



THE MACHINERY OF DIGITAL FORENSICS

Mastering Python Forensics

Master the art of digital forensics and analysis with Python

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Mastering Python Forensics

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Mastering Python Forensics:

Mastering Python Forensics Dr. Michael Spreitzenbarth, Dr. Johann Uhrmann, 2015-10-30 Master the art of digital forensics and analysis with Python About This Book Learn to perform forensic analysis and investigations with the help of Python and gain an advanced understanding of the various Python libraries and frameworks Analyze Python scripts to extract metadata and investigate forensic artifacts The writers Dr Michael Spreitzenbarth and Dr Johann Uhrmann have used their experience to craft this hands on guide to using Python for forensic analysis and investigations Who This Book Is For If you are a network security professional or forensics analyst who wants to gain a deeper understanding of performing forensic analysis with Python then this book is for you Some Python experience would be helpful What You Will Learn Explore the forensic analysis of different platforms such as Windows Android and vSphere Semi automatically reconstruct major parts of the system activity and time line Leverage Python ctypes for protocol decoding Examine artifacts from mobile Skype and browsers Discover how to utilize Python to improve the focus of your analysis Investigate in volatile memory with the help of volatility on the Android and Linux platforms In Detail Digital forensic analysis is the process of examining and extracting data digitally and examining it Python has the combination of power expressiveness and ease of use that makes it an essential complementary tool to the traditional off the shelf digital forensic tools This book will teach you how to perform forensic analysis and investigations by exploring the capabilities of various Python libraries The book starts by explaining the building blocks of the Python programming language especially ctypes in depth along with how to automate typical tasks in file system analysis common correlation tasks to discover anomalies as well as templates for investigations Next we ll show you cryptographic algorithms that can be used during forensic investigations to check for known files or to compare suspicious files with online services such as VirusTotal or Mobile Sandbox Moving on you ll learn how to sniff on the network generate and analyze network flows and perform log correlation with the help of Python scripts and tools You ll get to know about the concepts of virtualization and how virtualization influences IT forensics and you ll discover how to perform forensic analysis of a jailbroken rooted mobile device that is based on iOS or Android Finally the book teaches you how to analyze volatile memory and search for known malware samples based on YARA rules Style and approach This easy to follow guide will demonstrate forensic analysis techniques by showing you how to solve real word scenarios step by step

Mastering Python Networking Eric Chou, 2023-01-20 Get to grips with the latest container examples Python 3 features GitLab DevOps network data analysis and cloud networking to get the most out of Python for network engineering with the latest edition of this bestselling guide Purchase of the print or Kindle book includes a free eBook in PDF format Key Features Leverage Python s powerful libraries and frameworks to build production ready network automation solutions efficiently and effectively Implement network security monitoring and management solutions using modern DevOps tools and cloud native approaches Utilize AsyncIO and cloud capabilities in Python 3 for AWS and Azure network solutions Book Description Networks in your

infrastructure set the foundation for deploying maintaining and servicing applications Python is the ideal language for network engineers to explore tools that were previously available to systems engineers and application developers Mastering Python Networking Fourth edition guides you on a Python driven journey from traditional network engineering to modern network development This new edition incorporates the latest Python features and DevOps frameworks In addition to new chapters on introducing Docker containers and Python 3 Async IO for network engineers each chapter is updated with the latest libraries and working examples to ensure compatibility and clarity of the concepts Starting with a basic overview of Python the book teaches you how it can interact with both legacy and API enabled network devices You will learn to leverage high level Python packages and frameworks to perform network automation tasks monitoring management and enhanced network security followed by AWS and Azure cloud networking You will use Git for code management GitLab for continuous integration and Python based testing tools to verify your network By the end of this book you ll be a confident network developer capable of automating modern infrastructure using Python DevOps practices and cloud technologies What you will learn Use Python to interact with network devices Explore Docker for efficient network application development and deployment Extract network insights using Python and monitoring tools like NetFlow and SNMP Analyze network data with ELK for real time visualization Build high level API with Flask for in house applications Discover the new AsyncIO feature and its concepts in Python 3 Explore test driven development concepts and use PyTest to drive code test coverage Understand how to implement DevOps best practices with GitLab in networking Who this book is for Mastering Python Networking Fourth edition is for network engineers developers and SREs who want to learn Python for network automation programmability monitoring cloud and data analysis Network engineers who want to transition from manual to automation based networks using the latest DevOps tools will also get a lot of useful information from this book Basic familiarity with Python programming and networking related concepts such as Transmission Control Protocol Internet Protocol TCP IP will be helpful in getting the most out of this book

