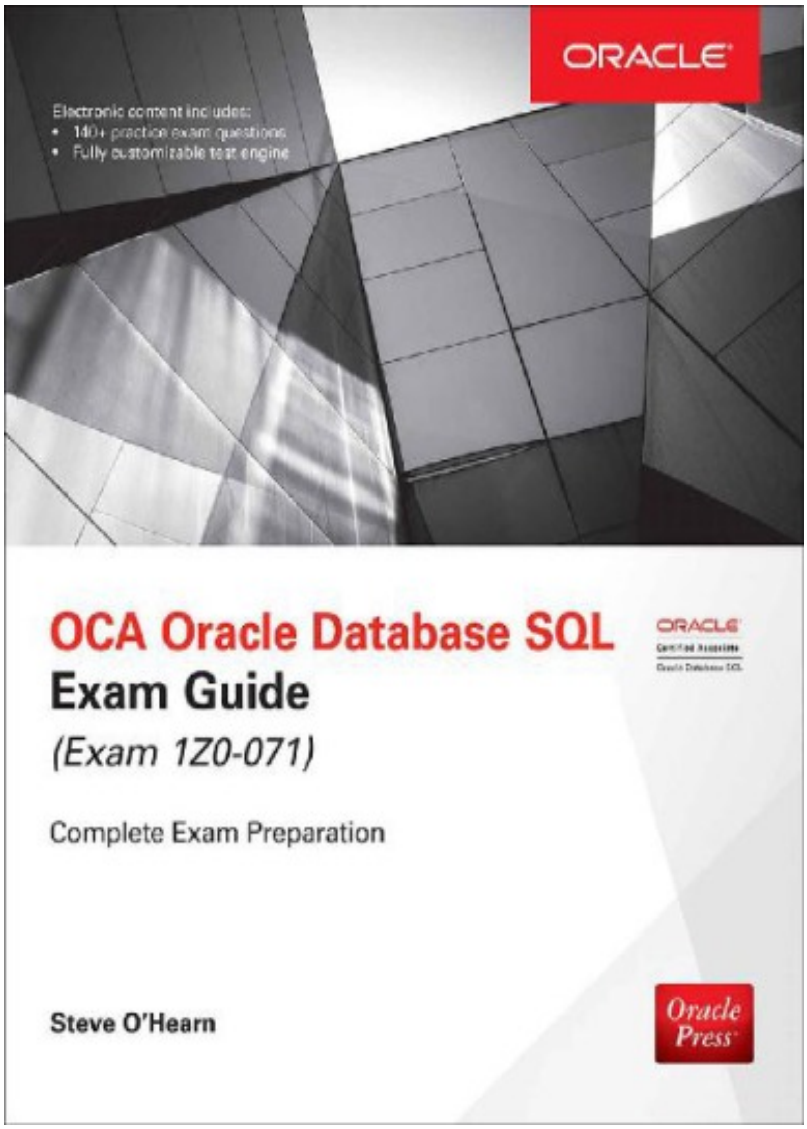
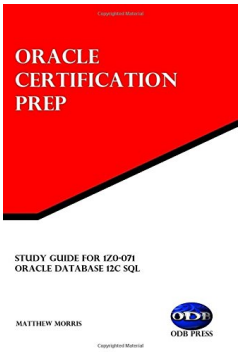
OCA Oracle Database SQL Exam Guide (Exam 1Z0-071) 1st Edition Steve O’Hearn pdf download

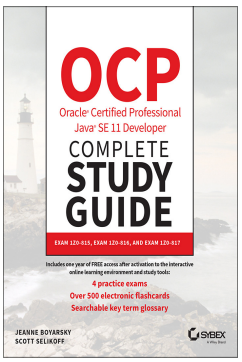
https://textbookfull.com/product/oca-oracle-database-sql-exam-guide-exam-1z0-071-1st-edition-steve-ohearn/





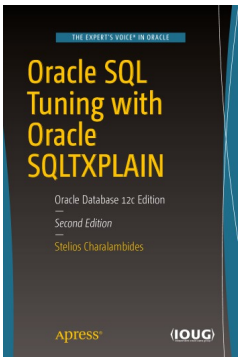
Study Guide for 1Z0 071 Oracle Database 12c SQL Oracle Certification Prep 1st Edition Matthew Morris

https://textbookfull.com/product/study-guide-for-1z0-071-oracle-database-12c-sql-oracle-certification-prep-1st-edition-matthew-morris/



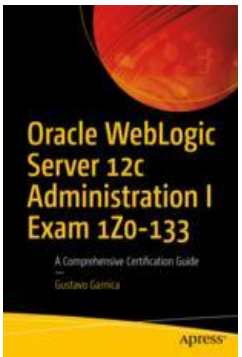
OCP Oracle Certified Professional Java SE 11 Developer Complete Study Guide Exam 1Z0 815 Exam 1Z0 816 and Exam 1Z0 817 1st Edition Jeanne Boyarsky

https://textbookfull.com/product/ocp-oracle-certified-professional-java-se-11-developer-complete-study-guide-exam-1z0-815-exam-1z0-816-and-exam-1z0-817-1st-edition-jeanne-boyarsky/



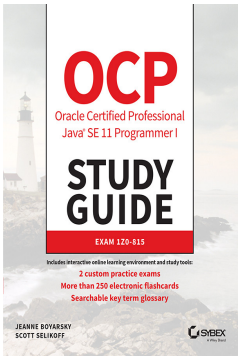
Oracle SQL tuning with Oracle SQLTXPLAIN: Oracle database 12c edition Charalambides

https://textbookfull.com/product/oracle-sql-tuning-with-oracle-sqltxplain-oracle-database-12c-edition-charalambides/



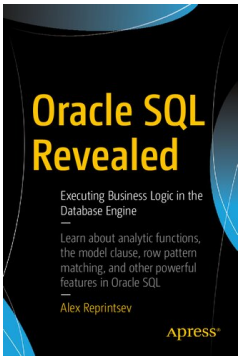
Oracle WebLogic Server 12c Administration I Exam 1Z0-133: A Comprehensive Certification Guide 1st Edition Gustavo Garnica

https://textbookfull.com/product/oracle-weblogic-server-12c-administration-i-exam-1z0-133-a-comprehensive-certification-guide-1st-edition-gustavo-garnica/



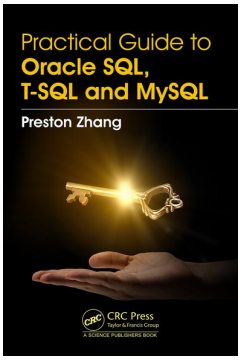
OCP Oracle Certified Professional Java SE 11 Programmer I Study Guide Exam 1Z0 815 Jeanne Boyarsky

https://textbookfull.com/product/ocp-oracle-certified-professional-java-se-11-programmer-i-study-guide-exam-1z0-815-jeanne-boyarsky/



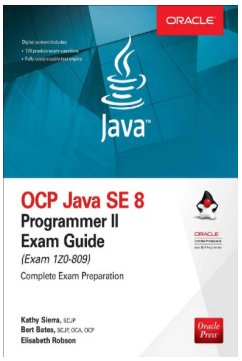
Oracle SQL Revealed: Executing Business Logic in the Database Engine 1st Edition Alex Reprintsev

https://textbookfull.com/product/oracle-sql-revealed-executing-business-logic-in-the-database-engine-1st-edition-alex-reprintsev/



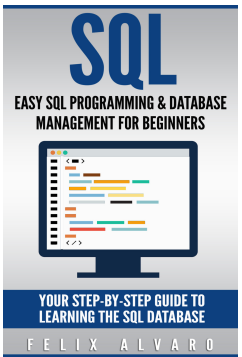
Practical guide to Oracle SQL, T-SQL and MySQL 1st Edition Preston Zhang

https://textbookfull.com/product/practical-guide-to-oracle-sql-t-sql-and-mysql-1st-edition-preston-zhang/



OCP Java SE 8 Programmer II Exam Guide (Exam 1Z0-809) Kathy Sierra

https://textbookfull.com/product/ocp-java-se-8-programmer-ii-exam-guide-exam-1z0-809-kathy-sierra/



SQL Easy SQL Programming Database Management for Beginners Your Step By Step Guide to Learning the SQL Database Felix Alvaro

https://textbookfull.com/product/sql-easy-sql-programming-database-management-for-beginners-your-step-by-step-guide-to-learning-the-sql-database-felix-alvaro/

OCA Oracle Database SQL Exam Guide

(Exam 1Z0-071)

ORACLE Certified Associate Oracle Database SQL

Complete Exam Preparation

Steve O'Hearn

Oracle Press

ORACLE®

Oracle Press™

OCA Oracle Database SQL Exam Guide

(Exam 1Z0-071)

Steve O'Hearn

Mc Graw Hill Education

New York Chicago San Francisco
Athens London Madrid Mexico City
Milan New Delhi Singapore Sydney Toronto

ISBN: 978-1-25-958461-9
MHID: 1-25-958461-5.

The material in this eBook also appears in the print version of this title: ISBN: 978-1-25-958549-4, MHID: 1-25-958549-2.

eBook conversion by codeMantra
Version 1.0

licensors shall be liable to you or anyone else for any inaccuracy, error or omission, regardless of cause, in the work or for any damages resulting therefrom. McGraw-Hill Education has no responsibility for the content of any information accessed through the work. Under no circumstances shall McGraw-Hill Education and/or its licensors be liable for any indirect, incidental, special, punitive, consequential or similar damages that result from the use of or inability to use the work, even if any of them has been advised of the possibility of such damages. This limitation of liability shall apply to any claim or cause whatsoever whether such claim or cause arises in contract, tort or otherwise.

