard Stallman, The Last of the True Hackers; and many, many others. Among the machines mentioned are the Altair 8800, Apple II, Atari 800, IBM PC, PDP-1, TX-0, and many others.

1. The Tech Model Railroad Club (TMRC) is a club at MIT that built sophisticated railroad and trains models. The members were among the first hackers. Key figures of the club were Peter Samson, Alan Kotok, Jack Dennis, and Bob Saunders. The club was composed of two groups, those who were interested in the modeling and landscaping, and those who comprised the Signals and Power Subcommittee and created the circuits that made the trains run. The latter would be among the ones who popularized the term hacker among many other slang terms, and who eventually moved on to computers and computer programming. They were initially drawn to the IBM 704, the multimillion-dollar mainframe that was operated at Building 26, but access and time to the mainframe was restricted to more important people. The group really began being involved with computers when Jack Dennis, a former member, introduced them to the TX-0, a three-million-dollar computer on long-term-loan from Lincoln Laboratory. They would usually stake out the place where the TX-0 was housed until late in the night in hopes that someone who had signed up for computer time did not show up.

2. The Hacker Ethic was a set of concepts, beliefs, and morals that came out of a symbiotic relationship between the hackers and the machines. It was not something that was written up as a manifesto, but a commonly, silently, agreed upon creed that simply came to be. The Ethic basically consisted of allowing all information to be free in order to learn about how the world worked; using

the already available knowledge to create more knowledge. Anything that prevented them from getting to this knowledge was resented. The best system was an open one that could be debugged and improved upon by anyone. For them, bureaucracy was the bane of open systems and the IBM culture at the time was its epitome. The worth of a hacker should only be judged by looking at his hacking, not on other criteria such as education, age, race, or position, and anything a hacker created on a computer could be considered artistic and beautiful just like anything else. The most beautiful computer code was one that was aesthetic, innovative and did not waste memory space. The practice of optimizing program code was known as "bumming." Another belief was that computers can enhance your life, even if you are not a hacker. At the time computers were not well understood and hackers had to convince others, including their professors, of this belief.

3. Spacewar!: Many of the hackers were also fascinated by the telephone companies and their exchange systems and would often go on tours the companies offered to learn as much about them as possible. Alan Kotok, who had acquired some prestige with his skills with the TX-0 and also worked for Western Electric (the manufacturing arm of the Bell System), would read as much as he could about the technical details of the telephone system and then explore or fingerprint the network. In September 1961, DEC donated to MIT's RLE lab the second PDP-1 that it had produced. The machine was a dream to hackers. Six of them, including Kotok, Samson, Saunders, and Wagner, spent a total of two hundred and fifty man-hours one weekend to rewrite the TX-0 compiler for the PDP-1 because they did not like the first choice. They were only paid five hundred dollars for their feat, but the finished product that had come of the Hacker Ethic, was its own reward. Steve "Slug" Russell was another PDP-1 hacker that came up with a 2D game called Spacewar! in which two space ships, controlled by toggle switches on the PDP-1, would fly around the screen and shoot torpedoes at each other. His program was further improved by the other hackers. Samson, for example, changed the random dots that represented the stars to look like the real constellations and he made the screen scroll as the ships moved in space. Dan Edwards, another programmer, added a sun and the effect of gravitational pull. Kotok and Saunders even created the first computer joystick out of TMRC parts to aid with the playing. The game and the compiler were readily and freely available to anyone. Eventually two programs were started to make computers usable by more than one person at a time, a concept that was called time-sharing. One was started by Jack Dennis for the PDP-1, and one was started by Professor Fernando J. Corbat³ for the IBM 7090. MIT would eventually be paid three million dollars a year by ARPA to develop time-sharing through Project MAC headed by Robert Fano with the involvement of Corbat³, Dennis, and Minsky who would focus on Artificial Intelligence. Project MAC was housed on the ninth floor of Tech Square, and it would become a home to many hackers.

4. Greenblatt and Gosper: Ricky Greenblatt was a born hacker, although when asked whether a hacker is born or made, he said, "elf hackers are born, then they're going to get made, and if they're made into it, they were born." He was an intelligent child, and used to play chess and make electrical devices at an early age. When he first got into MIT he was intent on making the Dean's List, but by his sophomore year he flunked out, because he was spending too much time hacking relay circuits at the TMRC and programming for the PDP-1. He even programmed a FORTRAN compiler for the PDP-1. Bill Gosper was a math genius. He took a programming course with John McCarthy, and Minsky's course on artificial intelligence. The hackers enjoyed Chinese food, and they would order anything that seemed interesting to their exploratory minds. Most did not have much of a social life outside of hacking, and some such as Greenblatt were notorious for their lack of personal hygiene. Gosper managed to graduate, but he had to work to pay back the tuition money that the Navy had paid him. Gosper did not like the Navy culture which did not allow programmers near the computers, and he hated the UNIVAC computer that they used since he considered it erroneous in its very design. He managed to work for a private company and later for Project MAC. Greenblatt decided to write a better chess program because he found Kotok's version to be lacking in strategy. The program was good enough to defeat the renowned academic Hubert Dreyfus who had proclaimed that no chess program would be good enough to beat a ten-year-old (and, correctly, that the MIT Artificial Intelligence Programme was doomed to failure due to profound theoretical fallacies). Although the hackers proved the skeptic wrong, their Hacker Ethic concluded that convincing the outside world of the merits of computers was not as interesting as hacking them.

5. The Midnight Computer Wiring Society was created by Stew Nelson, a hacker who was really interested in phone networks and computer programming. He created the MCWS because he wanted to add an instruction to the PDP-1 computer, and the lab administrators had forbidden anyone "not qualified" from messing with the computer hardware. Just like many other hackers, he believed in the Hacker Ethic, and he would use any tools and make any modifications that he believed would improve the system. The hackers would find a way to unlock any door and any safe simply because they did not believe in bureaucracy and closed systems. Nelson also wired the PDP-1 to automatically dial and route telephone calls through the use of a blue box. At the same time, he also believed that hacking should not be done for profit.

6. Winners and Losers were two classifications by hackers whereby they were the former, and the grad students were the latter because they were not capable of hacking feats and could not understand about doing "The Right Thing". Hackers were initially against time-sharing systems because they felt that a system should be used to its fullest, and this could only be done by one person at a time. The time-sharing systems at the time were slow and imposed many restrictions on its users. Greenblatt was convinced by Ed Fredkin that time-sharing systems could be more beneficial, so he set out, along with Nelson, to write a new time-sharing system called ITS, or Incompatible Time-sharing System, initially for the PDP-6, and later the PDP-10. This new system would allow many users to each run many programs at once. ITS allowed all users full access to all the files in the system, and it did not require any passwords. ITS continued to be improved by Greenblatt and the other hackers in an open fashion.

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