Mastering Python for Networking and Security José

Ortega,2018-09-28 Master Python scripting to build a network and perform security operations Key Features Learn to handle cyber attacks with modern Python scripting Discover various Python libraries for building and securing your network Understand Python packages and libraries to secure your network infrastructure Book DescriptionIt s becoming more and more apparent that security is a critical aspect of IT infrastructure A data breach is a major security incident usually carried out by just hacking a simple network line Increasing your network s security helps step up your defenses against cyber attacks Meanwhile Python is being used for increasingly advanced tasks with the latest update introducing many new packages This book focuses on leveraging these updated packages to build a secure network with the help of Python scripting This book covers topics from building a network to the different procedures you need to follow to secure it You ll first be introduced to different packages and libraries before moving on to different ways to build a network with the help of

Python scripting Later you will learn how to check a network's vulnerability using Python security scripting and understand how to check vulnerabilities in your network As you progress through the chapters you will also learn how to achieve endpoint protection by leveraging Python packages along with writing forensic scripts By the end of this book you will be able to get the most out of the Python language to build secure and robust networks that are resilient to attacks What you will learn Develop Python scripts for automating security and pentesting tasks Discover the Python standard library's main modules used for performing security related tasks Automate analytical tasks and the extraction of information from servers Explore processes for detecting and exploiting vulnerabilities in servers Use network software for Python programming Perform server scripting and port scanning with Python Identify vulnerabilities in web applications with Python Use Python to extract metadata and forensics Who this book is for This book is ideal for network engineers system administrators or any security professional looking at tackling networking and security challenges Programmers with some prior experience in Python will get the most out of this book Some basic understanding of general programming structures and Python is required

Learning Python for Forensics Preston Miller, Chapin Bryce, 2016-05-31 Learn the art of designing developing and deploying innovative forensic solutions through Python About This Book This practical guide will help you solve forensic dilemmas through the development of Python scripts Analyze Python scripts to extract metadata and investigate forensic artifacts Master the skills of parsing complex data structures by taking advantage of Python libraries Who This Book Is For If you are a forensics student hobbyist or professional that is seeking to increase your understanding in forensics through the use of a programming language then this book is for you You are not required to have previous experience in programming to learn and master the content within this book This material created by forensic professionals was written with a unique perspective and understanding of examiners who wish to learn programming What You Will Learn Discover how to perform Python script development Update yourself by learning the best practices in forensic programming Build scripts through an iterative design Explore the rapid development of specialized scripts Understand how to leverage forensic libraries developed by the community Design flexibly to accommodate present and future hurdles Conduct effective and efficient investigations through programmatic pre analysis Discover how to transform raw data into customized reports and visualizations In Detail This book will illustrate how and why you should learn Python to strengthen your analysis skills and efficiency as you creatively solve real world problems through instruction based tutorials The tutorials use an interactive design giving you experience of the development process so you gain a better understanding of what it means to be a forensic developer Each chapter walks you through a forensic artifact and one or more methods to analyze the evidence It also provides reasons why one method may be advantageous over another We cover common digital forensics and incident response scenarios with scripts that can be used to tackle case work in the field Using built in and community sourced libraries you will improve your problem solving skills with the addition of the Python scripting language In addition we provide resources for further

exploration of each script so you can understand what further purposes Python can serve With this knowledge you can rapidly develop and deploy solutions to identify critical information and fine tune your skill set as an examiner Style and approach The book begins by instructing you on the basics of Python followed by chapters that include scripts targeted for forensic casework Each script is described step by step at an introductory level providing gradual growth to demonstrate the available functionalities of Python