To Jim Bauchspies, who gave me my first Oracle job and who has always been like a second father to me.

ABOUT THE AUTHOR

Steve O'Hearn is a technology consultant with expertise in the design, development, and administration of various data and data-driven systems for such clients as the U.S. Defense Department, NASA HQ, the FAA, the World Bank, and many others. He first became an Oracle Certified Professional (OCP) in 2001 and is a certified Oracle Database SQL Expert. He has a degree in business administration with a specialization in information processing from George Washington University, and his postgraduate work includes advanced statistics and the completion of the Future of e-Government Executive Education training at Harvard University's Kennedy School of Government in 2003. He is a member of Mensa.

Mr. O'Hearn authored *OCE Oracle Database SQL Certified Expert Exam Guide (Exam 1Z0-047),* the official certification exam guide for Oracle's first expert-level certification exam, and the critically acclaimed *OCP Developer: PL/SQL Program Units Exam Guide,* both from Oracle Press. He contributed to *Oracle Web Applications 101* from Oracle Press and *Oracle8 Server Unleashed*. He has been featured on Oracle TV and Oracle Open World/JavaOne. He has been published in a variety of publications, including the *Harvard Business Review* and the *Record* of the National Press Club, where he is an officially recognized subject-matter expert on the topics of database and information technology. He has been vice president and conference coordinator for the Mid-Atlantic Association of Oracle Professionals. He leads the official Java User Group (JUG) for the Baltimore Washington Metropolitan Area, possesses certifications in Java and other technologies, and loves working with his own Raspberry Pi and 3D printing devices.

Mr. O'Hearn provides Oracle and Java technology training and tutoring online. He blogs at Skere9.com. He invites any and all

inquiries at soh@corbinian.com.

About the Contributor

Bob Bryla is an Oracle 9*i*, 10*g*, 11*g*, and 12*c* Certified Professional with more than 20 years of experience in database design, database application development, training, and Oracle database administration. He is the primary Oracle DBA and database scientist at Epic in Verona, Wisconsin. He is a technical editor for a number of Oracle Press books, including several certification study guides for Oracle Database 10*g*, 11*g*, and 12*c*. You can also find him on Lynda.com teaching Oracle Database fundamentals in bite-sized videos. He has also been known to watch science-fiction movies, tinker with Android devices, and refinish antique furniture in his spare time.

About the Technical Editor

Todd Meister has been working in the IT industry for more than 20 years. He's been a technical editor on more than 75 books ranging in topic from SQL Server to the .NET Framework. Besides technical editing, he is the assistant vice president/chief enterprise architect at Ball State University in Muncie, Indiana. He lives in central Indiana with his wife, Kimberly, and their five bright children.

CONTENTS AT A GLANCE

Index

CONTENTS

ACKNOWLEDGMENTS

First, I want to acknowledge you, the reader. Were it not for you, this book would never have been created. Because of you, because of your interest, because of your professionalism, and because of your demonstrable commitment to improving yourself and therefore the industry, this book was created. Were it not for you, there would not be an elite team of experts here at Oracle Press responding to your interest and your demand for quality material. So, thank you. Without you, we would not be doing what we do, nor would this book exist.

Speaking of this book that you are holding in your hands (or perhaps reading on your screen), it is a tremendous work and a valuable contribution to the industry. It represents a great deal of effort by a number of talented, persistent, and dedicated professionals.

This book originally started as a second edition to my 2009 SQL Expert book on the 1Z0-047 exam and was nearing completion when it evolved into this book, the first certification exam guide for the 1Z0-071 exam.

First, a special and huge thank-you to Hilary Flood. This book would not have happened without her. It was her bold, open mind and creative force that helped originally steer this ship through murky waters to its eventual goal. For her persistence, patience, expertise, and insight, I thank her.

Claire Yee was the editorial coordinator. She was consistently cheerful and encouraging and worked tirelessly to ensure each chapter or other section worked its way through the many editorial cycles, from original material through technical edit, copyediting, and beyond to final production.

Dipika Rungta was the project manager. As the various chapters and other sections exited the process headed by Claire, each moved to Dipika for additional review, work, and the many demanding details necessary to prepare the book for production. Dipika has been a joy to work with and is a tremendous asset to any book production effort.

Jody McKenzie was the editorial supervisor and stepped in to resolve some challenging issues at key times. Lisa McCoy was the proofreader and caught some of the most obscure typos imaginable. The copy editor was Kim Wimpsett and helped make sure some of my curious expressions or word choices were translated into understandable narratives. The production supervisor was Jim Kussow, who has managed the production and printing processes of this ponderous tome.

Thank you to Vasundhara Sawhney who contributed a lot of work in the earliest stages of this journey.

The acquisitions editor was Lisa McClain. Acquisitions editors lead the charge to put book projects together in the first place and stay involved to ensure those projects march forward to their destination. They make tough calls in the face of uncertainty and have to discern a path forward with sometimes limited information. Oracle Press has talented acquisitions editors, and Lisa McClain is one of the best in the business. She heralded this effort in the latter stages, and it has been a privilege to have served with her on this project.

Now let’s talk about indexing. Indexing a book is a crucial job. This is true whether the book is in printed or digital form. I judge technical books by a few key indicators, including the quality and relevance of the index. I generally already have an idea of what I’m looking for in a technical book, so when I pick up a paper technical book for the first time, I flip to the index and check for particular subject areas of interest to determine whether the index correctly references them in the narrative. If yes, I buy the book. If not, I don’t. That’s often my only criteria when evaluating new books. That’s how important the index of a technical book is to me.

If you're reading this digitally, you might be thinking, "So what? I can always do a word search. Why do I need an index?" There are many topics in books like this where the keyword isn't easily searchable. For example, consider the word *set*. It is used quite a bit in normal conversation and is likely in the narrative for various reasons. But *set* is also a key concept in this book with regard to SET operations such as UNION and INTERSECT. And that topic is completely different from the keyword SET in an UPDATE statement. All are in this book. So if you are searching for just one particular use of *set* in this book, then an electronic search on a keyword may slog you through all sorts of unrelated material. But a well-crafted index will get you where you need to go quickly, even in a digital version of the book.

For that reason, I am very grateful for the work of Jack Lewis, the indexer for this book. It's a great deal of work and often overlooked but never by me—neither as a consumer nor as an author. Thank you, Jack. I appreciate your work much more than you may realize.

A huge and special thank-you to my technical editor, Todd Meister. Todd has worked tirelessly to review and analyze hundreds of pages of code, and he has reverse-engineered a myriad of examples, illustrations, questions, and answers. He traveled down this long road with the rest of the team with style, grace, and amazing persistence. One particular challenge with this kind of technical book is that it doesn't lend itself to a consistently built application (for examples and illustrations) like some other books do. The nature of a certification exam guide is that it must cover a variety of syntax combinations, so rather than building an application as a project, this book requires you to understand all forms of certain syntax combinations. That is a challenge to the certification candidate; imagine the challenge to a technical editor. It is enormous. Yet Todd has done it brilliantly and with aplomb and professionalism. I will always have visions of his familiar "Todd Meister verified" annotations throughout the draft copies of the book as the various sections passed back and forth along the cycle of production. But note that the book has gone through a few iterations,

so if you still bizarrely manage to find something in it that is less than ideal—and that's the case with virtually every publication—then that'll be on me. But know that thanks to Todd, the book is light-years ahead of where it otherwise would have been.

Also a big thank-you to Bob Bryla, an outstanding Oracle Press author in his own right many times over, who jumped in at the last minute to contribute a good number of questions and answers to the sample certification exam included with the book. Thank you, Bob!

To my very many friends and colleagues with whom I've had the pleasure of working and/or serving over the years at various locations and in various capacities, at such enterprises as Atrexa, LHR Digital Consulting, Corbinian, Sysorex, ISC, db-Training, MAOP, EOUG, Boeing, ORI, ARC, NPC, and elsewhere, including some who are still at those places and some who have gone on to other adventures—there is no way I could name everyone here who has been instrumental or contributed something important to my life and work. A partial list includes the following: Mark O'Donnell, Matt Hutchinson, Dave and Jackie Dougherty, John Cook, Tim Green, Jeremy Judson, Salam Qureishi, Nadir Ali, Wendy Loundermon, Athar Javaid, Dan Doherty, Tony Covert, Bianca Canales, Marlene Theriault, Kevin Loney, Michelle Veghte, Ardell Fleeson, Markus Dale, Karl Davis, Allen Shoulders, Ed Wolfe, Ashley Rubeck, Cindy Shiflett, Phil Hasse, Dave Gagner, Jon Feld, Jay Nielsen, Steve Smith, Edgar Kline, Dave Salmen, Oscar Wood, James Perry, Terri Buckler, Sarah Henrikson, Mark Tash, Steve Vandivier, Adhil Shaikh, Monique Tribolet, Ed Spinella, Dino Merkezas, Kathy Gardos, Bert Spencer, Karen Owens, Mike Ault, Graham Seibert, Vince Adams, Bob Schnetter, Josh Parreco, Craig Kasold, Jennifer Blair, Brett Simpson, Mike Gerrity, Dave Cooper, Ted Cohen, Steve Cummings, Jimmy Smith, Peter Dube, Ruthie Washburn, Kim Curl, Toni Boyd, Robin Ruth, Renee Battle, Danny Duong, Hung Nguyen, Drew Daffron, Ken O'Neal, Kim Miller, John Lauder, Bob Smout, Todd Stottlemeyer, Paul Leslie, David Wise, Dan Rutherford, Laura Taylor, Laura Setliff, Trin Tranh, Wilson Dizard, Paul Elliott, John Metelsky, Don Knight, Art Garrison, Marshall Cohen, Mark Wojno, Bill

McCarren, Jonathan Salant, Carole Feldman, Tammy Lytle, Sheila Cherry, Rick Dunham, Doug Harbrecht, Audrey Ford, Tim Aquilino, Debbie Beebe, Bill Simpson, Annette Taylor, Fred Wills, Carlesza Harris, Gardner McBride, Cindy McBride, Jim Flyzik, Rob Guerra, John Coffey, Lyle Beall, Bobbie Beall, and to Roy Patterson, who – with Jim Bauchspies - assigned me to my first Oracle project. And to Todd and Cindy Bauchspies, Mike and Kate Waters and Gavin, James and Claudia Waters, Phil and Charlotte Jones, Harriet Marin and Joe Motz, and Danna Henderson.

