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| |  |  |  | | --- | --- | --- | | **April-May 2023** | | | | **Book** | **Projects** | **Sites** | | *The Pragmatic Programmer" by Andrew Hunt and David Thomas (10 days)*  *(* [*https://tinyurl.com/ragmatic*](https://tinyurl.com/ragmatic) *)* | *Build a command-line application that uses the SOLID principles and design patterns* | *Pragmatic Bookshelf website (* [*https://pragprog.com/*](https://pragprog.com/) *): This website has a variety of resources related to software development, including books, articles, and screencasts.* | | *Clean Code" by Robert C. Martin (10 days)*  [*https://tinyurl.com/cleanncode*](https://tinyurl.com/cleanncode) | *Refactor an existing codebase to adhere to clean code principles and use TDD to ensure code quality* | *Clean Code Developer website (* [*https://clean-code-developer.com/*](https://clean-code-developer.com/) *): This website provides resources for developers who want to improve their coding skills, including articles, videos, and training courses.* | | *Code Complete" by Steve McConnell (15 days)*  [*https://tinyurl.com/codecomlete*](https://tinyurl.com/codecomlete) | *Build a web application using a backend framework (Django, Ruby on Rails, etc.) and write unit and integration tests* | *Stack Overflow website (* [*https://stackoverflow.com/*](https://stackoverflow.com/) *): This website is a community-driven question and answer forum for programmers. It's a great resource for getting help with specific programming problems.* | | *Designing Data-Intensive Applications" by Martin Kleppmann (20 days)*  [*https://tinyurl.com/dataiintensive*](https://tinyurl.com/dataiintensive) | *Design and implement a database schema for a real-world application (e.g. e-commerce, social media, etc.) and write SQL queries to retrieve and manipulate data* | *Data Engineering website (* [*https://www.dataengineering.academy/*](https://www.dataengineering.academy/) *): This website provides courses and resources related to data engineering, including data modeling, databases, and big data technologies.* | | *Learning SQL" by Alan Beaulieu (10 days)*  [*https://tinyurl.com/learningsql*](https://tinyurl.com/learningsql) | *Build a web application that uses a relational database to store and retrieve data, and use ORMs to interact with the database* | *SQL Zoo website (* [*https://sqlzoo.net/*](https://sqlzoo.net/) *): This website provides interactive SQL exercises that you can use to practice your SQL skills.* | | *Introduction to Algorithms" by Thomas H. Cormen (30 days)*  [*https://tinyurl.com/intotoalgo*](https://tinyurl.com/intotoalgo) | *Implement common algorithms and data structures in a programming language of your choice, and use them to solve real-world problems (e.g. sorting, searching, graph traversal, etc.)* | *LeetCode website (* [*https://leetcode.com/*](https://leetcode.com/) *): This website provides coding challenges and problems that you can use to practice your algorithm and data structure skills.* | | **CERTIFICATES : Oracle Certified Associate, Java SE 8 Programmer (OCAJP) (study for and take exam)** | | |  |  |  |  | | --- | --- | --- | | **June-July 2023** | | | | **Book** | **Projects** | **Sites** | | *Docker Deep Dive" by Nigel Poulton (20 days)*  [*https://tinyurl.com/dockernigel*](https://tinyurl.com/dockernigel) | *Build a microservices architecture using Docker and orchestrate them with Kubernetes or Docker Compose* | *Docker documentation (* [*https://docs.docker.com/*](https://docs.docker.com/) *): This website provides documentation and resources for using Docker containers.* | | *Continuous Delivery" by Jez Humble and David Farley (20 days)*  [*https://tinyurl.com/contdeliv*](https://tinyurl.com/contdeliv) | *Set up a CI/CD pipeline for a web application using Git, Jenkins, and AWS CodeDeploy or similar tools* | *Jenkins documentation (* [*https://www.jenkins.io/doc/*](https://www.jenkins.io/doc/) *): This website provides documentation and resources for using Jenkins, a popular continuous integration and delivery tool.* | | *Site Reliability Engineering" by Betsy Beyer, Chris Jones, Jennifer Petoff, and Niall Richard Murphy (20 days)*  [*https://tinyurl.com/siterelia*](https://tinyurl.com/siterelia) | *Implement a monitoring and alerting system for a web application using Prometheus and Grafana, and use logs to troubleshoot and debug issues* | *Prometheus documentation (* [*https://prometheus.io/docs/introduction/overview/*](https://prometheus.io/docs/introduction/overview/) *): This website provides documentation and resources for using Prometheus, a popular monitoring and alerting tool.