Learning Python for Forensics Preston Miller, Chapin Bryce, 2019-01-31 Design develop and deploy innovative forensic solutions using Python Key Features Discover how to develop Python scripts for effective digital forensic analysis Master the skills of parsing complex data structures with Python libraries Solve forensic challenges through the development of practical Python scripts Book Description Digital forensics plays an integral role in solving complex cybercrimes and helping organizations make sense of cybersecurity incidents This second edition of *Learning Python for Forensics* illustrates how Python can be used to support these digital investigations and permits the examiner to automate the parsing of forensic artifacts to spend more time examining actionable data The second edition of *Learning Python for Forensics* will illustrate how to develop Python scripts using an iterative design Further it demonstrates how to leverage the various built in and community sourced forensics scripts and libraries available for Python today This book will help strengthen your analysis skills and efficiency as you creatively solve real world problems through instruction based tutorials By the end of this book you will build a collection of Python scripts capable of investigating an array of forensic artifacts and master the skills of extracting metadata and parsing complex data structures into actionable reports Most importantly you will have developed a foundation upon which to build as you continue to learn Python and enhance your efficacy as an investigator What you will learn Learn how to develop Python scripts to solve complex forensic problems Build scripts using an iterative design Design code to accommodate present and future hurdles Leverage built in and community sourced libraries Understand the best practices in forensic programming Learn how to transform raw data into customized reports and visualizations Create forensic frameworks to automate analysis of multiple forensic artifacts Conduct effective and efficient investigations through programmatic processing Who this book is for If you are a forensics student hobbyist or professional seeking to increase your understanding in forensics through the use of a programming language then *Learning Python for Forensics* is for you You are not required to have previous experience in programming to learn and master the content within this book This material created by forensic professionals was written with a unique perspective and understanding for examiners who wish to learn programming

Python Ethical Hacking from Scratch Fahad Ali Sarwar, 2021-06-25 Explore the world of practical ethical hacking by developing custom network scanning and remote access tools that will help you test the system security of your organization Key Features Get hands on with ethical hacking and learn to think like a real life hacker Build practical ethical hacking tools from scratch with the help of real world examples Leverage Python 3 to develop malware and modify its complexities Book Description Penetration testing enables you to

evaluate the security or strength of a computer system network or web application that an attacker can exploit With this book you ll understand why Python is one of the fastest growing programming languages for penetration testing You ll find out how to harness the power of Python and pentesting to enhance your system security Developers working with Python will be able to put their knowledge and experience to work with this practical guide Complete with step by step explanations of essential concepts and practical examples this book takes a hands on approach to help you build your own pentesting tools for testing the security level of systems and networks You ll learn how to develop your own ethical hacking tools using Python and explore hacking techniques to exploit vulnerabilities in networks and systems Finally you ll be able to get remote access to target systems and networks using the tools you develop and modify as per your own requirements By the end of this ethical hacking book you ll have developed the skills needed for building cybersecurity tools and learned how to secure your systems by thinking like a hacker What you will learn Understand the core concepts of ethical hacking Develop custom hacking tools from scratch to be used for ethical hacking purposes Discover ways to test the cybersecurity of an organization by bypassing protection schemes Develop attack vectors used in real cybersecurity tests Test the system security of an organization or subject by identifying and exploiting its weaknesses Gain and maintain remote access to target systems Find ways to stay undetected on target systems and local networks Who this book is for If you want to learn ethical hacking by developing your own tools instead of just using the prebuilt tools this book is for you A solid understanding of fundamental Python concepts is expected Some complex Python concepts are explained in the book but the goal is to teach ethical hacking not Python

Digital Forensics and Investigations Jason Sachowski, 2018-05-16 Digital forensics has been a discipline of Information Security for decades now Its principles methodologies and techniques have remained consistent despite the evolution of technology and ultimately it and can be applied to any form of digital data However within a corporate environment digital forensic professionals are particularly challenged They must maintain the legal admissibility and forensic viability of digital evidence in support of a broad range of different business functions that include incident response electronic discovery ediscovery and ensuring the controls and accountability of such information across networks Digital Forensics and Investigations People Process and Technologies to Defend the Enterprise provides the methodologies and strategies necessary for these key business functions to seamlessly integrate digital forensic capabilities to guarantee the admissibility and integrity of digital evidence In many books the focus on digital evidence is primarily in the technical software and investigative elements of which there are numerous publications What tends to get overlooked are the people and process elements within the organization Taking a step back the book outlines the importance of integrating and accounting for the people process and technology components of digital forensics In essence to establish a holistic paradigm and best practice procedure and policy approach to defending the enterprise This book serves as a roadmap for professionals to successfully integrate an organization s people process and technology with other key business functions in an enterprise s