To those who are no longer with us: Aaron “Eppie” Epstein, Martin Kuhn, John Cosgrove, Mike Shanahan, Gordon Gustin, Helen Kamajian, Georgine Bauchspies, Eileen Waters, and Jack Henderson.

To Dan and Brenda Hinkle, who gave me outstanding opportunities and from whom I learned a great deal about Oracle and entrepreneurship.

To my very many outstanding Oracle students over the years, too numerous to mention here. I remember one class that gave me a going-away present of a small antique water pump, symbolic for how learning is as important to one’s life as is water necessary for survival. That symbolic gesture was moving beyond words, and I have never forgotten it.

To my longtime professional associate and close friend Bill Bryant, who has mentored and coached me on many aspects of technology, business, the world, and life.

To my father, Don, a brilliant engineer, excellent project manager, published author, great professional, and great dad and to whom I dedicated my second book.

To my mother, Joan, the best mother in the world, who I love with all my heart and to whom I dedicated my first book.

A very special thank-you to Lisa, the love of my life, for being wonderful, sweet, patient, brilliant, so loving, and so very encouraging!

And finally, to Jim Bauchspies, who is like a second father to me in many ways, and to his late wife, Georgine, whose infectious laugh

and warmth and love are treasured memories I will never forget. Jim gave me my first Oracle opportunity, as well as a great deal of advice on all things personal and professional over the many years I've been privileged to know him. It is to him I dedicate this, my third book.

PREFACE

Recently I attended a technical conference hosted by a leading big data vendor. I found myself speaking with an exhibitor about his startup company's NoSQL product. Now folks, I love all forms of data systems; they all have their place. Key-value pairs, dynamic schemas—they all have a use. But this particular vendor boldly declared that the relational database was useless and "SQL is dead." He described how his system could harvest text-based comments and infer sentiment across millions of records and support all sorts of clever use cases—all of which, incidentally, is doable with Oracle-driven SQL-based systems. But he was convinced that Oracle's relational database management system (RDBMS) was irrelevant.

So I asked him, "Let's say I place an order for this product of yours. Are you going to track that order in a NoSQL database? Or does your office rely on an RDBMS to capture orders?"

He thought about it. "Good point, that *is* a relational database system."

"OK, and how about your employees? When your company tracks your hours, what do they use?"

"True, true, that's a SQL database too."

"How about supply management? Shipping? General ledger and other accounting functions? Inventory management? And the other office systems?"

"OK, you got me—those are also RDBMS servers, all SQL systems, true."

"So anything involving orders, customers, employees, vendors, partners, products, inventory, manufacturing, payroll, and just about every other aspect of the business is a SQL system."

“True, it’s true.”

“But if I want to analyze comments on my web site, your company’s product is a good choice.”

“Yes! Exactly!” He seemed relieved to be back on familiar territory. “And we can analyze millions of comments per second.”

“OK, so if I get millions of comments per second on my web site, I’d be interested.”

“Yes. Twitter uses us.”

“Cool. So if I want to perform some text analysis on a massive scale, I could theoretically still use Oracle but your product might be better optimized for massively large volumes of insert-only processing if I’m Twitter.”

“Exactly.”

“Awesome. One problem. I’m not Twitter. How many Twitters are there out there? Last I checked there was one. Now granted, I know other organizations have requirements to process millions of records per second. But who? Facebook? Or Google? So perhaps two, ten, or thirty web sites?”

“Well…probably more than that.”

Sure, probably. And we all know that number is growing. But still —to suggest this means the death of Oracle?

And at this point I decided to really freak him out. “Your product is probably written in Java, isn’t it?”

“Yes, it is.”

“You know Oracle owns Java, right?” He looked horrified and denied that it was true.

Folks, I’m as excited about the big data revolution and the potential of the Internet of Things (IoT), machine learning, and all technology. I work in the world of big data systems and a myriad of exotic data modeling alternatives. I love cutting-edge developments. But at the end of the day, there is no question that the workhorse of all industry and government, the backbone of automated systems, the technology on which virtually all large organizations rely has

been—and continues to be—the relational database management system. And the Oracle RDBMS is the best in the business.

I recently attended a technical session at a popular Java conference where the speaker presented something like 32 use cases for various situations where some new NoSQL system would perform faster or otherwise more optimally than Oracle's RDBMS. Each example was based on a unique and—to me—unusual (perhaps some would say contrived) use case. "So if you have this unusual combination of data structures and your business objective requires some particular type of analytics, sure, you could use Oracle, but if you want a shorter development cycle or faster performance, you should use this New NoSQL Open Source Tool #17." For one example, the SQL code required was 30 lines in length, but doing the same job with the alternative new tool required only 23 lines of code. OK, sure, so I'm going to learn, install, configure, code, test, and deploy a different tool each time for every one of 32 different use cases so I can type seven fewer lines of code. Yeah, let's do that.

Or not. How about I just use Oracle and be done with it?

Again, folks, don't get me wrong—all systems have their place. But even today, the most powerful information tool in the world is still the relational database. As of this writing, the official ranking at DB-ENGINES.com lists the top four database engines in use today as being of the relational database model, with seven of the top ten in use falling into that category (see http://db-engines.com/en/ranking). At the top of that list is the same database that has led the world for years now: Oracle's RDBMS.

Oracle's MySQL is number two.

The core language at the foundation of all Oracle products is Oracle's Structured Query Language (SQL), a language that is common to all major relational databases of all vendors worldwide.

Even many of the newer alternative data stores that aren't necessarily based on a relational database model are struggling to implement SQL-like languages, such as Cassandra's CQL or IBM's "SQL-like querying language HiveQL"

Discovering Diverse Content Through Random Scribd Documents

As the snow-dust cleared, it revealed the grizzly seated in a moving mass of snow, coasting swiftly down.

The snow went to pieces on a nearly hidden rock-point and spilled the coaster. He rolled, then slid, first on his stomach head first, then on his back feet first, but collected himself at the bottom. Rising and bearing away from the deep snow, he climbed up again and appeared to look with interest at the gully he had made in the slope as he coasted and also at the scattered marks where he was spilled.

Just beneath the cornice he waded into the snow. He shook himself, kicked the snow, went through swimming motions but still did not start to slide. The slope was not steep enough. Wallowing down a short distance, he rose, then rolled forward over and over—cartwheeled. After three or four turns he began to slide. This stirred up so much snow-dust that I could get only dim glimpses of him and could not tell whether he was sliding head first or tail first. On the thin snow at the bottom the dust-fog cleared, and the grizzly rolled over and over down the slope like a log. Getting on his feet, he walked away and disappeared behind the storm-battered trees at timber-line.

I took pains to track the bear. Down in the woods, more than three miles from his coasting-place, he had made a meal the evening before off the smelly old carcass of a deer. He spent the night by the bones. In the morning he climbed to the top of a ridge that rose above the tree-tops. His tracks showed that he had walked about here and stopped at three or four places to look down on scenes below.

Then he had followed his tracks back close to where he had spent the night. Here he had tramped about in the snow as though having nothing in particular to do. But a coyote was trying to find something on the bones and the bear may have been threatening him. He finally started off, plainly with coasting in his mind, for without stopping he went directly to the snow cornice. From tracks which I saw in this and other cañons I realized that a grizzly sometimes goes out of his way in order to coast down steep snowy places.

A grizzly that I was following one November morning was evidently well fed, for he traveled slowly along with apparently nothing to do. Descending the ridge on which he had been walking, he came upon the side of a steep southern slope, across the ravine from where I had paused to watch him. Occasionally a bush or weed sprang up as the warm sun released it from its little burden of snow. If it was close to him, he reached out one paw and stroked or boxed it daintily and playfully as a kitten; or, if a few feet away, he stopped, turned his head to one side, and looked at it with lazy, curious interest. He turned for a better glimpse of a tall willow springing up as if inviting him to play and appeared just ready to respond when he caught sight of his moving dark-blue shadow against the white slope. Instantly, reaching out lightly with one fore paw, he commenced to play with the shadow. As it dodged, he tried to reach it with the other paw, then stopped to look at it. He sat down and watched it intently, ready to strike it if it moved; he pushed his nose closer to it. Keeping his eyes on the shadow, with a sudden leap he threw both fore paws forward and brought them down where the shadow had been before his move. For several seconds he leaped and struck right and left in his vain efforts to catch it. Then, seated on his haunches, he watched the shadow out of one eye. He turned his head, possibly wondering what the shadow would do. He seemed surprised to find that it was not behind him, and turned back quickly to see where it was. Did the grizzly know what this shadow-thing was, and was all this just jolly make-believe? In any case, he was playing and playing merrily. When I first watched him he reminded me of a kitten, but the longer he played the more his actions resembled those of a puppy and finally those of dog.

