This site uses cookies to deliver our services and to show you relevant ads. By using our site, you acknowledge that you have read and understood our Privacy Policy. Your use of w3resource Services, is subject to these policiesMore info

Tutorials, Exercises published recently

Trending Exercises / Tutorial :

Daily Coding Challenges & Projects( 25-07-2025, Friday )

Python PCEP Certification Preparation Guide: Exam Details & Syllabus

Learn Data Structures and Algorithms (DSA)

Array Coding Problems: Classic & Challenging Challenges

100 Python Projects for Beginners with solution

Update:JavaScript Date - Exercises, Practice, Solution

Update:JavaScript fundamental - Exercises, Practice, Solution

Update:JavaScript basic - Exercises, Practice, Solution

Update:C# Sharp Basic Declarations and Expressions : Exercises, Practice, Solution

Update:HTML5 Basic (Tag and attribute) - Exercises, Practice, Solution

Update:HTML-CSS Practical Part-I: Exercises, Practice, Solution

Update:Swift Programming Exercises, Practice, Solution: Basic

Update:Scala Programming String - Exercises, Practice, Solution

Update:Scala Control Flow: Exercises, Practice, Solutions

Update:Rust Threads and Synchronization Exercises with Solutions and Explanations

Update:Rust Vectors Exercises with Solutions and Explanations

Update:Rust Beginners Exercises with Solutions and Explanations

Update:Ruby Basic: Exercises, Practice, Solution

Update:R Programming Vector: Exercises, Practice, Solution

Update:R Programming Basic: Exercises, Practice, Solution

Update:PHP Challenges: Exercises, Practice, Solution

Update:PHP String - Exercises, Practice, Solution

Update:PHP for loop - Exercises, Practice, Solution

Update:PHP arrays - Exercises, Practice, Solution

Update:PHP object oriented programming: Exercises, Practice, Solution

Update:PHP Basic Algorithm: Exercises, Practice, Solution

Update:Java Basic Programming : Exercises, Practice, Solution

Update:Java Array: Exercises, Practice, Solution

Update:Pandas Exercises, Practice, and Solutions

Update:Python Data Types: Dictionary - Exercises, Practice, Solution

Mastering Nested Dictionary Flattening in Python

Building a Universal Memoization Decorator with Python Dictionary Caching

Implementing a Self-Nesting Python Dictionary with Unlimited Depth

Sequential Python Dictionary Transformations with Functional Programming

Python Dictionary-Powered Graph Algorithms: From Theory to Implementation

Flexible Dictionary Merging: Implementing Custom Conflict Resolvers

Two-Way Python Dictionary: Building a Bidirectional Map with Equal Efficiency

LRU Cache Implementation: Optimizing Memory with Python Dictionary Tracking

Handling Circular References in Python Dictionary Serialization and Deserialization

Dictionary as Abstract Syntax Tree: Evaluating Complex Expressions

PostgreSQL User and Role Management Queries

How to create a New Role in PostgreSQL?

How to Create a PostgreSQL User with a Password

Grant SELECT Privileges to a User in PostgreSQL

How to Revoke Privileges from a PostgreSQL User

How to Change a PostgreSQL User's Password?