digital forensic capabilities **Artificial Intelligence with Python** Prateek Joshi,2017-01-27 Build real world Artificial Intelligence applications with Python to intelligently interact with the world around you About This Book Step into the amazing world of intelligent apps using this comprehensive guide Enter the world of Artificial Intelligence explore it and create your own applications Work through simple yet insightful examples that will get you up and running with Artificial Intelligence in no time Who This Book Is For This book is for Python developers who want to build real world Artificial Intelligence applications This book is friendly to Python beginners but being familiar with Python would be useful to play around with the code It will also be useful for experienced Python programmers who are looking to use Artificial Intelligence techniques in their existing technology stacks What You Will Learn Realize different classification and regression techniques Understand the concept of clustering and how to use it to automatically segment data See how to build an intelligent recommender system Understand logic programming and how to use it Build automatic speech recognition systems Understand the basics of heuristic search and genetic programming Develop games using Artificial Intelligence Learn how reinforcement learning works Discover how to build intelligent applications centered on images text and time series data See how to use deep learning algorithms and build applications based on it In Detail Artificial Intelligence is becoming increasingly relevant in the modern world where everything is driven by technology and data It is used extensively across many fields such as search engines image recognition robotics finance and so on We will explore various real world scenarios in this book and you ll learn about various algorithms that can be used to build Artificial Intelligence applications During the course of this book you will find out how to make informed decisions about what algorithms to use in a given context Starting from the basics of Artificial Intelligence you will learn how to develop various building blocks using different data mining techniques You will see how to implement different algorithms to get the best possible results and will understand how to apply them to real world scenarios If you want to add an intelligence layer to any application that s based on images text stock market or some other form of data this exciting book on Artificial Intelligence will definitely be your guide Style and approach This highly practical book will show you how to implement Artificial Intelligence The book provides multiple examples enabling you to create smart applications to meet the needs of your organization In every chapter we explain an algorithm implement it and then build a smart application Effective Python Penetration Testing Rejah Rehim,2016-06-29 Pen test your system like a pro and overcome vulnerabilities by leveraging Python scripts libraries and tools About This Book Learn to utilize your Python scripting skills to pentest a computer system network and web application Get proficient at the art of assessing vulnerabilities by conducting effective penetration testing This is the ultimate guide that teaches you how to use Python to protect your systems against sophisticated cyber attacks Who This Book Is For This book is ideal for those who are comfortable with Python or a similar language and need no help with basic programming concepts but want to understand the basics of penetration testing and the problems pentesters face What You Will Learn Write Scapy scripts to

investigate network traffic Get to know application fingerprinting techniques with Python Understand the attack scripting techniques Write fuzzing tools with pentesting requirements Learn basic attack scripting methods Utilize cryptographic toolkits in Python Automate pentesting with Python tools and libraries In Detail Penetration testing is a practice of testing a computer system network or web application to find weaknesses in security that an attacker can exploit Effective Python Penetration Testing will help you utilize your Python scripting skills to safeguard your networks from cyberattacks We will begin by providing you with an overview of Python scripting and penetration testing You will learn to analyze network traffic by writing Scapy scripts and will see how to fingerprint web applications with Python libraries such as ProxMon and Spynner Moving on you will find out how to write basic attack scripts and will develop debugging and reverse engineering skills with Python libraries Toward the end of the book you will discover how to utilize cryptography toolkits in Python and how to automate Python tools and libraries Style and approach This is an expert s guide to Python with a practical based approach where each chapter will help you improve your penetration testing skills using Python to become a master pen tester