As the grizzly backed slowly down the slope, he watched the shadow following him, and made a feint as though about to grab it, but stopped. Slowly he started after the shadow up the slope, then pursued it with a rush. Then, backing away along the side of the slope, he watched the shadow out of the corner of his eye. He suddenly stopped and stood as though thinking; then wheeled, faced down the slope, and looked off into the distance. After a

second he slowly turned his head and looked over first one shoulder, then the other, for the shadow. Finally, rising, he looked between his legs.

Leisurely he lay down with head toward the sun and put fore paws over his eyes as though starting a game of hide-and-seek and expected the shadow to hide. But this may have been to shut the dazzling sun-glare from his eyes, for presently he moved his head to one side to watch the shadow.

Abruptly he ended, rose to his feet, and started off briskly in the direction he was traveling in when the blue shadow upon the snow coaxed him to stop and play.

Generally the grizzly plays alone. Most animals play with one or many others of their species. Three or four times I have seen a lone grizzly playing much after the manner of a dog—playing with himself as it were. He ran round and round in a small circle, alternating this with leaping into the air and dodging about, and rolling on his back with feet waving in the air. He ended the play with a lively and enthusiastic chase of his tail.

The two cubs that I raised were always eager for play. They played with each other, they were ready at all times to play with me, and occasionally one of them played with my dog Scotch. Grizzlies in captivity will sometimes play with their keeper. Perhaps they would do so more frequently if they liked the keeper. Sometimes pet bears will play with strangers. They are ready to seize an opportunity for brief play and in this, as with the man who was impersonating bears, they often show a sense of humor; and they sometimes imitate or mock the actions of some other animal.

An outing in northwestern Arizona gave me fresh glimpses into grizzly life, although I had not expected to see grizzlies. I found them apparently at home with heat and sand in the edge of a desert. Perhaps these bears were only visitors. They were not dwarfed by the harsh conditions but appeared similar to grizzlies of other localities.

I was sheltered to the leeward of a rock-outcrop waiting for a roaring desert windstorm to subside. As I looked off into the dusty distance, a brown, dust-covered grizzly came into view. He climbed up and sat down upon a large sand-dune and looked around evidently glad that things were clearing. He watched closely a dust spiral which came spinning across the clear sky. As it passed close to him, a withered cactus-lobe dropped from it upon the dune, turned over once or twice, and then rolled down the slope. The grizzly took after it, striking out with right fore paw; but, missing, was upon it with a plunge. Picking the cactus up cautiously in his teeth, he held it for a second, then with a jerk of his head tossed it into the air and pursued it. The sloping sand-dune caved and slid beneath him. Forgetting the cactus, he leaped along the crumbling sand and made a number of lunges, each followed by a dive and an abrupt stop on the sand. He ran in a circle round the crest of the dune several times, occasionally coming to a sudden stop. Then, sliding down the dune, suddenly stopped his play.

He stood still at the foot of the dune for several seconds and looked off into the distance. He was debating what he should do next. Off he started slowly toward the horizon. Into the edge of the mysterious landscape of a mirage he walked and vanished. I thought him lost and rose to move on, when a purple shadowy landscape pushed up into the sky and in this strange, dim scene a giant shadowy grizzly raced and played.

Play is a common habit of animals. Darwin, Wallace, and others have emphasized its importance as a progressive evolutionary factor in the survival of the fittest. Play is rest and relaxation; it gives power and proficiency; it stimulates the brain to the highest pitch of keenness and arouses all the faculties to be eager and at their best; it develops the individual. Play not only is a profound advantage to the player, but is necessary to the requirements of an efficient life.

All alert animals freshen themselves with play. The human race is beginning to do intelligently what it once did instinctively; it is relearning the lost art, the triumphant habit, of play.

Matching Wits with the Grizzly

In April, 1904, "Old Mose," an outlaw grizzly, was killed on Black Mountain, Colorado. For thirty-five years he had kept up his cattle-killing depredations. During this time he was often seen and constantly hunted, and numerous attempts were made to trap him. His home territory was about seventy-five miles in diameter and lay across the Continental Divide. He regularly killed cattle, horses, sheep, and hogs in this territory, and, so far as known, did not leave this region even briefly. Two missing toes on his left hind foot were the means of identifying his track.

Old Mose killed at least five men and eight hundred cattle, together with dozens of colts and other live stock. His damage must have exceeded thirty thousand dollars. Often he smashed the fences that were in his way. He had a fiendish habit of slipping up on campers or prospectors, then rushing into their camp with a roar, and he evidently enjoyed the stampedes thus caused. On these occasions he made no attempt to attack. Although he slaughtered stock to excess, he never went out and attacked people. The five men whom he killed were men who had cornered him and were attempting to kill him.

Rarely do grizzlies kill cattle or big game. Old Mose was an exception. None of the other grizzlies in the surrounding mountains killed live stock. During his last years Old Mose was followed at a distance by a "cinnamon" bear of large size. This grizzly had nothing to do with the killing, never associated with Old Mose, but simply fed on the abundance which he left behind.

A heavy price on his head led the most skillful hunters and trappers to try for Old Mose. Three of the best hunters were killed by him. All trapping schemes failed; so, too, did attempts to poison. Finally he

was cornered by a pack of dogs, and the hunter ended his career with the eighth shot.

Though Old Mose was forty or more years of age when killed, his teeth were sound, his fur was in good condition, and he had every appearance of being in excellent health. He was apparently good for several years more of vigorous life.

Trapping the grizzly has become a non-essential occupation. It is a waste of energy, because rarely successful. Now and then a bear is trapped, but it is usually a young bear of but little experience, a mother who is trying to protect her cubs, or a bear whose momentary curiosity caused him to forget his customary caution.

Formerly it was not difficult to trap a grizzly. But he quickly learned to avoid the menace of traps. The bear sees through all the camouflage of the trapper. Deodorized and concealed traps, traps near the bait and far from it, traps placed singly and in clusters—these, and even the slender concealed string of a spring gun, he usually detects and avoids.

I spent a number of days with a trapper who felt certain that he would secure the thousand-dollar reward for the capture of an outlaw cattle-killing grizzly. Earlier than usual the cattlemen drove the cattle from the summer range. The trapper took an old cow to a selected spot near the end of a gulch, picketed her, and surrounded her with spring guns and traps. The outer line of defense consisted of three spring guns which guarded three avenues of approach to the cow. The strings to these guns were of silk line stretched over bushes and tall grass so as to be inconspicuous. As the bear would be likely to seize the cow's head or neck, a trap was set between her head and a large bowlder near by. There was a trap on each side of the cow and one behind her.

The first night there was a light fall of snow, but no bear. But the second night he came. Tracks showed that he scented or heard the cow from afar—more than a mile away—and came straight for her. He stopped within two feet of the silk line and walked cautiously

round it until he completed the circuit. But there was no opening. He then leaped the line—something I had never before heard of a bear doing. He approached the cow, then walked round her; he went close to the traps and detected just where each one was concealed. Then, between the trap in front and the one on the left, he seized and killed the cow. After feeding on her he dragged the carcass across two traps and left it. Leaping the line again, he went off down stream in the gulch.

The trapper reset the traps the following day and placed an additional one just inside the line, at the point where the grizzly had leaped over it. Then, some distance down stream, he strung a line across the gulch and attached a spring gun to one end of the line.

The grizzly returned that night, coming down the gulch. After walking the lines around the carcass, and apparently having detected the new trap inside, he leaped the line at another point. He avoided the traps and ate about half the remainder of the carcass. Then he piled a few dead logs on what was left, leaped the line again, and went down the gulch. He stopped within ten or twelve feet of the line here and followed it along to where it connected with the rifle on the side of the gulch. Walking round the rifle, he went back into the gulch and followed his trail of the preceding night.

The trapper, amazed, vowed vengeance. He made haste and built a log pen around the remains of the carcass. He then set two traps in the entrance of the pen, one in front of the entrance and one inside the pen.

The second night following, the bear returned, leaped over the line, and cautiously approached the pen. The bowlder formed part of the rear end of this. Climbing on top of the bowlder, the bear tore off the upper part of the pen, which rested on the bowlder, and then, from the bowlder, without getting into the pen, reached down and dragged up the carcass. In doing this one of the poles which had been torn out of place and thrown to one side struck the top of a stump, turned over, and fell across the line attached to a spring gun. This fired its waiting shot. Then the grizzly did this astounding thing.

He appears to have been on top of the bowlder when the shot was fired, but he descended, made his way to the smelly gun, and then examined it, the snow being tracked up in front of it. Returning to the carcass, he dragged it off the bowlder and ate the last mouthful. Leaving the bones where they lay, he walked across the line where the pole rested on it and went off up the gulch.

A grizzly is wary for the preservation of his life. It is generally a triumph of stalking to get within short range of him. His senses detect danger afar. He will sometimes hear the stealthy approach of a hunter at the distance of a quarter of a mile, and under favorable conditions he will scent a man at a distance of a mile or more. Being ever on guard, and generally in a place where he can scout with scent, sight, or hearing, he usually manages to keep out of range or under cover. It is not uncommon for two or three hunters in different parts of bear territory, searching with field-glasses, watching from high places, taking advantage of the wind, and moving silently, to spend a week without even seeing a bear, although bears were about. Many times, even when trailed with dogs, through his brains, his endurance, and his ability to move rapidly over rough territory, the grizzly escapes being cornered.