Update:Python filter function exercises

Update:Python Datetime - Exercises, Practice, Solution

Update:Python File Input Output: Exercises, Practice, Solution

Update:Python CSV File Reading and Writing - Exercises, Practice, Solution

Update:Python Regular Expression - Exercises, Practice, Solution

Update:Python Conditional Statements and loops

Update:NumPy Basic Exercises, Practice, Solution

Update:NumPy Array Exercises, Practice, Solution

Update:NumPy Mathematics Exercises, Practice, Solution

Update:NumPy Matrix Operations and Linear Algebra Exercises

Update:NumPy Statistics: Mean, Median, Covariance Exercises

Update:NumPy Basic: Exercises, Practice, Solution

Update:Python Programming Puzzles - Exercises, Practice, Solution

Update:Advanced Python Exercises and Solutions

Comprehensive Comprehensive Exercises for Managing PostgreSQL Partitioned Tables

Adding a New Partition to an Existing Table

Removing a Partition from a Partitioned Table

Attaching an Existing Table as a Partition

Efficient Strategies for Querying PostgreSQL Partitioned Tables

Retrieve All Data from a Partitioned Table

Query Data from a Specific Partition

Query Data using Partition Pruning

Practical Techniques for Returning Result Sets in PostgreSQL

Display all Employee Records with a PostgreSQL Function

Retrieve Employees by Department using a Function

Generate Regional Sales Summaries with a PostgreSQL Function

Comprehensive Guide to Table Partitioning in PostgreSQL

Design a Range Partition Table for Sales Data

Set Up Year-Based Partitions for Sales Table

Organize Orders by Region with List Partitioning

Comprehensive Guide to writing PL/pgSQL Functions in PostgreSQL

Create a PostgreSQL Function that returns a Fixed String

How to Create a PostgreSQL Function to Square a Number

Retrieve Employee Full Name using a PostgreSQL Function

Comprehensive Guide to Using Triggers with Stored Procedures in PostgreSQL

Implement an Audit Log Trigger for DML Operations

Update Record Timestamps Automatically with a Trigger

Propagate Parent Key Changes via Cascade Trigger

Practical Guide to Updating Views in PostgreSQL

Update Employee Data Through a Simple View

Update Records via View with Enforced Conditions

Perform Complex View Updates with INSTEAD OF Trigger

Optimizing Data with PostgreSQL Materialized Views

Build a Materialized Snapshot of Employee Data

Store Aggregated Sales Totals for Quick Reporting

Combine Order and Customer Data for Efficient Reporting

Master PostgreSQL Creating and managing views

Simplify Data Access with a Basic Employee View

Merge Employee and Department Data in a Single View

Display Only Sales Employees via a Dedicated View

Summarize Employee Data by Department in a View

Combine First and Last Names into a Computed Full Name

Master PostgreSQL Transactions with BEGIN, COMMIT, and ROLLBACK

Execute a Secure Salary Update Operation

Undo Updates Using Transaction Rollback

Execute Multiple DML Operations Atomically

Learn PostgreSQL Isolation Levels for Secure Transactions

Execute Transactions Using READ COMMITTED Level

Achieve Consistent Data with REPEATABLE READ

Maximize Data Integrity with SERIALIZABLE Isolation

Master PostgreSQL Locking and Deadlock Prevention Techniques

Securely Lock a Row to Prevent Concurrent Updates

Obtain an Exclusive Lock on the Entire Table

Prevent Delays by Using NOWAIT in Row Locking

Master Index Creation and Management in PostgreSQL

Optimize Lookups with a Basic Index on last\_name

Ensure Unique Email Entries with a Unique Index

Enhance Query Performance with a Composite Index

Unlock Performance Insights with EXPLAIN and ANALYZE

Analyze a Simple SELECT Query Execution Plan

Measure Real-Time Performance of a SELECT Query

Review Execution Plan for Table Joins

Hands-on PostgreSQL Indexing Techniques and Exercises

Enhance Lookup Speed on last\_name Column

Boost Salary Query Performance with a B-tree Index

Optimize Full Name Searches with a Composite Index

Hands-on MySQL Spatial Data Exercises and Solutions

Create a Table with a Spatial Column

Insert a Spatial Data Point Using ST\_GeomFromText

Calculate Distance between Two Points

Check if a Point is Within a Polygon

Practical MySQL Backup and Restore Techniques

Full Database Backup using mysqldump

Backup a Specific Table using mysqldump

Backup all Databases using mysqldump

Backup Database with Compression

Restore a Full Database from Backup

MySQL Security and User Management Exercises with Solutions

Advanced Full-Text Search Techniques for MySQL Mastery

Basic Full-Text Search on a Single Column

Full-Text Search on Multiple Columns

Full-Text Search with Relevance Ranking

Full-Text Search Using Query Expansion

Hands-on MySQL JSON and NoSQL Features Exercises

Query JSON Data with JSON\_EXTRACT

Update a JSON Document with JSON\_SET

Validate JSON Data using JSON\_VALID

Practical Exercises for writing SQL Queries Across Multiple Databases

Writing a Query that Works in Both MySQL and PostgreSQL

Comparing how Window Functions are Implemented in SQL Server and PostgreSQL

Query with LIMIT in MySQL and FETCH FIRST in SQL Server