Python Geospatial Analysis Cookbook Michael Diener,2015-11-30 Over 60 recipes to work with topology overlays indoor routing and web application analysis with Python About This Book Explore the practical process of using geospatial analysis to solve simple to complex problems with reusable recipes Concise step by step instructions to teach you about projections vector raster overlay indoor routing and topology analysis Create a basic indoor routing application with geodjango Who This Book Is For If you are a student teacher programmer geospatial or IT administrator GIS analyst researcher or scientist looking to do spatial analysis then this book is for you Anyone trying to answer simple to complex spatial analysis questions will get a working demonstration of the power of Python with real world data Some of you may be beginners with GIS but most of you will probably have a basic understanding of geospatial analysis and programming What You Will Learn Discover the projection and coordinate system information of your data and learn how to transform that data into different projections Import or export your data into different data formats to prepare it for your application or spatial analysis Use the power of PostGIS with Python to take advantage of the powerful analysis functions Execute spatial analysis functions on vector data including clipping spatial joins measuring distances areas and combining data to new results Create your own set of topology rules to perform and ensure quality assurance rules in Python Find the shortest indoor path with network analysis functions in easy extensible recipes revolving around all kinds of network analysis problems Visualize your data on a map using the visualization tools and methods available to create visually stunning results Build an indoor routing web application with GeoDjango to include your spatial analysis tools built from the previous recipes In Detail Geospatial development links your data to places on the Earth s surface Its analysis is used in almost every industry to answer location type questions Combined with the power of the Python programming language which is becoming the de facto spatial scripting choice for developers and analysts worldwide this technology will help you to solve real world spatial problems This

book begins by tackling the installation of the necessary software dependencies and libraries needed to perform spatial analysis with Python From there the next logical step is to prepare our data for analysis we will do this by building up our tool box to deal with data preparation transformations and projections Now that our data is ready for analysis we will tackle the most common analysis methods for vector and raster data To check or validate our results we will explore how to use topology checks to ensure top quality results This is followed with network routing analysis focused on constructing indoor routes within buildings over different levels Finally we put several recipes together in a GeoDjango web application that demonstrates a working indoor routing spatial analysis application The round trip will provide you all the pieces you need to accomplish your own spatial analysis application to suit your requirements Style and approach Easy to follow step by step recipes explaining from start to finish how to accomplish real world tasks

ISGW 2017: Compendium of Technical Papers Reji Kumar Pillai, Girish Ghatikar, Ravi Seethapathy, Vijay L Sonavane, S A Khaparde, Pradeep Kumar Yemula, Samir Chaudhuri, Anant Venkateswaran, 2018-04-10 This book presents selected articles from INDIA SMART GRID WEEK ISGW 2017 which is the third edition of the Conference cum Exhibition on Smart Grids and Smart Cities organized by India Smart Grid Forum from 07-10 March 2017 at Manekshaw Centre Dhaula Kuan New Delhi India ISGF is a public private partnership initiative of the Ministry of Power Govt of India with the mandate of accelerating smart grid deployments across the country This book gives current scenario updates of Indian power sector business It also highlights various disruptive technologies for power sector business

Python Network Programming Techniques Marcel Neidinger, 2021-10-08 Become well versed with network programmability by solving the most commonly encountered problems using Python 3 and open source packages Key Features Explore different Python packages to automate your infrastructure Leverage AWS APIs and the Python library Boto3 to administer your public cloud network efficiently Get started with infrastructure automation by enhancing your network programming knowledge Book Description Network automation offers a powerful new way of changing your infrastructure network Gone are the days of manually logging on to different devices to type the same configuration commands over and over again With this book you ll find out how you can automate your network infrastructure using Python You ll get started on your network automation journey with a hands on introduction to the network programming basics to complement your infrastructure knowledge You ll learn how to tackle different aspects of network automation using Python programming and a variety of open source libraries In the book you ll learn everything from templating testing and deploying your configuration on a device by device basis to using high level REST APIs to manage your cloud based infrastructure Finally you ll see how to automate network security with Cisco s Firepower APIs By the end of this Python network programming book you ll have not only gained a holistic overview of the different methods to automate the configuration and maintenance of network devices but also learned how to automate simple to complex networking tasks and overcome common network programming challenges What you will learn Programmatically connect to network devices using SSH

secure shell to execute commands
Create complex configuration templates using Python
Manage multi vendor or multi device environments using network controller APIs or unified interfaces
Use model driven programmability to retrieve and change device configurations
Discover how to automate post modification network infrastructure tests
Automate your network security using Python and Firepower APIs
Who this book is for This book is for network engineers who want to make the most of Python to automate their infrastructure A basic understanding of Python programming and common networking principles is necessary