I have often been in bear territory for days without seeing one. Then again I have seen two or more in a few hours. Frequently I have been able to watch a grizzly at moderately short range for an hour or longer. I was chiefly concerned to get near enough to study his actions, and not to take a shot, as I trailed without a gun. But many a day I have failed to see a grizzly, though I searched carefully in a territory which I knew and where the habits of the individual bears were somewhat known to me.

A grizzly territory is covered with a web of dim trails over which he usually travels. If surprised, the grizzly turns and retreats over the trail on which he was advancing. A bear’s trail, close behind him, is a dangerous place to be in if he does retreat. Many a hunter, a few feet off the trail, has had the alarmed bear rush by without noticing

him, while others, who were directly on the trail, have been run over or assailed by the bear.

When in a trap or cornered, a wounded grizzly sometimes feigns death. Apparently, when he considers his situation desperate, he sees in this method the possibility of throwing his assailant off his guard. A trapper once invited me to go the rounds with him along his string of traps. In one of these was a young grizzly. At short range the hunter fired two shots and the bear fell in a heap.

We advanced within a few feet and saw that the bear was bleeding freely, but halted "to be sure he was dead." "I make it a point," said the hunter, "to wait until a bear dies before I start skinning him. Once I made the mistake of putting down my rifle and starting to skin the bear before he was dead."

We stepped forward, and the hunter prodded the bear with the end of the rifle-barrel. Like a jumping-jack the bear sprang at the hunter, knocked him over backwards, tore a hole through his clothing, and ripped a bad wound in his skin on the thigh. Fortunately the chain and clog on the trap held the bear from following up his assault.

On another occasion I was with a party of mounted hunters with dogs who chased a grizzly out of his territory and cornered him in a deep box cañon. He was at bay and the excited dogs were harrying him as we came up. He stood in the end of the cañon, facing out, evidently watching for an opportunity to escape. He discouraged all attacks by his swift and cool-headed defense. If a bush stirred behind he made a feint to strike. If a dog came close to his side he appeared to strike without looking. He did not allow any rear movements or attacks to divert his attention from the front, where the hunters stood at short range with rifles ready. They waited for a chance to shoot without hitting a dog. Suddenly the grizzly charged and all was confusion. With a stroke of fore paw he broke the jaw of one horse, with another stroke he caved in three ribs of another horse, he bit and broke a man's arm, disemboweled one dog and wrecked another, and made his safe get-away. Not a shot had been fired. There was no pursuit.

While with three hunters, I once came close upon a grizzly who was digging for mice. The hunters opened fire. For seconds the cañon walls crashed and echoed from the resounding rattling gunnery. Thirty or forty shots were fired. The bear escaped. A hunter took up the trail and the following day ran down the bear and killed him. He carried no wounds except the one from the shot fired by this hunter. He weighed perhaps five hundred pounds.

But the story of the shooting as told by one of the first three hunters was something like this: "We came upon the largest grizzly that I had ever seen. He must have weighed fifteen hundred pounds or more. He was busy digging in an opening and didn't see us until we opened on him at short range. As we had time, we aimed carefully, and each of us got in several shots before he reached the woods. He ran with as much strength as if nothing had happened; yet we simply filled him full of lead—made a regular lead mine of him."

The grizzly is not an exceedingly difficult animal to kill if shot in a vital spot—in the upper part of the heart, in the brain, or through the centre of the shoulder into the spine. Hunters too often fire aimlessly, or become so frightened that they do not even succeed in hitting the bear, though firing shot after shot in his general direction.

William H. Wright once killed five bears with five shots in rapid succession. I was with a hunter in a berry-patch when four grizzlies fell with four lightning-like shots. George McClelland in Wyoming killed nine bears inside of a minute. He probably fired sixteen shots. These were grizzlies, two of which were cubs.

During the last few seconds of his life, after the grizzly receives a fatal wound, he sometimes fights in an amazingly effective and deadly manner. As an old bear-hunter once said, "the grizzly is likely to do a lot of execution after he is nominally dead." Hundreds of hunters have been wounded and scores of others killed by grizzlies which they were trying to kill or capture. Hundreds of others have escaped death or serious injury by extremely narrow margins.

A grizzly appears to have caused the death of the first white man to die within the bounds of Colorado. This happened on the plains in the eastern part of the State. Seeing the grizzly in the willows near camp, the man went out to kill him. The wounded grizzly knocked him down and mauled him so severely that he died.

In southern Colorado I saw a frightened hunter on horseback pursued by a mother grizzly. He was chasing her cubs, when she suddenly charged him. The horse wheeled and ran. Although the hunter urged the horse to its utmost, the bear was almost upon them when his dogs rushed in and distracted her.

Hunters claim that if a man feign death when knocked down by a grizzly he is not likely to be injured. James Capen Adams appears to have saved himself a number of times by this method. I have not had occasion to try the experiment.

An old bear-hunter told me that he once saved himself from what seemed to be certain death, in a most unusual manner. A grizzly knocked him sprawling, then leaped upon him to chew him up. In falling, however, the hunter had grabbed up a stone. With this he struck the bear a smashing blow on the tip of his nose as the bear landed upon him. The bear backed off with a roar of pain. This gave the hunter opportunity to seize his rifle and fire a fatal shot.

Three or four men who have been severely bitten and shaken by grizzlies have testified that they felt no pain at the time from these injuries. I cannot account for this. Livingstone, the African explorer, also states that he felt no pain when a lion was chewing him.

I once witnessed a grizzly-roping in Montana that had rare fighting and adventure in it. Two cowboys pursued a grizzly nearly to camp, when several others came riding out with whirling ropes seeking fun. They roped the bear; but a horse was pulled off his feet and dragged, a cowboy was ditched into a bunch of cactus, another cowboy lost his saddle, the cinches giving way under the strain, and a horse struck in the flank had to be shot. Meantime the bear got away and stampeded the entire herd of cattle.

Bear stories have a fascination all their own. Here is one of five men who were hunting in northwestern Montana, a section of high and rugged mountain-peaks, snow-fields, and glaciers, well-nigh inaccessible, and wholly uninhabited save by wild animals. Two of the men went off to a distant glacier-basin for big game, separating and going on opposite sides of a ridge. One of them after a steep climb came upon a grizzly cub, so large as to appear full-grown except to the most careful observer. He killed the bear with three cartridges from his Mauser rifle, and then, leaning the rifle against a rock, stooped over to examine his prize. Suddenly he heard a fearsome cry and a swift rush. Turning, he saw the mother bear coming for him and not more than sixty feet away.

Springing to his rifle, he put two steel-clad bullets into the grizzly, emptying his gun. With remarkable coolness he slipped in another cartridge and sent a third bullet into her. But Mauser bullets are small and an enraged grizzly is a hard thing to stop. The three bullets did not stop this mother bear, frantic at the sight of her dead cub. With one stroke of her paw she knocked the hunter into a gulch, eight feet below. Then she sprang down after him, caught him in her mouth, shook him as a dog might shake a doll, and dropped him. She caught him up again, his face between her tusks, shook him, and again dropped him. A third time she snatched him up. But now the little Mauser bullets had done their work, and she fell dead across the hunter’s feet.

It was high time, for the man was in little better condition than the bear. His scalp and cheek and throat were torn open, there were five gaping wounds in his chest, his thigh bore an irregular tear two or three inches wide from which the flesh hung in ragged strips, and his left wrist was broken and the bones protruding through the twisted flesh. His companion, alarmed by the six shots, hurried to the hunter. He bound up his wounds, set him on a horse, guided him for two hours across country without a trail, and got him to camp at nightfall. But to save the man’s life it was necessary to get him to the railroad in short order. He was put on a horse with a man on each side to support him, and for eleven hours the party climbed

down the five miles through forest and jungle, cutting their way as they went. At dark, completely exhausted, they flagged a limited train. The hunter was hurried to a hospital and operated upon and his life saved.

The man with a gun is a specialist. He is looking for a particular thing in order to kill it. Generally the gun hampers full enjoyment of the wilderness. The hunter misses most of the beauty and the glory of the trail. If he stops to enjoy the pranks of other animals, or to notice the color of cloud or flower, he will miss his opportunity to secure his game. When at last he is within range of a bear, it may scent him and be off at any minute, so he must shoot at once. He learns but little of the character of the animal.

Trailing the grizzly without a gun is the very acme of hunting. The gunless hunter comes up close, but he lingers to watch the bear and perhaps her cubs. He sees them play. Often, too, he has the experience of seeing wilderness etiquette when other bears or animals come into the scene. The information that he gathers and his enjoyment excel those obtained by the man with a gun.

Roosevelt has said and shown that the hunter whose chief interest is in shooting has but little out of the hunt. Audubon did a little shooting for specimens. Wright had as many thrills with the camera as with the rifle. Adams was far happier and more useful with his live grizzlies than he was killing other grizzlies. Emerson McMillin was satisfied to hunt without either gun or camera. The words and sketches of Ernest Thompson Seton have given us much of the artistic side of the wilderness. Dr. Frank M. Chapman explored two continents for the facts of bird-lore and in addition to his books prepared the magnificent bird-groups in the American Museum of Natural History. Thoreau enjoyed life in the wilderness without a gun. But John Muir was the supreme wilderness hunter and wanderer. He never carried a gun. Usually he was in the wilds alone. He spent years in a grizzly bear country. But the wealth of nature-lore with which he en riched his books make him the Shakespeare of nature.