Handling String Concatenation Across Databases

Using Date Functions Across Databases

Practical SQL Exercises for Database Backup and Recovery

Creating a Full Backup of a Database

Restoring a Database from a Full Backup

Restoring a Database Using Full and Differential Backups

Creating a Transaction Log Backup

Mastering Temporal Tables and Versioning Through Practical SQL Exercises

Creating a Temporal Table to Track Historical Data

Querying Current Data from a Temporal Table

Retrieving Historical Data from a Temporal Table

Retrieving Data as of a Specific Point in Time

Retrieving all Changes Between Two Points in Time

Practical Exercises for MySQL Replication and Clustering

Configuring a Slave Server in MySQL Replication

Master Server Configuration for MySQL Replication

Promoting a Slave to Master in MySQL

Monitoring Replication Lag in MySQL

Setting Up Multi-Master Replication

Practical Exercises for MySQL Query Optimization

Optimizing MySQL Queries with EXPLAIN for Order Date Filtering

Boosting Query Speed by Creating Indexes in MySQL

Efficient Data Retrieval using Indexed Columns in MySQL

Streamlining MySQL Databases by Removing Unnecessary Indexes

Improving Query Efficiency with Composite Indexes in MySQL

Practical Exercises to Master MySQL Stored Procedures and Triggers

Create a MySQL Stored Procedure for Employee insertion

How to Call a Stored Procedure for Employee Insertion

Create a MySQL Stored Procedure to Modify Employee Salary

How to Call a Stored Procedure for Salary Update

Create a MySQL Stored Procedure for Employee Deletion

Practical Exercises to Master MySQL Transactions and Concurrency

How to Start a MySQL Transaction and Commit Changes

Using MySQL ROLLBACK to Handle Transaction Errors

Setting MySQL Isolation Level to READ COMMITTED

Using SERIALIZABLE Isolation Level in MySQL

Managing MySQL Deadlocks with Rollback and Retry

Grok 3 AI: Revolutionizing Industries with Advanced AI Capabilities

Nugget AI Agent: Transforming Food Discovery and Delivery with AI

Practical Exercises to Master MySQL Window Functions and CTEs

MySQL Query to Rank Employees by Salary

MySQL Query to Compute Running Total of Sales

MySQL Query to Rank Employees by Salary in Each Department

MySQL Query for 3-Month Moving Average of Sales

MySQL Query to Find Salary difference from Previous Row

SQL - Practical Security and Access Control Exercises

How to Grant SELECT Permission on a Table in SQL?

How to Revoke INSERT Permission on a Table in SQL?

How to Grant EXECUTE Permission on a Stored Procedure in SQL?

How to Implement Row-Level Security (RLS) in SQL

How to Implement Column-Level Security (CLS) in SQL

SQL Error Handling and Debugging with Practical Exercises

Mastering Error Handling in SQL with TRY...CATCH

How to Debug SQL Queries Using Execution Plans

Logging SQL Errors for Debugging and Analysis

Troubleshooting SQL Bottlenecks with Query Profiling

Effective Deadlock Handling in SQL Transactions

Database Design and Normalization Exercises with Solutions

Convert a Table into First Normal Form (1NF)

Normalize a Table to Second Normal Form (2NF)

Achieve Third Normal Form (3NF) by Removing Transitive Dependencies

Convert a Table into Boyce-Codd Normal Form (BCNF)

Detect and Eliminate Update Anomalies in SQL

Optimize SQL Performance with Query Tuning Exercises with Solutions

Improve SQL Query Performance by Eliminating Unnecessary Joins

Boost Query Performance with Effective Indexing

Understand and Improve SQL Performance with Execution Plans

Improve Query Performance by Selecting Only Required Columns

Enhance Query Speed Using Covering Indexes

Master Advanced SQL with Practical Exercises and Solutions

Rank Employees using SQL Window Functions ROW\_NUMBER RANK

Using Recursive CTE to Compute Factorial in SQL

Transforming Sales Data with SQL PIVOT Operator

Reversing Data Pivoting with SQL UNPIVOT Operator

Extract JSON Fields in SQL Using JSON\_VALUE and JSON\_QUERY

Using NTILE() for Data Segmentation in SQL

Aggregating Departmental Salaries with Non-Recursive CTE

Querying XML Data in SQL Using XPath

Using SQL PIVOT and UNPIVOT for Data Transformation

Handling Nested JSON Arrays in SQL with OPENJSON

Stored Procedures and Functions Exercises with Solutions and Explanations

Creating a Parameterized Stored Procedure in SQL

Creating a Scalar User-Defined Function in SQL

Creating a Trigger to Log Table Updates in SQL

Creating a Table-Valued Function in SQL

Using Output Parameters in a Stored Procedure

SQL Transactions and Concurrency Control Exercises with Solutions and Explanations

Understanding the READ COMMITTED Isolation Level in SQL

Understanding the SERIALIZABLE Isolation Level in SQL

Handling Transaction Rollbacks in SQL

Demonstrating the REPEATABLE READ Isolation Level in SQL

Implementing Savepoints for Partial Rollback in SQL Transactions

SQL Data Manipulation Language (DML) Exercises

How to Insert a Single Record into a SQL Table?

How to Insert Multiple Records into a SQL Table

How to Update a Single Record in SQL Based on a Condition?