Mastering Python for Networking and Security José Ortega, 2021-01-04
Tackle security and networking issues using Python libraries such as Nmap requests asyncio and scapy
Key Features Enhance your Python programming skills in securing systems and executing networking tasks Explore Python scripts to debug and secure complex networks Learn to avoid common cyber events with modern Python scripting
Book Description It's now more apparent than ever that security is a critical aspect of IT infrastructure and that devastating data breaches can occur from simple network line hacks As shown in this book combining the latest version of Python with an increased focus on network security can help you to level up your defenses against cyber attacks and cyber threats Python is being used for increasingly advanced tasks with the latest update introducing new libraries and packages featured in the Python 3.7.4 recommended version Moreover most scripts are compatible with the latest versions of Python and can also be executed in a virtual environment This book will guide you through using these updated packages to build a secure network with the help of Python scripting You'll cover a range of topics from building a network to the procedures you need to follow to secure it Starting by exploring different packages and libraries you'll learn about various ways to build a network and connect with the Tor network through Python scripting You will also learn how to assess a network's vulnerabilities using Python security scripting Later you'll learn how to achieve endpoint protection by leveraging Python packages along with writing forensic scripts By the end of this Python book you'll be able to use Python to build secure apps using cryptography and steganography techniques What you will learn Create scripts in Python to automate security and pentesting tasks Explore Python programming tools that are used in network security processes Automate tasks such as analyzing and extracting information from servers Understand how to detect server vulnerabilities and analyze security modules Discover ways to connect to and get information from the Tor network Focus on how to extract information with Python forensics tools Who this book is for This Python network security book is for network engineers system administrators or any security professional looking to overcome networking and security challenges You will also find this book useful if you're a programmer with prior experience in Python A basic understanding of general programming structures and the Python programming language is required before getting started

Mastering Defensive Security Cesar Bravo, Darren Kitchen, 2022-01-06
An immersive learning experience enhanced with technical hands on labs to understand the concepts methods tools platforms and systems required to master the art of cybersecurity
Key Features Get hold of the best defensive security strategies and tools Develop a defensive security strategy

at an enterprise levelGet hands on with advanced cybersecurity threat detection including XSS SQL injections brute forcing web applications and moreBook Description Every organization has its own data and digital assets that need to be protected against an ever growing threat landscape that compromises the availability integrity and confidentiality of crucial data Therefore it is important to train professionals in the latest defensive security skills and tools to secure them Mastering Defensive Security provides you with in depth knowledge of the latest cybersecurity threats along with the best tools and techniques needed to keep your infrastructure secure The book begins by establishing a strong foundation of cybersecurity concepts and advances to explore the latest security technologies such as Wireshark Damn Vulnerable Web App DVWA Burp Suite OpenVAS and Nmap hardware threats such as a weaponized Raspberry Pi and hardening techniques for Unix Windows web applications and cloud infrastructures As you make progress through the chapters you ll get to grips with several advanced techniques such as malware analysis security automation computer forensics and vulnerability assessment which will help you to leverage pentesting for security By the end of this book you ll have become familiar with creating your own defensive security tools using IoT devices and developed advanced defensive security skills What you will learnBecome well versed with concepts related to defensive securityDiscover strategies and tools to secure the most vulnerable factor the userGet hands on experience using and configuring the best security toolsUnderstand how to apply hardening techniques in Windows and Unix environmentsLeverage malware analysis and forensics to enhance your security strategySecure Internet of Things IoT implementationsEnhance the security of web applications and cloud deploymentsWho this book is for This book is for all IT professionals who want to take their first steps into the world of defensive security from system admins and programmers to data analysts and data scientists with an interest in security Experienced cybersecurity professionals working on broadening their knowledge and keeping up to date with the latest defensive developments will also find plenty of useful information in this book You ll need a basic understanding of networking IT servers virtualization and cloud platforms before you get started with this book **Python Digital Forensics Cookbook** Preston Miller,Chapin Bryce,2017-09-26