The man without a gun can enjoy every scene of nature along his way. He has time to turn aside for other animals, or to stop and watch any one of the countless unexpected wild-life exhibitions that are ever appearing. Then, too, he hears the many calls and sounds, the music of the wilds. The wild places, especially in grizzly bear land, are crowded with plants and with exhibitions of the manners and the customs of animals, and are rich in real nature stories being lived with all their charm and their dramatic changes.

Where Curiosity Wins

The grizzly bear has the most curiosity of any animal that I have watched. As curiosity arises from the desire to know, it appears that the superior mentality of the grizzly may be largely due to the alertness which curiosity sustains.

Although the grizzly has learned the extreme danger of exposing himself near man, yet, at times, all his vigilant senses are temporarily hypnotized by curiosity. On rare occasions it betrays him into trouble, or lands a cub in a trap. In old bears curiosity is accompanied with a keenness of observation and a caution that enable him to satisfy his desire for information without exposure to danger. Often it enables him to anticipate a concealed danger—to penetrate the camouflage of something dangerous. Curiosity prevents oncoming events from being thrust on the curious. It is an effort to obtain advance information instead of taking things as they come.

In 1826 Drummond, the botanist, collected plants in the Rocky Mountains. In stopping to examine, to gather, and to press them he was doing the unusual. He thus attracted the attention of numerous grizzlies, who even came close to watch him. They showed no inclination to attack. Bears are "chock-full of curiosity" and will sometimes forget to eat in trying to understand at once the new or the unusual.

Lewis and Clark tell of a bear on a sand-bar who showed interest in their boat as it passed. He raised himself on hind feet and looked after them, and then plunged into the river and swam toward the boat. This novel outfit should have attracted the attention of any living thing, and a curious grizzly must have been almost overcome with wonder. Yet the explorers erroneously assumed that this intense curiosity and consequent attempt for closer inspection was evidence

of ferocity. During the first fifty years of the white man's contact with the grizzly, the bear frequently came close to a man or a camp for a better look; most frontiersmen thought this near approach was ferocity in the bear. Often the bear was greeted with bullets, and in due time he learned to satisfy his curiosity by stealth instead of by direct approach. But inquisitive he still is.

JOHNNY

In crossing the mountains in northern New Mexico I was overtaken by a Swede on his way to a lumber-camp. He carried a pack, and a part of it was an accordion. We made camp that night near the head of a gulch. Across from us a treeless mountain rose a thousand feet.

After supper the Swede played on his accordion and was soon lost in music. Pausing in my note-making to enjoy his contented expression, I saw an old grizzly watching us from across the mountain. Standing upon a bowlder, he was looking over the tops of the spruce trees that thrust up out of the gulch. Through my field-

glasses he appeared even more lost in wonder at the music than the enthusiastic, emotional player. When the refrain died away, the grizzly climbed down off the bowlder, and then, as another piece was begun, at once rose to remount, but instead stood with fore paws against the bowlder, listening. By and by he started up the mountain, pausing every few steps to turn and listen. He either stood broadside, his head tilted sideways, or raised himself on tiptoe, fascinated. A loud, lively, clashing close to one piece started him off on a gallop, but as soon as the music stopped the bear paused. He appeared puzzled and fidgeted about while the player sat silent, listening to my description of the bear's movements. A soft and melodious piece was next played. The bear, as the first strain sounded on the evening air, seated himself on his haunches facing us, and thus remained until the piece was finished. Then he climbed higher up the mountain and, on reaching the sky-line, walked lingering along in the last rays of the sun, looking down on us now and then as though wanting more music.

For two or three hours I watched a number of water-ouzels in the St. Vrain River. They often came within three or four feet of where I sat on the bank with my back against a large bowlder. To avoid frightening them, I sat motionless, not turning even my head for an hour or more at a time. I was enjoying their actions, when suddenly I caught the distinct odor of a bear. While still motionless and wondering further about this new interest, I heard the faint crack of a stick behind me. Turning my head at this sound, I saw a grizzly raised on hind legs with fore paws resting on top of the bowlder against which I was leaning. He looked at me with intense interest, all caution forgotten. His curiosity absolutely dominated. But my slight movement had aroused him. In two seconds from the time I turned he was crashing off through the thicket and probably was condemning himself for being so curious.

One Sunday afternoon one of the men in a lumber-camp rigged up a canvas hammock from the remnants of an old tent and suspended it between two trees. A pet grizzly who belonged at the camp watched him with curious interest while he worked. She observed him with

still greater interest as he stretched himself out in it and began reading. When the man deserted the hammock, she walked up to it, struck it, pushed it back and forth with fore paws, and then began rather awkwardly to climb into it. She had almost succeeded, when her weight upon the edge caused it to tip over and spill her on the ground. She leaped back surprised, then walked round the hammock, eyeing it with great curiosity. But the second attempt at climbing into the hammock was successful, and she made a most comical and awkward sight stretched out in it flat upon her back.

I came upon a grizzly on the heights above the timber-line watching the progress of a forest fire. Squatted on his haunches like a dog, he was in tently watching the fire-front below. A deep roar at one place, high leaping flames at another, a vast smoke-cloud at another caused him to turn toward each with rapt attention. He followed with eager eyes, also, the swiftly advancing cloud-shadows as they mysteriously rushed forward over ridge and valley. So intent was he that none of his keen senses warned him of my presence, though I stood near for two or three minutes, watching him. When I called he slowly turned his head. He stared at me in a half-dazed manner, then angrily showed his teeth. After another second he fled like a frightened rabbit.

The actions of a fisherman were being followed with the closest attention by a grizzly when I came along the opposite side of a narrow cañon. The bear stood still for some minutes, all his faculties concentrated on the fisherman. Every cast of the fly was observed with the greatest interest. A dangling trout caused him much excitement. Possibly the wind, touched with man-scent, finally warned him of danger. Anyway, he suddenly came to his senses, roused himself, and ran off.

On one of my camping-trips into the mountains I carried a long yellow slicker. Wearing this one misty, half-snowy day, I was followed by a grizzly. Twice he evidently came close to me; although I did not see him, I scented him. When well upon a mountain during the afternoon, I crossed an open place in the woods where a breeze

broke up the low-drifting clouds. For a moment I beheld a much interested grizzly near by. He stood and stared at me with all caution forgotten in his curiosity about the long yellow coat.

At dark I made camp at timber-line and forgot about the bear. The slicker was hung over a pole against a cliff to drain and dry. I went to sleep about eleven o'clock, after writing up my notes and watching my camp-fire. During the night the grizzly came boldly into camp, reared up, and slit the slicker. My shoes near by had not been noticed; the bacon and raisins swinging from a limb had not interested his keen nose. He was interested only in that slicker.

This was a case where the grizzly's curiosity might have got him into trouble. So intent was he on seeing this one thing that for hours he had forgotten food-hunting and followed me; and then in order to have a closer examination of it he must have waited near my camp two or three hours until I had lain down.

Another time, in the Yellowstone, while I was sleeping out, a big grizzly who had followed me all day came to give me closer inspection. I was awakened by his lightly clawing my bed. I opened my eyes and watched him for some seconds and lay perfectly still while he sniffed me over. After several seconds of this he appeared to have satisfied his curiosity and walked quietly away beneath the stars.

As I was trying to flash information with a looking-glass from Mount Lincoln to a prospector down in the valley one day, a grizzly became attracted by the flashes and lay down to watch them circle and shimmer here and there. In the San Juan Mountains a prospector once lost a wheel from a rude cart which he was hauling up a steep, roadless slope. As the detached wheel went bounding down and across the bottom of the gulch, a grizzly hit an attitude of attention and watched it. He became excited as it leaped and rushed up the opposite slope, and when it rolled over he approached cautiously to see what manner of thing it might be. A grizzly sat down on his haunches to watch the uncertain movements of an umbrella which had taken advantage of a wind-storm to desert a mountain-top

artist. He observed the disheveled umbrella with the greatest enjoyment as it danced across the moorland, and was particularly interested when a whirl sent it high into the air.

Riding a lazy pony slowly, silently, along a trail in the San Juan Mountains, I came close upon a grizzly and three cubs. They aroused the deep emotional nature of my pony. He took on new and fiery life, and in his eagerness to reach a high mountain across the cañon he forgot all about the topography—the cañon that lay deep between. While he was standing on one hind foot on the edge of the cañon I leaped from the saddle. The old bear and cubs, forgetting all possible danger, while he was thus performing stood up to watch the entire exhibition.

A grizzly keeps an eye on near-by animals, often without appearing to do so. But if the animal is doing something new or unusual he gives it his entire attention. Two bears, side by side, are interested in the same thing; yet the individuality of each will show if you watch them a minute. Of course, all bears are not equally curious about the same thing, but seldom do I recall outwitting a bear even when appealing to his curiosity, and never could I class him as stupid.

Grizzlies in regions just invaded by white men appear to have put in much time trying to make out what these strange creatures were about. What man is doing is ever of first importance to the long-lived grizzly. His interest in his surroundings appears to be greater than that of the average person. At any rate, the grizzly shows better knowledge of the habits of human beings than people have of the habits of bears.

His is not the curiosity of the idle; the grizzly is not prying into the affairs of others for mere pastime, but is concerned only so far as these affairs may benefit or harm him. His is the intelligent curiosity of a mind seeking facts. Most of the time he leads a solitary life; he rarely exchanges ideas or information with other bears. Most animals live in pairs or flocks and, each gathering information for all, they divide sentinel duty; but single-handed the grizzly must get the

news, must scout for himself. He is ever on the watch, does nothing blindly, and he simply must understand.