How to Update Multiple Records in SQL Based on a Condition

How to Delete a Single Record from a SQL Table Based on Condition

SQL Data Definition Language (DDL) Exercises with Solutions

How to Create a Table in SQL with Constraints and Best Practices

How to add a new Column to an Existing SQL Table

How to Modify a Column's Data Type in SQL

How to Drop a Column from an SQL Table

How to Add a Unique Constraint to an SQL Column

Mastering NumPy Factorials: A Comprehensive Guide

Mastering NumPy Digitization: A Complete Guide

NumPy np.exp: Usage, Applications, and Performance

How Large Language Models (LLMs) work Explained

DeepSeek-V3: Specialized AI for Real-World Challenges

Understanding Large Language Models and their impact

Power and Potential of AI Language Models

Exploring the impact and Potential of Open LLMs

The Evolution of GPT-1: Pioneering AI Language Model

Natural Language Processing and its Impact

How BERT revolutionized Natural Language Processing?

T5 Model: Revolutionizing NLP with Text-to-Text AI

Understanding RoBERTa: Enhancements and Applications

Understanding ALBERT: Optimized BERT for NLP Efficiency

Understanding DistilBERT: Speed and Efficiency in NLP

Qwen 2.5-Max: Capabilities and Industry Applications

Mastering NumPy Interpolation: Methods and Applications

Insights into Modern Data Centers

Comprehensive insights into Modern Data Centers

Unlocking the Potential of Cloud Data Centers

Understanding Data Center Technology

Exploring the Role of FFXIV Data Centers

Becoming a Data Center Technician

Unlocking the Potential of the IPEDS Data Center

Unlocking the Value of Data Center Knowledge

Resources and Trends with Data Center Dynamics

Challenges and Career insights for Data Center Technicians

Google Data Centers: Applications and Innovations

Unlocking the Potential of Bing AI

Optimize your System with ASUS AI Suite

Understanding AI Apps: A Comprehensive Guide

Canva AI: Revolutionizing Design for everyone

Exploring Blackbox AI: A Beginner's Guide

Transform your images with background remover AI

Understanding Galaxy AI: The Future of Smart Technology

Revolutionizing the Future with Artificial Intelligence

Benefits and uses of Chat AI Worldwide

ChatGPT: Revolutionizing Conversations with AI

AI Copilot: Your Assistant for Productivity

How Apple AI is Revolutionizing Technology and user experience?

Google AI: Transforming the future with Artificial Intelligence

Exploring the Power and Potential of Generative AI

Discover the Potential of AI Generators for Content Creation

Impact and uses of Character AI Technology

Topaz AI: Revolutionizing image and video enhancement

AI Detector: Identifying AI-Generated content

Benefits and Applications of AI Suites

Complete Guide to Agile Methodologies and Best Practices

What is the Agile Approach? A Beginner's Guide

A Beginner's Guide to understanding Agile

Understanding the Principles of Agile for Beginners

Understanding the Principles of Agile for Beginners

Understanding Agile Frameworks: A Beginner's Guide

A Beginner's Guide to Agile Requirements

A Beginner's Guide to Agile Software Methodology

A Beginner's Guide to Agile Software Testing

A Beginner's Guide to Agile SDLC

Comprehensive Guide to the Agile Development Life Cycle

JavaScript Event Delegation for Dynamic List items

JavaScript: Prevent Form Submission and Log Inputs

Event Bubbling and stopPropagation in JavaScript

Event Capturing in JavaScript with Practical Examples

API Calls with Debounced Input Events in JavaScript

Creating a Persistent Counter with JavaScript and LocalStorage

Build a Shopping Cart using JavaScript and SessionStorage

Fetch API and Error Handling in JavaScript

Geolocation API in JavaScript for user Location Access

JavaScript Clipboard API: Copy Text from Input Box

Desktop Notifications using JavaScript Web Notifications API

Numerical Digits: Basics, Types, and Programming Examples

Parameters in Programming: A Beginner's Guide

Subroutines in Programming: A Beginner's Guide

A Beginner's Guide to Programming Errors

Understanding Conditional Statements in Programming

Understanding Instances in Programming

Mock Objects in Programming: A Beginner's Guide

What are Reserved words in Programming?

What are Anonymous Functions in Programming?

A Complete Guide to using Checks in Programming

A Beginner's Guide to Understanding and Using GitHub

Understanding Git: Features and Basic Commands

Query Language Basics: Understanding how to interact with Databases

Threads in Programming: Simplifying Multitasking

JavaScript Promises with setTimeout Examples

Efficiently Combine Sync and Async tasks with Promise.all

Create Debounced Functions in JavaScript with Promises

Using Async/Await with Dynamic imports in JavaScript

Promise.race in JavaScript with Practical Examples