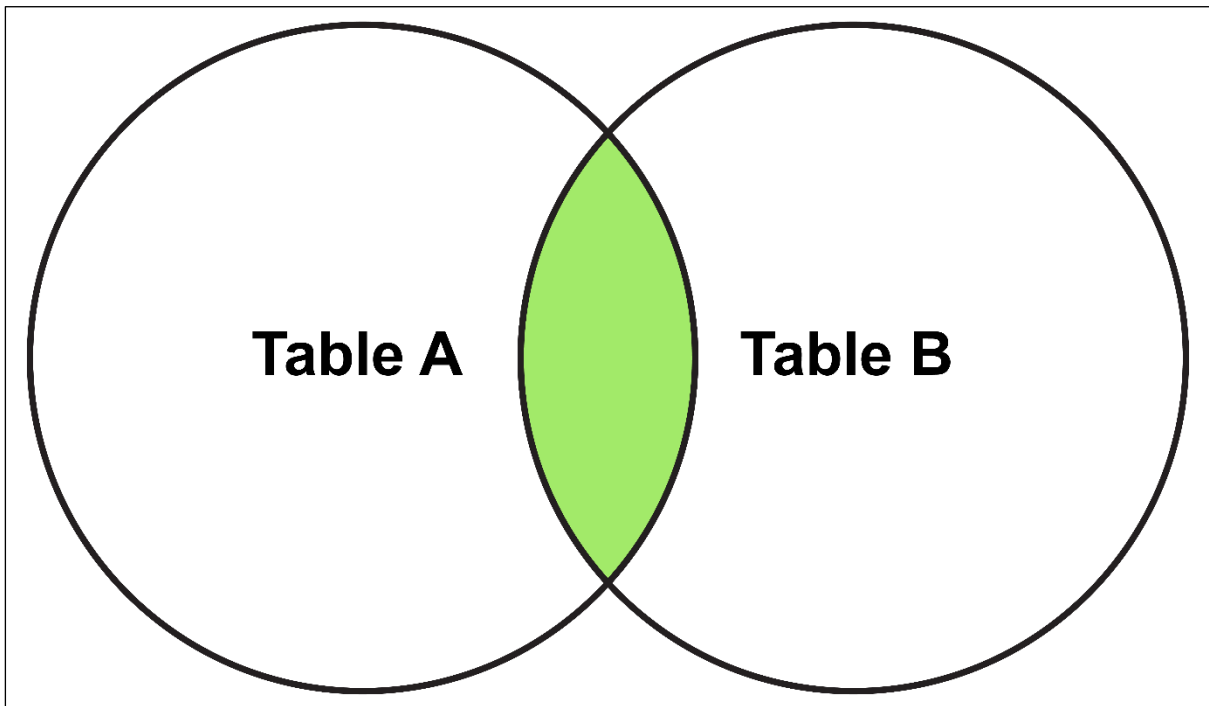
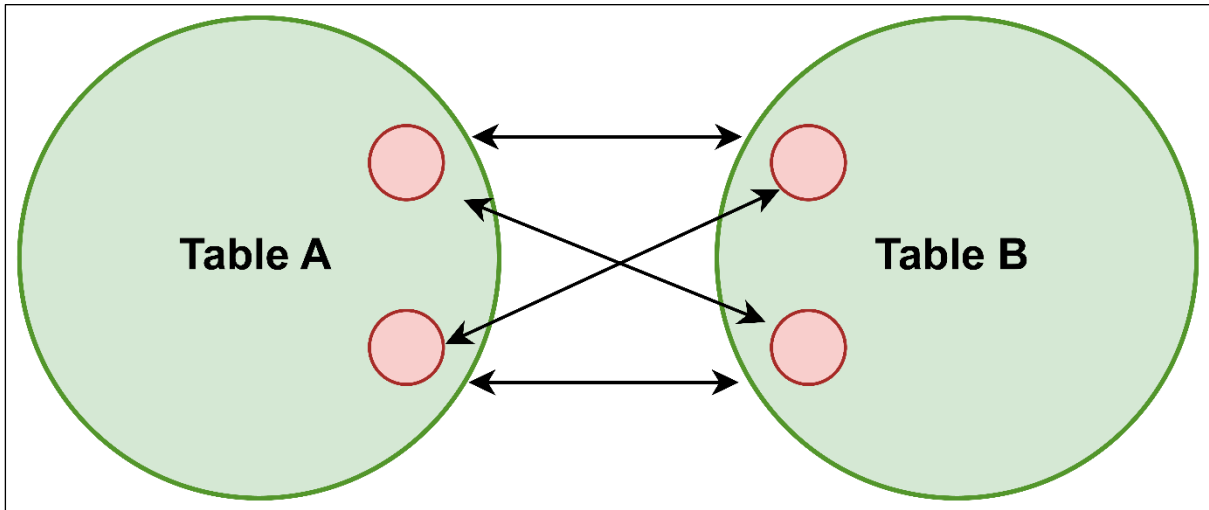