* | | *Effective DevOps" by Jennifer Davis and Katherine Daniels (20 days)*  <https://tinyurl.com/effectdev> | *Build an infrastructure as code (IAC) solution for a web application using Terraform or CloudFormation, and test it with chaos engineering* | *AWS documentation (* [*https://aws.amazon.com/documentation/*](https://aws.amazon.com/documentation/) *): This website provides documentation and resources for using AWS services, including Elastic Beanstalk, RDS, and S3.* | | **CERTIFICATES : Certified Kubernetes Administrator (study for and take exam)** | | |  |  |  |  | | --- | --- | --- | | **August-September 2023** | | | | **Book** | **Projects** | **Sites** | | *Android Programming: The Big Nerd Ranch Guide" by Bill Phillips, Chris Stewart, and Kristin Marsicano (20 days)*  [*https://tinyurl.com/androro*](https://tinyurl.com/androro) | 1. *Build a native Android app that communicates with a backend API using Retrofit or similar libraries, and implement push notifications and in-app purchases.* 2. *Build a weather app that fetches data from a weather API, displays the data on the app and sends push notifications when certain weather conditions are met* | 1. *Android documentation (* [*https://developer.android.com/docs*](https://developer.android.com/docs) *): This website provides documentation and resources for developing Android apps.* 2. *Android Developers:* [*https://developer.android.com/*](https://developer.android.com/) 3. *Udacity Android Development Course:* [*https://www.udacity.com/course/android-basics-nanodegree-by-google--nd803*](https://www.udacity.com/course/android-basics-nanodegree-by-google--nd803) | | *iOS Programming: The Big Nerd Ranch Guide" by Christian Keur and Aaron Hillegass (20 days)*  [*https://tinyurl.com/ihonesli*](https://tinyurl.com/ihonesli) | 1. *Build a native iOS app that communicates with a backend API using Alamofire or similar libraries, and implement user authentication and data synchronization* 2. *Build a notes app that allows users to create, edit, and delete notes, and syncs the notes across multiple devices using iCloud* | *iOS documentation (* [*https://developer.apple.com/documentation/*](https://developer.apple.com/documentation/) *): This website provides documentation and resources for developing iOS apps.* | | *AWS Certified Solutions Architect - Associate" by Joe Baron, Hisham Baz, Tim Bixler, Biff Gaut, Kevin E. Kelly, and Sean Senior (30 days)*  [*https://tinyurl.com/awscertif*](https://tinyurl.com/awscertif) | 1. *Deploy a web application on AWS using EC2, RDS, S3, and other services, and optimize it for scalability, security, and cost-effectiveness* 2. *Build a high-availability web application on AWS using Elastic Beanstalk, RDS, and S3. Implement auto-scaling and load balancing to handle increased traffic.* | *AWS Certification website (* [*https://aws.amazon.com/certification/*](https://aws.amazon.com/certification/) *): This website provides resources and information on AWS certification exams* | | *Web Application Security" by Andrew Hoffman (20 days)*  [*https://tinyurl.com/webasec*](https://tinyurl.com/webasec) | 1. *Conduct a penetration testing of a web application and identify vulnerabilities using tools such as OWASP ZAP or Burp Suite, and remediate them using secure coding practices* 2. *Conduct a penetration testing of a web application, identify vulnerabilities, and implement fixes for any security issues found. Deploy the application on a secure server using SSL/TLS.* | *OWASP website (* [*https://owasp.org/*](https://owasp.org/) *): This website provides resources and information on web application security, including vulnerabilities and best practices for securing web applications.* | | **CERTIFICATES : Certified Information Systems Security Professional (CISSP) (study for and take exam)** | | |  |  |  |  | | --- | --- | --- | | **October-November 2023** | | | | **Book** | **Projects** | **Sites** | | *Data Science from Scratch: First Principles with Python" by Joel Grus (30 days)*  [*https://tinyurl.com/datscra*](https://tinyurl.com/datscra) | *Use Python to implement basic data science algorithms, such as clustering and classification, on a sample dataset.* |  | | *Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython" by Wes McKinney (20 days)*  [*https://tinyurl.com/wesmckin*](https://tinyurl.com/wesmckin) | 1. *Analyze and visualize a dataset using Pandas, Matplotlib, and Seaborn* 2. *Use Pandas to manipulate and clean data from a real-world dataset. Create visualizations to understand the data.* |  | | *Machine Learning Yearning" by Andrew Ng (30 days)*  [*https://tinyurl.com/maclearni*](https://tinyurl.com/maclearni) | *Build and evaluate a simple machine learning model using Scikit-learn or TensorFlow* |  | | *Data Science from Scratch" by Joel Grus (30 days)*  [*https://tinyurl.com/datscra*](https://tinyurl.com/datscra) | *Build a recommendation engine using collaborative filtering and Python* |  | | *Machine Learning: A Probabilistic Perspective" by Kevin P. Murphy (30 days)*  [*https://tinyurl.com/machlearrob*](https://tinyurl.com/machlearrob) | *Implement machine learning algorithms, such as decision trees and neural networks, on a dataset of your choice. Evaluate the performance of the models and tune hyperparameters.