Any unusual occurrence arouses a grizzly's curiosity, and is to him "a word to the wise." His success lies in constant alertness. He might well be likened to a frontiersman; he has that painstaking vigilance, that untiring energy, which seeks to discover whether this strange track, sound, or displacement is the camouflage which conceals the enemy or if it be a clue which will lead to something of advantage. He at once endeavors to find out all that may be learned about it.

The grizzly bear may have inherited a love for exploration. His ancestors were adventurers, coming to this continent from Asia. The natural attraction which the new and unusual has for him may generally be gratified in his curiosity about things at home. But we may readily imagine that the grizzly must sometimes become restless when there is nothing stirring near by, when he finds no excitement in his home territory, and so wanders like an explorer to seek discoveries in far-off scenes. He is innately an adventurer; he seeks adventure and often finds it. His curiosity does not allow him to live in a rut—to live contentedly with old conditions. He is always learning; he keeps alive and growing.

The grizzly bear simply cannot be understood, nor half understood, if his curiosity is not considered. Notice a grizzly bear pet, observe a grizzly in a zoo, watch both the cubs and the old grizzlies in the Yellowstone and Glacier National Parks. They walk about like superior animals, which they are. Those in parks ever notice any sudden movement, any new figure in the foreground, and detect any unusual noise that comes from far away behind the woods. The grizzly bear and the scout are masters of woodcraft through intensive observation. Behind the word curiosity the grizzly bear has put a world of meaning.

The wild grizzly shows a deeper feeling for the scenes, the sounds, and the movements around him than any other animal that I have watched. Sometimes, while thus interested, he sits on haunches like a dog, again he stands on all fours, at other times he stands on hind

feet, tiptoe, and, on rare occasions, he sits on his tail with fore paws against his breast, perhaps leaning against something. Once in a while he gives full attention while lying down.

When looking at scenery and sunsets, his appearance is one of enjoyment; he appears to have feeling in the conscious presence of that which we call beautiful or glorious. I have seen a grizzly looking at a magnificent and many-colored sunset, completely absorbed. There was no fear at a flash of lightning or the roar and echoing roll of thunder. Once I saw a grizzly turn to stare at the course of a shooting star; another gazed for seconds at a brilliant rainbow.

Generally the grizzly's attention to these demonstrations rose superior to commonplace curiosity; he looked long, he listened closely, he was absorbed, and he appeared to feel as he sat lost in wonder. Had he been a child, with the power of speech, he certainly would have asked questions. Often his expression, his attitude, indicated that he was saying to himself: "What was that? What caused it? Where did that noise come from? What are those strange shadows running from, and how can they move without a sound?"

On the Defensive

In the grizzly bear we have the leading animal of North America, and one who might well be put at the head of the wild life of the earth. He has brain and brawn. He is self-contained and is prepared for anything. He makes an impressive appearance. He looks capable. He has bulk, agility, strength, endurance, repose, courage, enthusiasm, and curiosity. He is a masterful fighter if forced to defend himself.

But, a century ago, fifty years ago, or to-day, one could ramble the grizzly's territory in safety—unless attempting to kill a grizzly. The grizzly objects to being killed. If he is surprised or crowded so that he sees no escape, if the cubs are in danger or the mother thinks they are, or if the bear is wounded, there will be a fight or a retreat; and the grizzly will not be the one retreating. Almost every animal—wild or domestic—will fight if cornered or if he thinks himself cornered.

Before the days of the repeating rifle the grizzly boldly wandered over his domain as absolute master; there was nothing for him to fear; not an aggressive foe existed. But, being ever curious, he hastened to examine whatever interested him. The novel outfit of Lewis and Clark, which appears to have attracted unusual attention even from frontier people, must naturally have aroused the highest pitch of interest in the numbers of bears congregated in places along the river. There were boats of odd type,—some with sails,—strange cargoes, men in picturesque accoutrements, and even a colored man. The frequent close approaches which the bears made in trying to satisfy their curiosity caused Lewis and Clark to think them ferocious.

But is the grizzly bear ferocious? All the firsthand evidence I can find says he is not. Speaking from years of experience with him my answer is emphatically, "No!" Nearly every one whom a grizzly has

killed went out with the special intention of killing a grizzly. The majority of people who hold the opinion that he is not ferocious are those who have studied him without attempting to kill him; while the majority who say that he is ferocious are those who have killed or attempted to kill him.

During the greater part of my life I have lived in a grizzly bear region. I have camped for months alone and without a gun in their territory. I have seen them when alone and when with hunters, in Colorado, Utah, Arizona, Mexico, Wyoming, Montana, Idaho, Washington, British Columbia, and Alaska. I have spent weeks trailing and watching grizzlies, and their tracks in the snow showed that they often trailed me. They frequently came close, and there were times when they might have attacked me with every advantage. But they did not do so. As they never made any attack on me, nor on any one else that I know of who was not bent on killing them, I can only conclude that they are not ferocious.

Once I was running down a Wyoming mountainside, leaping fallen fire-killed timber, when suddenly I surprised a grizzly by landing within a few feet of him. He leaped up and struck at me with sufficient force to have almost cut me in two had the blow landed. Then he instantly fled. This, however, was not ferocity. Plainly he thought himself attacked and struck in self-defense.

There are many naturalists and frontiersmen who affirm from first-hand experience that the grizzly is not ferocious, and following are given a number of quotations from a few of these men.

John Muir, who spent about forty years in the wilderness home of the grizzly bear, from 1868 to 1912, usually camped alone and never carried firearms. He has repeatedly called attention in his books to the wilderness as a place of safety, and has mentioned that grizzly bears are masters in attending to their own affairs; also that bears have effectively suggested to wilderness visitors to do likewise. In "Our National Parks" Muir says:—

> "In my first interview with a Sierra bear we were frightened and embarrassed, both of us, but the bear's behavior was better than mine.... After studying his appearance as he stood at rest, I rushed forward to frighten him, that I might study his gait in running. But, contrary to all I had heard about the shyness of bears, he did not run at all; and when I stopped short within a few steps of him, as he held his ground in a fighting attitude, my mistake was monstrously plain. I was put on my good behavior, and never afterwards forgot the right manners of the wilderness."

Muir also says, in "Steep Trails":—

> "There are bears in the woods, but not in such numbers nor of such unspeakable ferocity as town-dwellers imagine, nor do bears spend their lives in going about the country like the devil, seeking whom they may devour. Oregon bears, like most others, have no liking for man either as meat or as society; and while some may be curious at times to see what manner of creature he is, most of them have learned to shun people as deadly enemies."

Mr. William H. Wright spent most of his time from 1883 to 1908 as a hunter of wild animals, and especially as a hunter of the grizzly. In addition to being an observer of exceptional care while hunting and trapping, he spent some years in photographing grizzlies. He first studied them in order to hunt them successfully; then laid aside his rifle and hunted them to study them. From full acquaintance with the grizzly Mr. Wright declares that he is not ferocious. He offers the following comment concerning his curiosity—a trait which early explorers mistook for ferocity:—

> "We know now that the grizzly is chock-full of curiosity, and that one of his habits is to follow up any trail that puzzles or interests him, be it of man or beast. This trait has been noted and misconstrued by many.... So often have I seen this curiosity and

> proved it to be innocent that I have no fear whatever of these animals when indulging in this weakness of theirs. Time and again I have allowed one to approach within a few yards of me, and no calm observer who had watched a bear defying his own caution to satisfy his own inquisitiveness could mistake the nature of his approach."

Drummond, the botanist, had numerous experiences with grizzlies in the Rocky Mountains in 1826. He was familiar with their curiosity. He says that often they came close and stood up to look at him. But if he made a noise with his specimen-box, or "even waved his hand," they ran away.

James Capen Adams hunted and trapped big game from 1849 to 1859 in California and along the Pacific Coast. He captured numerous grizzlies, both old and young, and literally domesticated them. He discusses their characteristics at length. He knew them intimately, and in summing them up after years of close association he says of the grizzly, "He did not invite combat."

Kit Carson, another frontiersman of long experience with grizzlies, in writing of them does not call them ferocious.

Dr. W. T. Hornaday knows the grizzly in the wilds and has long and intimately known him in the zoo. In "The American Natural History" Dr. Hornaday has the following:—

> "I have made many observations on the temper of the Grizzly Bear, and am convinced that naturally the disposition of this reputedly savage creature is rather peaceful and good-natured. At the same time, however, no animal is more prompt to resent an affront or injury, or punish an offender. The Grizzly temper is defensive, not aggressive; and unless the animal is cornered, or *thinks he is cornered*, he always flees from man."

The early explorers were warned by the Indians that the grizzly was "an awful and ferocious animal." All the early writers had the preconceived belief that the grizzly was ferocious. Many of these

writers never saw a grizzly, but wrote down as fact the erroneous conclusions of the Indians. The few writers who did see a grizzly evidently judged him largely from these preconceived ideas. Even Lewis and Clark describe a number of the grizzly's actions and call him ferocious when the very actions which they describe simply show him as being curious, interested, or, at worst, excited at their strange appearance. They misinterpreted what actually happened.