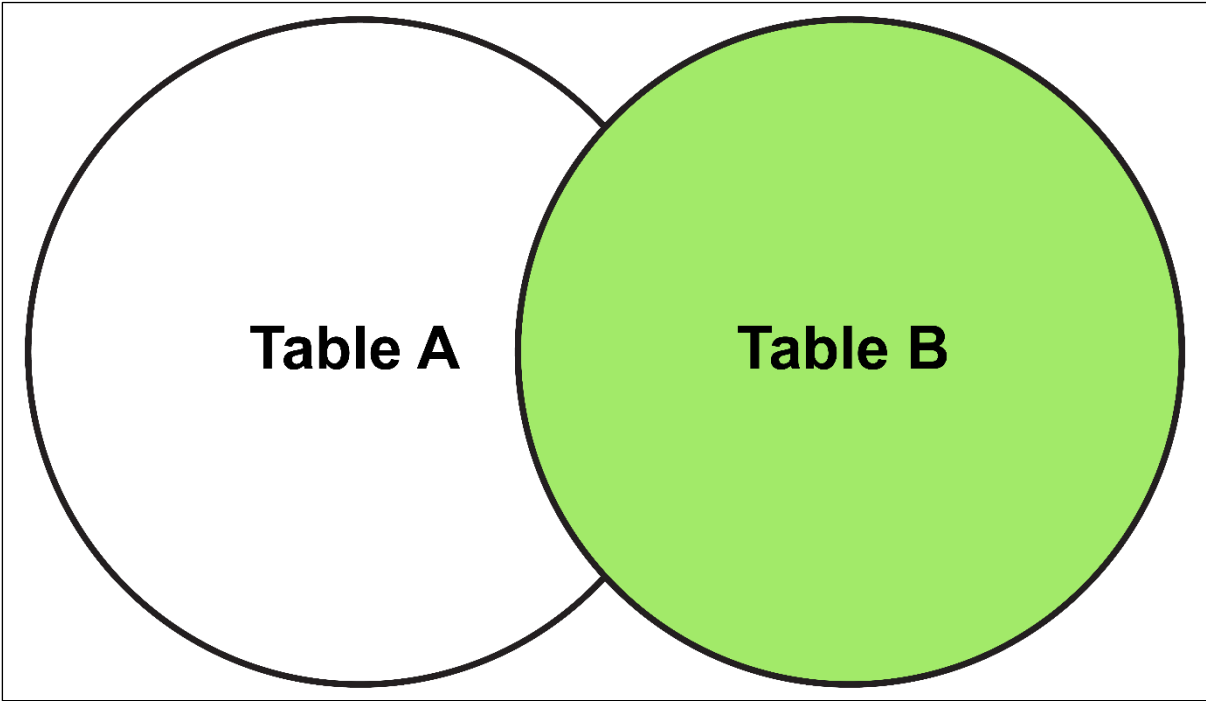