* |  | | *"Practical Cryptography for Developers" by Svetlin Nakov (20 days)*  [*https://tinyurl.com/raccryto*](https://tinyurl.com/raccryto) | *Implement encryption and decryption algorithms using Python. Use these algorithms to secure communications between a client and a server.* |  | | **CERTIFICATES : 1) AWS Certified Data Analytics – Specialty (study for and take exam)**  **2) Google Certified Professional Data Engineer (study for and take exam)** | | |  |  |  |  | | --- | --- | --- | | **December 2023-January 2024** | | | | **Book** | **Projects** | **Sites** | | *Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow" by Aurélien Géron (40 days)*  [*https://tinyurl.com/handsonmac*](https://tinyurl.com/handsonmac) | *Build a machine learning pipeline that preprocesses data, trains a model using Scikit-Learn, and deploys the model using TensorFlow. Use the pipeline on a real-world dataset.* |  | | *Deep Learning with Python" by François Chollet (30 days)*  [*https://tinyurl.com/deeleyt*](https://tinyurl.com/deeleyt) | *Use Keras to build and train deep neural networks on a dataset of your choice. Experiment with different architectures and hyperparameters to improve the model's performance.* |  | | *Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking" by Foster Provost and Tom Fawcett (20 days)*  [*https://tinyurl.com/dasciebus*](https://tinyurl.com/dasciebus) | *Apply data mining techniques, such as association rules and clustering, to a business problem. Present your findings and recommendations to stakeholders.* |  | | *"Black Hat Python: Python Programming for Hackers and Pentesters" by Justin Seitz (20 days)*  [*https://tinyurl.com/jussiez*](https://tinyurl.com/jussiez) | 1. *Use Python to write scripts that automate common hacking and penetration testing tasks. Use these scripts to test the security of a network or application.* 2. *Develop a simple network scanner and exploit tool using Python* |  | | *The Tangled Web" by Michal Zalewski (30 days)*  [*https://tinyurl.com/zalewskiss*](https://tinyurl.com/zalewskiss) | *Conduct a comprehensive security review of a web application and provide recommendations for improvement* |  | | **CERTIFICATES : 1) Offensive Security Certified Professional (OSCP) (study for and take exam)**  **2) AWS Certified Machine Learning – Specialty (study for and take exam)** | | |  |  |  |  | | --- | --- | --- | | **February-March 2024** | | | | **Book** | **Projects** | **Sites** | | *Clean Architecture: A Craftsman's Guide to Software Structure and Design" by Robert C. Martin (20 days)*  [*https://tinyurl.com/clarchi*](https://tinyurl.com/clarchi) | *Refactor an existing codebase to adhere to clean architecture principles* |  | | *Applied Cryptography" by Bruce Schneier (30 days)*  [*https://tinyurl.com/alicryto*](https://tinyurl.com/alicryto) | *Develop and implement a secure encryption and decryption system using Python* |  | | *Hacking: The Art of Exploitation" by Jon Erickson (30 days)*  [*https://tinyurl.com/artofexl*](https://tinyurl.com/artofexl) | *Write a simple exploit for a vulnerable program and demonstrate it in a lab environment* |  | | **CERTIFICATES : Certified Information Systems Security Professional (CISSP) (study for and take exam)** | | |  |  |  |  | | --- | --- | --- | | **April-May 2024** | | | | **Book** | **Projects** | **Sites** | | *Practical Malware Analysis" by Michael Sikorski and Andrew Honig (30 days)*  [*https://tinyurl.com/malanaly*](https://tinyurl.com/malanaly) | *Analyze and reverse-engineer a piece of malware in a controlled environment* |  | | *Black Hat Go" by Tom Steele, Chris Patten, and Dan Kottmann (30 days)*  [*https://tinyurl.com/blachatg*](https://tinyurl.com/blachatg) | *Develop a simple web server and a remote code execution exploit in Go* |  | | **CERTIFICATES : Offensive Security Certified Expert (OSCE) (study for and take exam)** | | |  |  |  |  | | --- | --- | --- | | **June-July 2024** | | | | **Book** | **Projects** | **Sites** | | *Red Team Field Manual" by Ben Clark (30 days)*  [*https://tinyurl.com/rtfmben*](https://tinyurl.com/rtfmben) | *Develop a comprehensive penetration testing plan for a company and execute it in a simulated environment* |  | | *Penetration Testing: A Hands-On Introduction to Hacking" by Georgia Weidman (30 days)*  [*https://tinyurl.com/geogiawei*](https://tinyurl.com/geogiawei) | *Conduct a full-scale penetration test of a web application and produce a detailed report of findings and recommendations* |  | | **CERTIFICATES : Certified Ethical Hacker (CEH) (study for and take exam)** | | | |