Over 60 recipes to help you learn digital forensics and leverage Python scripts to amplify your examinations About This Book Develop code that extracts vital information from everyday forensic acquisitions Increase the quality and efficiency of your forensic analysis Leverage the latest resources and capabilities available to the forensic community Who This Book Is For If you are a digital forensics examiner cyber security specialist or analyst at heart understand the basics of Python and want to take it to the next level this is the book for you Along the way you will be introduced to a number of libraries suitable for parsing forensic artifacts Readers will be able to use and build upon the scripts we develop to elevate their analysis What You Will Learn Understand how Python can enhance digital forensics and investigations Learn to access the contents of and process forensic evidence containers Explore malware through automated static analysis Extract and review message contents from a variety of email formats Add depth and context to discovered IP addresses and domains through various

Application Program Interfaces APIs Delve into mobile forensics and recover deleted messages from SQLite databases Index large logs into a platform to better query and visualize datasets In Detail Technology plays an increasingly large role in our daily lives and shows no sign of stopping Now more than ever it is paramount that an investigator develops programming expertise to deal with increasingly large datasets By leveraging the Python recipes explored throughout this book we make the complex simple quickly extracting relevant information from large datasets You will explore develop and deploy Python code and libraries to provide meaningful results that can be immediately applied to your investigations Throughout the Python Digital Forensics Cookbook recipes include topics such as working with forensic evidence containers parsing mobile and desktop operating system artifacts extracting embedded metadata from documents and executables and identifying indicators of compromise You will also learn to integrate scripts with Application Program Interfaces APIs such as VirusTotal and PassiveTotal and tools such as Axiom Cellebrite and EnCase By the end of the book you will have a sound understanding of Python and how you can use it to process artifacts in your investigations Style and approach Our succinct recipes take a no frills approach to solving common challenges faced in investigations The code in this book covers a wide range of artifacts and data sources These examples will help improve the accuracy and efficiency of your analysis no matter the situation

Advanced Network Simulations Simplified Dr Anil Kumar Rangiseti, 2023-04-07 Get to grips with the essential concepts and features of ns 3 using practical examples and assessments Purchase of the print or Kindle book includes a free PDF eBook Key Features Explore network simulation for development testing and evaluation activities Understand the key building blocks of simulation and evaluate network topologies Learn how to set up and evaluate wired Wi Fi 802 11a b g n ac ax and 4G LTE networks Book Description Network simulation is a powerful technique that uses software programs to replicate the behaviors of real networks Network simulators are programs that can predict the performance of computer networks or wireless communication networks This book is your hands on guide to ns 3 a script based simulator that allows for learning experimenting and evaluating wired wireless 802 11a b g n ac ax and 4G long term evolution LTE networks quickly and at low cost You ll begin by learning how to install and use ns 3 along with exploring its key features such as building blocks for creating a variety of wired or wireless network topologies installing suitable protocols and applications identifying and resolving networking issues and systematically evaluating network performance As you make progress you ll gain a clear understanding of simulation errors exceptions and abrupt events You ll also discover how to set up and evaluate Ethernet Wi Fi 802 11n ac ax LANs ad hoc and LTE networks The concluding chapters discuss LTE advanced topics such as capacity planning site surveys radio resources mobility management and interference handling By the end of this simulation book you ll be able to use ns 3 to implement analyze debug and evaluate the performance of wired or wireless networks as well as setting up custom test scenarios What you will learn Get to grips with the installation of ns 3 for learning and research Explore ns 3 logging debugging tracing and evaluation on networks Discover various wired wireless and ad hoc

networks Understand the set up using Wi Fi protocols placement and mobility models Find out how to set up advanced Wi Fi technologies such as 802 11n ac ax features Explore LTE basics advanced network features and research activities Who this book is for This book is primarily for network engineers networking researchers and undergraduates Postgraduate students researchers and professors interested in network simulations will also find this book useful A basic understanding of network simulation technology will be helpful in grasping the topics present in this book