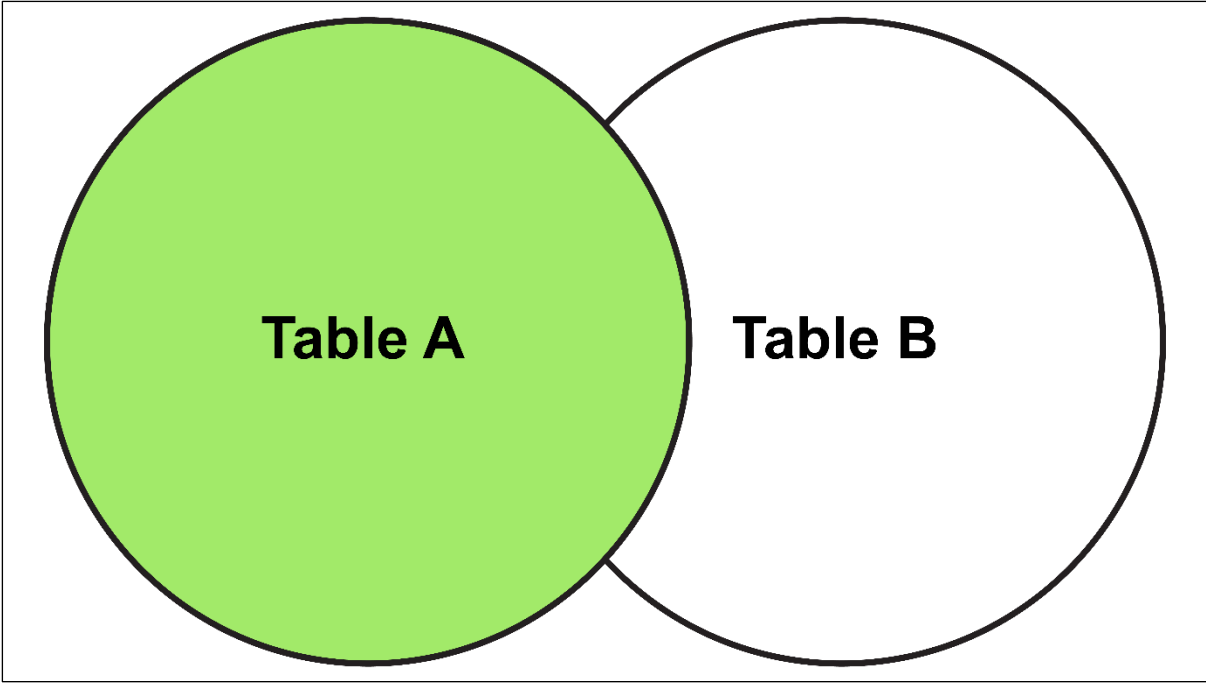
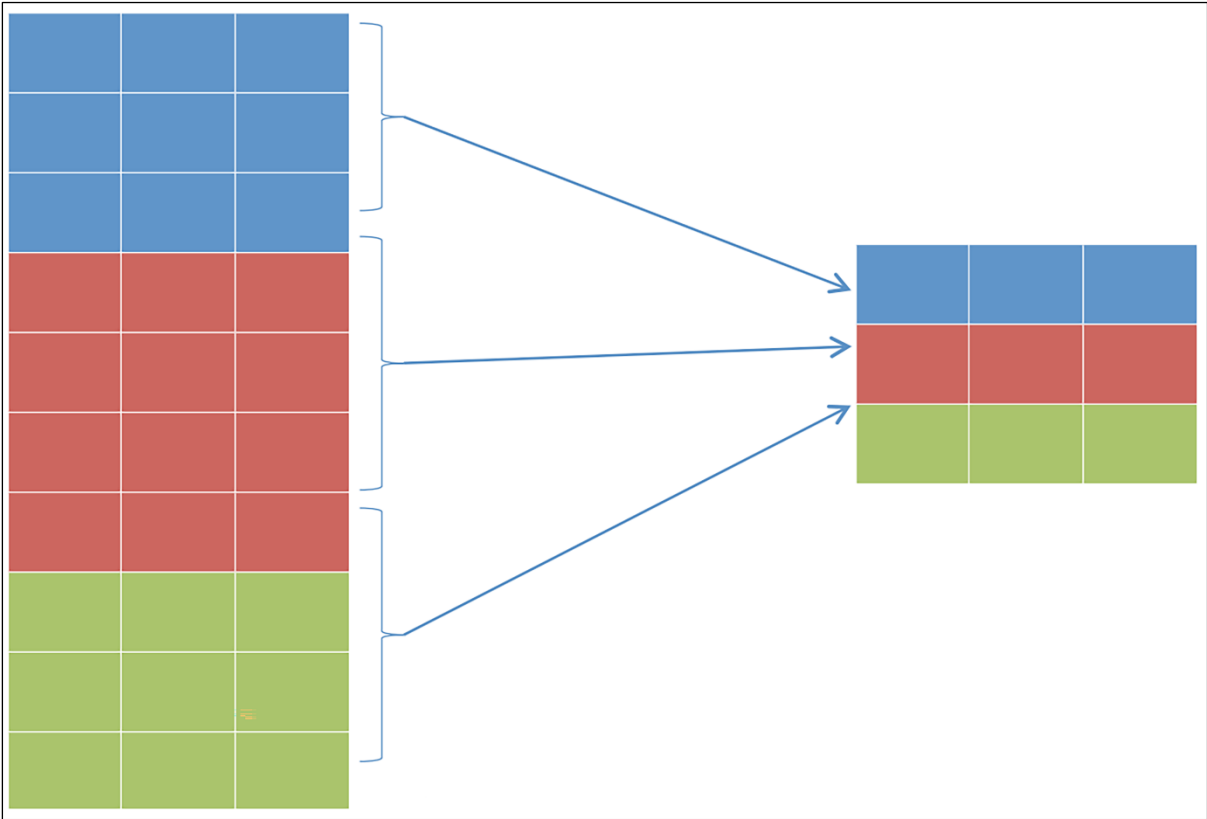