A few sentences from Audubon well illustrate the wrought-up frame of mind of many hunters and authors when hunting or writing about the grizzly. Audubon says:—

> "While in the neighborhood where the grizzly bear may possibly be hidden, the excited nerves will cause the heart's pulsations to quicken if but a startled ground squirrel run past, the sharp click of the lock is heard and the rifle hastily thrown to the shoulder before a second of time has assured the hunter of the trifling cause of his emotion." This suggests emotion but not accuracy.

In summing up the animals of the North and West in 1790, Edward Umfreville wrote of the "red and the grizzle bear" that "their nature is savage and ferocious, their power dangerous, and their haunts to be guarded against."

In 1795 Sir Alexander MacKenzie recorded the following:—

> "The Indians entertain great apprehension of this kind of a bear, which is called the grisly bear, and they never venture to attack it except in a party of least three or four."

Henry M. Brackenridge, author of "Views of Louisiana," wrote the following from hearsay:—

> "This animal is the monarch of the country which he inhabitates. The African lion or the Bengal tiger are not more terrible than he. He is the enemy of man and literally thirsts for human blood. So far from shunning, he seldom fails to attack and even

to hunt him. The Indians make war upon these ferocious monsters with ceremonies as they do upon a tribe of their own species, and, in the recital of their victories, the death of one of them gives the warrior greater renown than the scalp of an enemy. He possesses an amazing strength, and attacks without hesitation and tears to pieces the largest buffalo."

The first paragraph which Lewis and Clark wrote concerning the grizzly, April 29, 1805, says:

"We proceeded early, with a moderate wind. Captain Lewis, who was on shore with one hunter, met about eight o'clock two white bears. Of the strength and ferocity of this animal the Indians had given us dreadful accounts; they never attack him but in parties of six or eight persons, and even then are often defeated with a loss of one or more of the party. Having no weapons but bows and arrows, and the bad guns which the traders supply them, they are obliged to approach very near the bear, and as no wound except through the head or heart is fatal they frequently fall a sacrifice if they miss their aim. He rather attacks than avoids man, and such is the terror which he has inspired that the Indians who go in quest of him paint themselves and perform all the superstitious rites customary when they make war on a neighboring nation. Hitherto those we had seen did not appear desirous of encountering us, but although to a skillful rifleman the danger is very much diminished, yet the white bear is still a terrible animal. On the approach of these two, both Captain Lewis and the hunter fired and each wounded a bear; one of them made his escape; the other turned upon Captain Lewis and pursued him seventy or eighty yards, but being badly wounded he could not run so fast as to prevent him reloading his piece, which he again aimed at him, and a third shot from the hunter brought him to the ground."

Below are two additional paragraphs from the Journal of Lewis and Clark. These show that the grizzly was most wide-awake and curious, and also that he was not accustomed to being afraid.

> "The bear which gave so much trouble on the head of the Missouri are equally fierce in this quarter. This morning one of them, which was on a sand-bar as the boat passed, raised himself on his hind feet and after looking at the party, plunged in and swam towards them. He was received with three balls in the body; he then turned around and made for the shore. Towards evening another entered the water to swim across. Captain Clark ordered the boat towards the shore, and just as the bear landed shot the animal in the head. It proved to be the largest female they had ever seen, and so old that its tusks were worn quite smooth."
>
> "Just as he arrived near Willow Run, he approached a thicket of brush in which was a white bear, which he did not discover till he was within ten feet of him; his horse started, and wheeling suddenly round, threw M'Neal almost immediately under the bear, who started up instantly, and finding the bear raising himself on his hind feet to attack him, struck him on the head with the butt end of his musket; the blow was so violent that it broke the breech of the musket and knocked the bear to the ground, and before he recovered, M'Neal, seeing a willow tree close by, sprang up, and there remained while the bear closely guarded the foot of the tree until late in the afternoon. He then went off, and M'Neal being released came down, and having found his horse, which had strayed off to the distance of two miles, returned to camp. These animals are, indeed, of a most extraordinary ferocity, and it is matter of wonder that in all our encounters we have had the good fortune to escape."

The grizzly was introduced to the world by Governor DeWitt Clinton of New York, who appears to have taken his information from the Journal of Lewis and Clark. In the course of an address before the

Literary and Philosophical Society of New York City in 1814, he completely misinterpreted the real character of the grizzly and popularized a number of errors that not only were believed then but have survived to this day. The real grizzly is a distinguished character; but the grizzly as commonly described by tongue and story—well, “there ain’t no such animal.”

Governor Clinton in discussing the work in store for the coming naturalists said, "There is the white, brown, or grizzly bear, the ferocious tyrant of the American woods—it exists, the terror of the savages, the tyrant of all other animals, devouring alike man and beast and defying the attacks of a whole tribe of Indians." Few people realize to what extent these inaccurate words have discouraged outdoor life and how enormously they have contributed to the output of fictitious nature writing.

The Indians had a profound respect for the fighting efficiency of the grizzly. When one of them killed a grizzly he triumphantly wore the claw as a medal for rare bravery. The grizzly has a head and a hide that the Indian could rarely penetrate with either an arrow or a spear. We may readily believe that the grizzly defied the attacks of “a whole tribe of Indians,” as Governor DeWitt Clinton said. He would defy a whole tribe of Indians or a score of white men with similar weapons to-day. So, too, would the elephant, the African lion, or the tiger.

With the rifles used at the time of Lewis and Clark it was necessary for the hunter to approach close to the bear that the bullet might have sufficient velocity to penetrate a vital spot. The rifles being only single-shot, the hunter was exposed to the assault of the bear in case his aim missed or the shot was ineffective. It is not surprising that in most cases those attempting to kill the grizzly either were overpowered by him or succeeded only through force of numbers and with the loss of some of the assailants. But the ability of the grizzly to withstand such attacks and to defend himself has been confused with ferocity.

The grizzly is a fighting-machine of the first order and with the weapons of two or three generations ago he often sold his life most dearly. In a short time the grizzly had the reputation of being a terrible fighter, and along with this he was given the reputation of being ferocious—of being an awful hunter of man. For the grizzly to repel effectually those who went out to attack him is a very different thing from his going out to hunt and to attack people who were not molesting him. This latter he has never done.

The words of Umfreville, MacKenzie, Brackenridge, Clinton, and Lewis and Clark bring out strongly that the grizzly is a fighter, formidable, perhaps unequaled. Their opinion on this point is supported by ample first-hand testimony down through the years, from all over the grizzly territory. But it has not been established that the grizzly is ferocious, is seeking to kill. No, the grizzly does not look for a fight; he is for peace at almost any price.

The grizzly fights in self-defense; men do the same. A man is not criminal for fighting in self-defense; neither is a grizzly. For this self-defense fighting the grizzly should not be put in the criminal class. "The worm will turn," is an old saying. All animals fight in self-defense, some more quickly than others. Few ever succeed against man; the grizzly often does. Apparently the effective self-defense of the grizzly is responsible for his criminal reputation.

It is common for those who believe that the grizzly is ferocious to believe also that he eats human flesh. There is no known instance of his having done so.

We are now hearing that the Alaska bears are especially ferocious. Yet, in Alaska at the present time, and for many years in the past, the bear trails are concealed as much as possible by being in the woods. This would prevent the bear on the trail being readily seen by man. Along the sea, where much bear food is cast ashore, the trails are not upon the open beach but some distance away behind the trees. The bears depend on scent to tell them if there is anything along the shore to eat. Both their trails and their daily life in Alaska

conclusively show that their chief concern is to keep away from and out of sight of man.

The experience with bears in the Yellowstone Park demonstrates that the grizzly is not ferocious. The Park had a numerous grizzly population when it was made a wild-life reservation. The people who in increasing numbers visited the Park carried no fire-arms and they were not molested by the grizzlies. Yet grizzlies were all about. After some twenty years of this friendly association of people and grizzlies, a number of grizzlies, dyspeptic and demoralized from eating garbage, and annoyed by the teasing of thoughtless people, became cross and lately even dangerous. But these bears cannot be called ferocious. Eliminate the garbage-piles and cease harassing the bears, and they will again be friendly.

The grizzly bear has been a golden gift of the gods for the countless writers of highly colored alleged natural history. There is a type, too, of wild fiction-writers of the Captain Mayne Reid class whose thrilling stories of the grizzly and other wilderness animals are purely fictitious, and, though not even pretending to be fact, appear to have been taken seriously by thousands. So prolific and continuous has been the output of these writers that facts have been lost, and it is practically impossible for the average individual to know the real grizzly bear. This comes near to being the immortality of error. It is a national misfortune that the overwhelming majority of people should be imposed upon with erroneous natural history. The destiny of the human race is intimately tied up with nature, and for any one to misunderstand the simple facts which unite us with nature is to be out of harmony with the whole scheme of things. An accurate knowledge of natural history has an important place in guiding the judgments of our race.

Because of their intimate knowledge of the grizzly bear, James Capen Adams, William H. Wright, and Philip Ashton Rollins admired this animal. It would be a glorious thing if every one appreciated the real character of the grizzly bear. A changed attitude toward him—

Welcome to our website – the ideal destination for book lovers and knowledge seekers. With a mission to inspire endlessly, we offer a vast collection of books, ranging from classic literary works to specialized publications, self-development books, and children's literature. Each book is a new journey of discovery, expanding knowledge and enriching the soul of the reade

Our website is not just a platform for buying books, but a bridge connecting readers to the timeless values of culture and wisdom. With an elegant, user-friendly interface and an intelligent search system, we are committed to providing a quick and convenient shopping experience. Additionally, our special promotions and home delivery services ensure that you save time and fully enjoy the joy of reading.

Let us accompany you on the journey of exploring knowledge and personal growth!