Advanced Python for Cybersecurity: Techniques in Malware Analysis, Exploit Development, and Custom Tool Creation Adam Jones, 2025-01-03 Embark on an advanced journey into cybersecurity with Advanced Python for Cybersecurity Techniques in Malware Analysis Exploit Development and Custom Tool Creation This comprehensive guide empowers you to harness the power and elegance of Python to confront modern cyber threats Catering to both beginners drawn to cybersecurity and seasoned professionals looking to deepen their Python expertise this book offers invaluable insights Explore the intricacies of malware analysis exploit development and network traffic analysis through in depth explanations practical examples and hands on exercises Master the automation of laborious security tasks the development of sophisticated custom cybersecurity tools and the execution of detailed web security assessments and vulnerability scanning all utilizing Python Advanced Python for Cybersecurity simplifies complex cybersecurity concepts while equipping you with the skills to analyze understand and defend against ever evolving cyber threats This book is your springboard to enhancing your cybersecurity capabilities making your digital environment more secure with each line of Python code you craft Unlock Python s potential in cyber defense and arm yourself with the knowledge to safeguard against digital threats

Mastering Java Vivian Siahaan, Rismon Hasiholan Sianipar, 2019-10-06 The lessons in this book are a highly organized and well indexed set of tutorials meant for students and programmers Netbeans a specific IDE Integrated Development Environment is used to create GUI Graphical User Interface applications The finished product is the reward but the readers are fully engaged and enriched by the process This kind of learning is often the focus of training In this book you will learn how to build from scratch a SQLite database management system using Java In designing a GUI and as an IDE you will make use of the NetBeans tool Gradually and step by step you will be taught how to use SQLite in Java In chapter one you will learn How to create SQLite database and six tables In chapter two you will study Creating the initial three table projects in the school database Teacher table TClass table and Subject table Creating database configuration files Creating a Java GUI for viewing and navigating the contents of each table Creating a Java GUI for inserting and editing tables and Creating a Java GUI to join and query the three tables In chapter three you will learn Creating the main form to connect all forms Creating a project will add three more tables to the school database the Student table the Parent table and Tuition table Creating a Java GUI to view and navigate the contents of each table Creating a Java GUI for editing inserting and deleting records in each table Creating a Java GUI to join and query the three tables and all six tables In chapter four you will study how to query the six tables In chapter five you will create

Bank database and its four tables In chapter six you will learn the basics of cryptography using Java Here you will learn how to write a Java program to count Hash MAC Message Authentication Code store keys in a KeyStore generate PrivateKey and PublicKey encrypt decrypt data and generate and verify digital prints In chapter seven you will learn how to create and store salt passwords and verify them You will create a Login table In this case you will see how to create a Java GUI using NetBeans to implement it In addition to the Login table in this chapter you will also create a Client table In the case of the Client table you will learn how to generate and save public and private keys into a database You will also learn how to encrypt decrypt data and save the results into a database In chapter eight you will create an Account table This account table has the following ten fields account_id primary key client_id primarykey account_number account_date account_type plain_balance cipher_balance decipher_balance digital_signature and signature_verification In this case you will learn how to implement generating and verifying digital prints and storing the results into a database In chapter nine you will create a Client_Data table which has the following seven fields client_data_id primary key account_id primary_key birth_date address mother_name telephone and photo_path

The Data Sleuth: Mastering OSINT and Investigative Research in the Digital Age Kawsar HS,2025-04-09 The Data Sleuth Mastering OSINT and Investigative Research in the Digital Age is your ultimate guide to navigating the vast world of open source intelligence From uncovering hidden digital footprints to verifying facts in real time this book equips readers with cutting edge tools real world case studies and ethical frameworks to become modern day data detectives Whether you re a journalist cybersecurity analyst researcher or truth seeker The Data Sleuth empowers you to transform scattered information into actionable intelligence in an age driven by data *Mastering MATLAB GU* Vivian Siahaan,Rismon Hasiholan Sianipar,2019-11-14 This book covers how to implement MATLAB GUI from scratch Discrete Signals And Systems IIR Filter Direct Form I IIR Filter Direct Form II IIR Filter Lattice Form Odd Length Symmetric Linear Phase Filter Hamming Window Based FIR Filter And Its Implementation On Audio File and Various Windows Based FIR Filter And Its Implementation On Audio Signal Primarily aimed at a first course in programming for high school and undergraduate students this book teaches the practical concepts of GUI programming The chapter sequence covers programs that produce graphics building up to an emphasis on GUI tools for signal processing Topics include programming basics creating GUI with GUIDE and graphics and GUI techniques

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