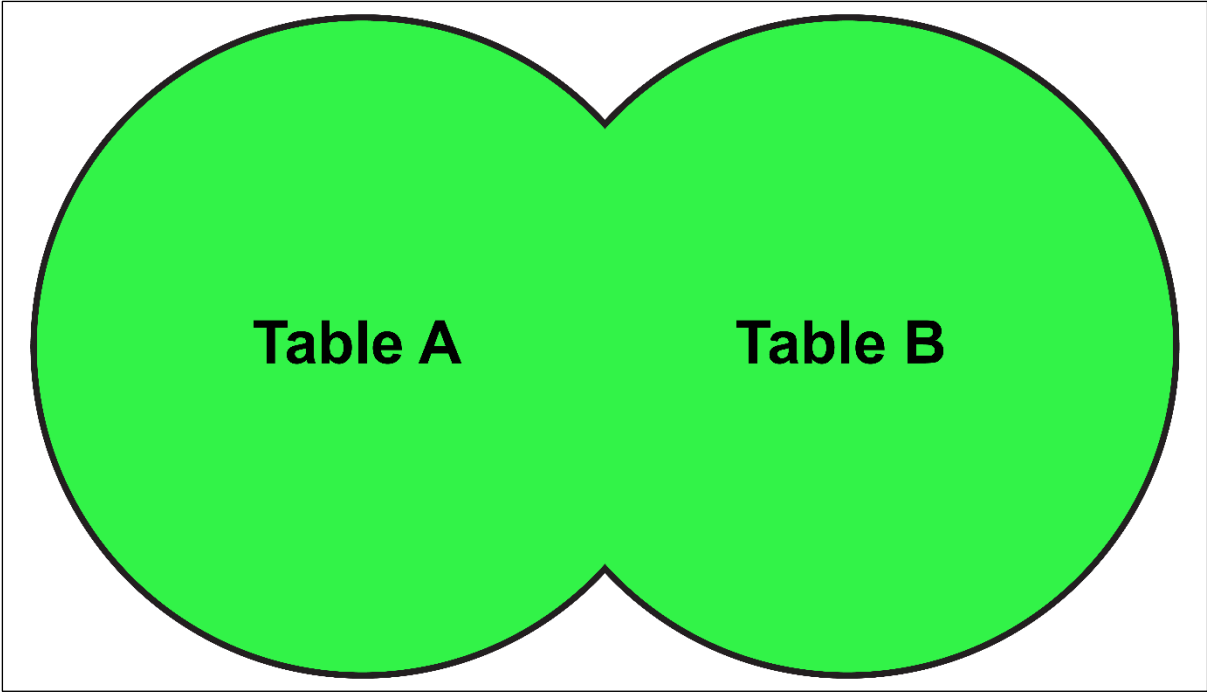


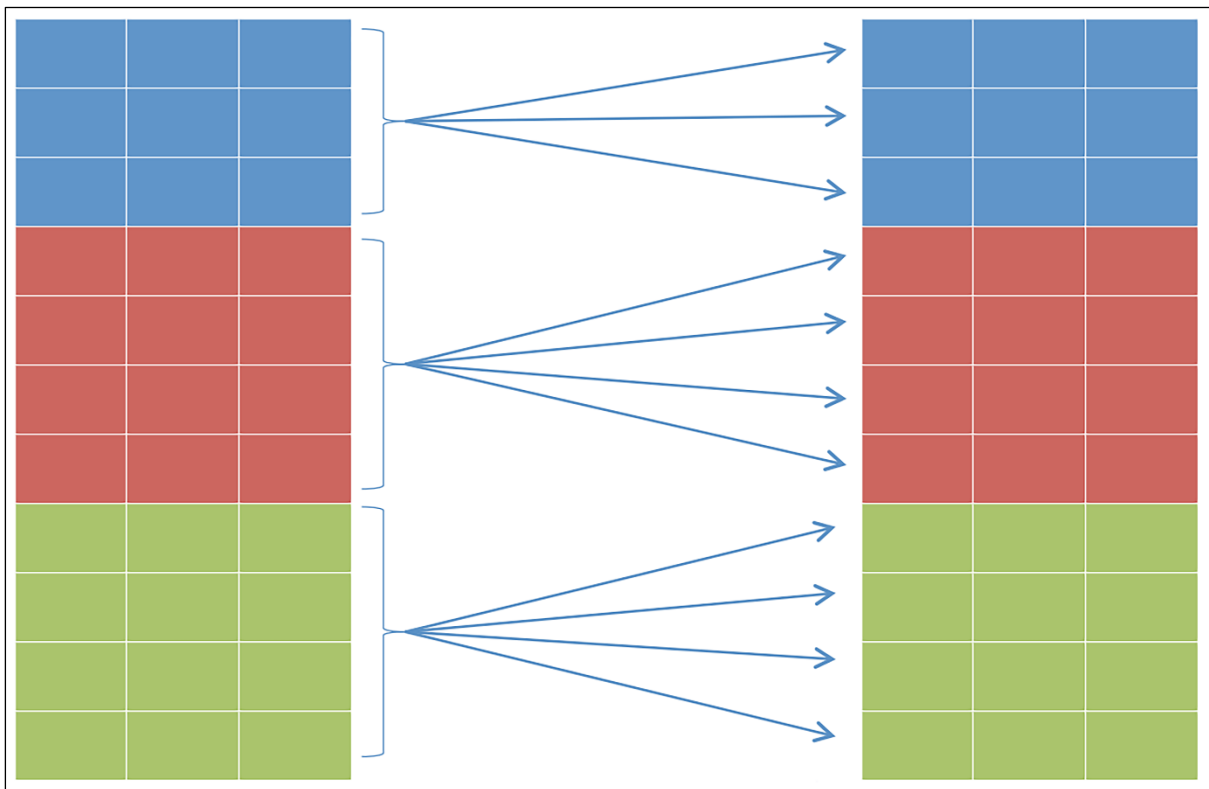
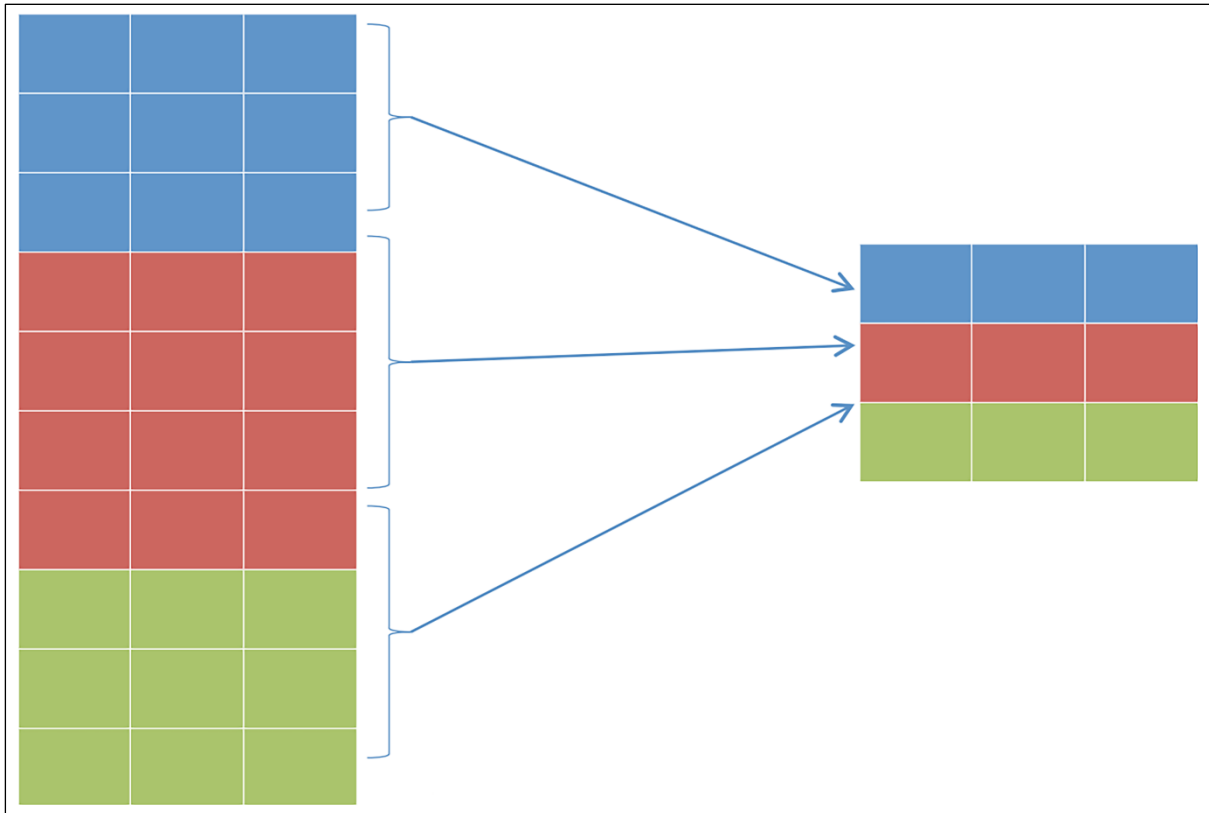
Chapter 5: Advanced Statements








Chapter 6: Window Functions




x	sum(x)
1	1
2	
3	
4	
5	




ORDER BY

STEP 1




UNBOUNDED PRECEDING




CURRENT ROW

x	sum(x)
1	1
2	3
3	
4	
5	




ORDER BY

STEP 2



UNBOUNDED PRECEDING



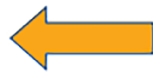
CURRENT ROW

STEP 5

x	sum(x)
1	1
2	3
3	6
4	10
5	15



UNBOUNDED PRECEDING

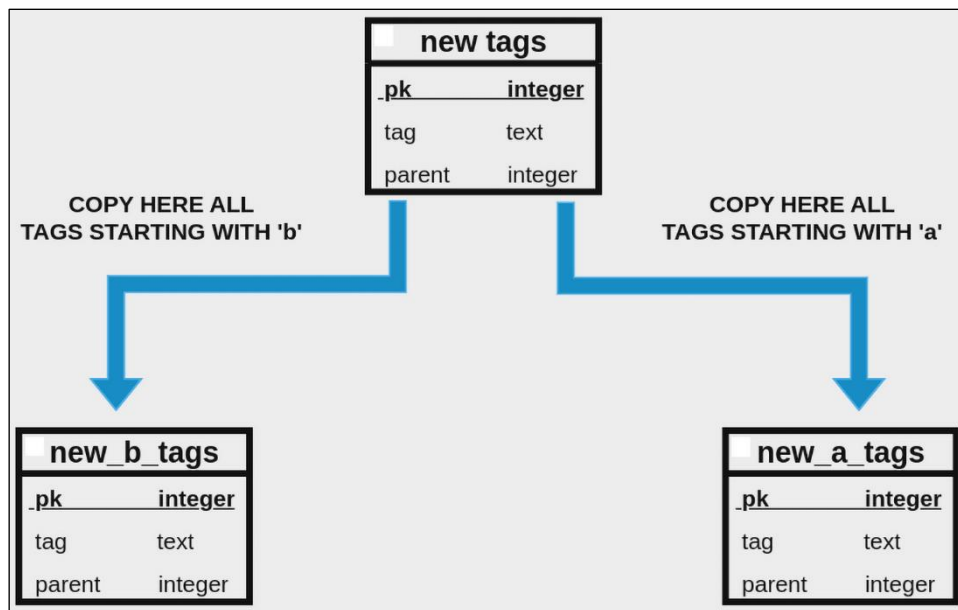


CURRENT ROW



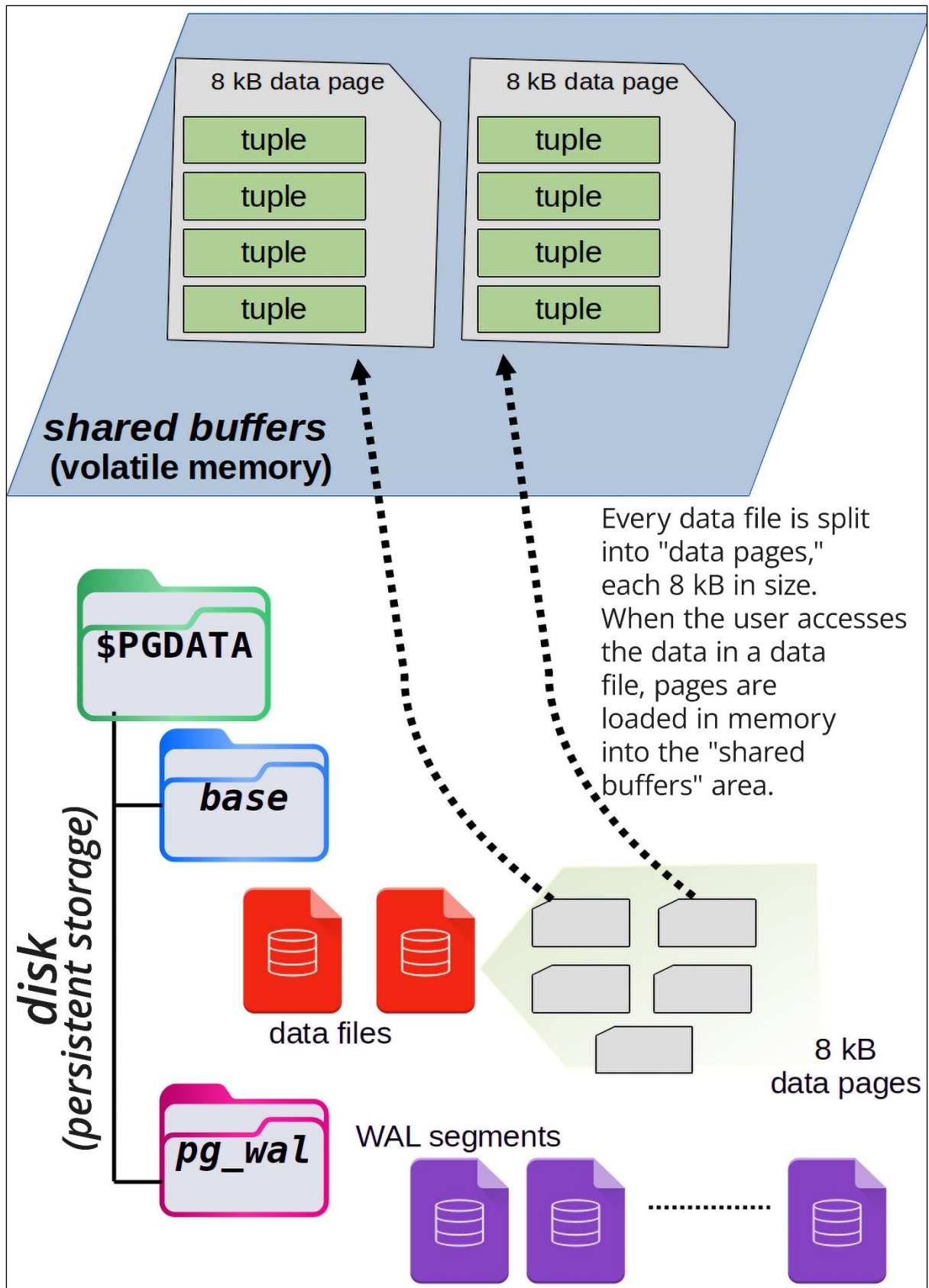
ORDER BY

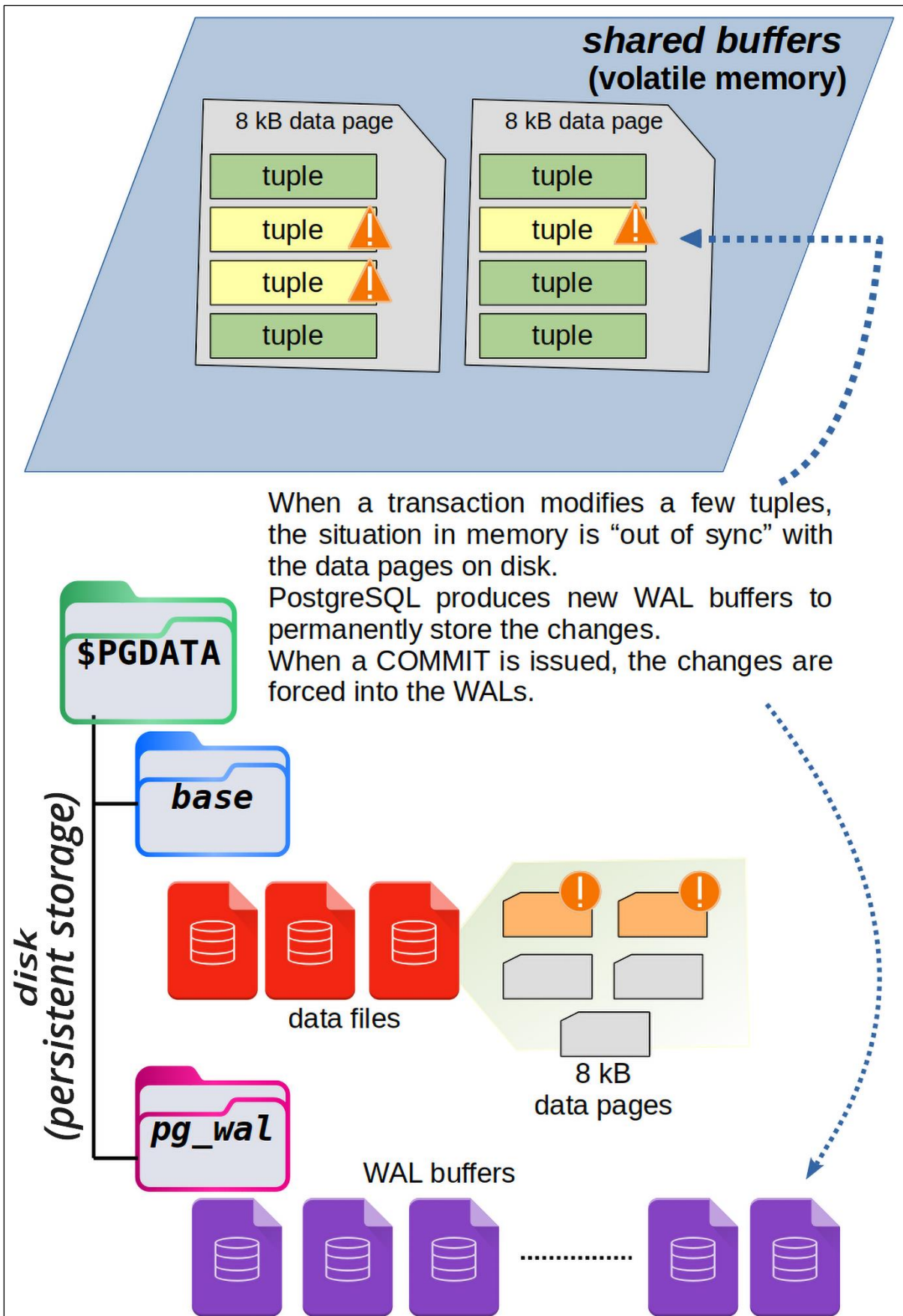
Chapter 8: Triggers and Rules

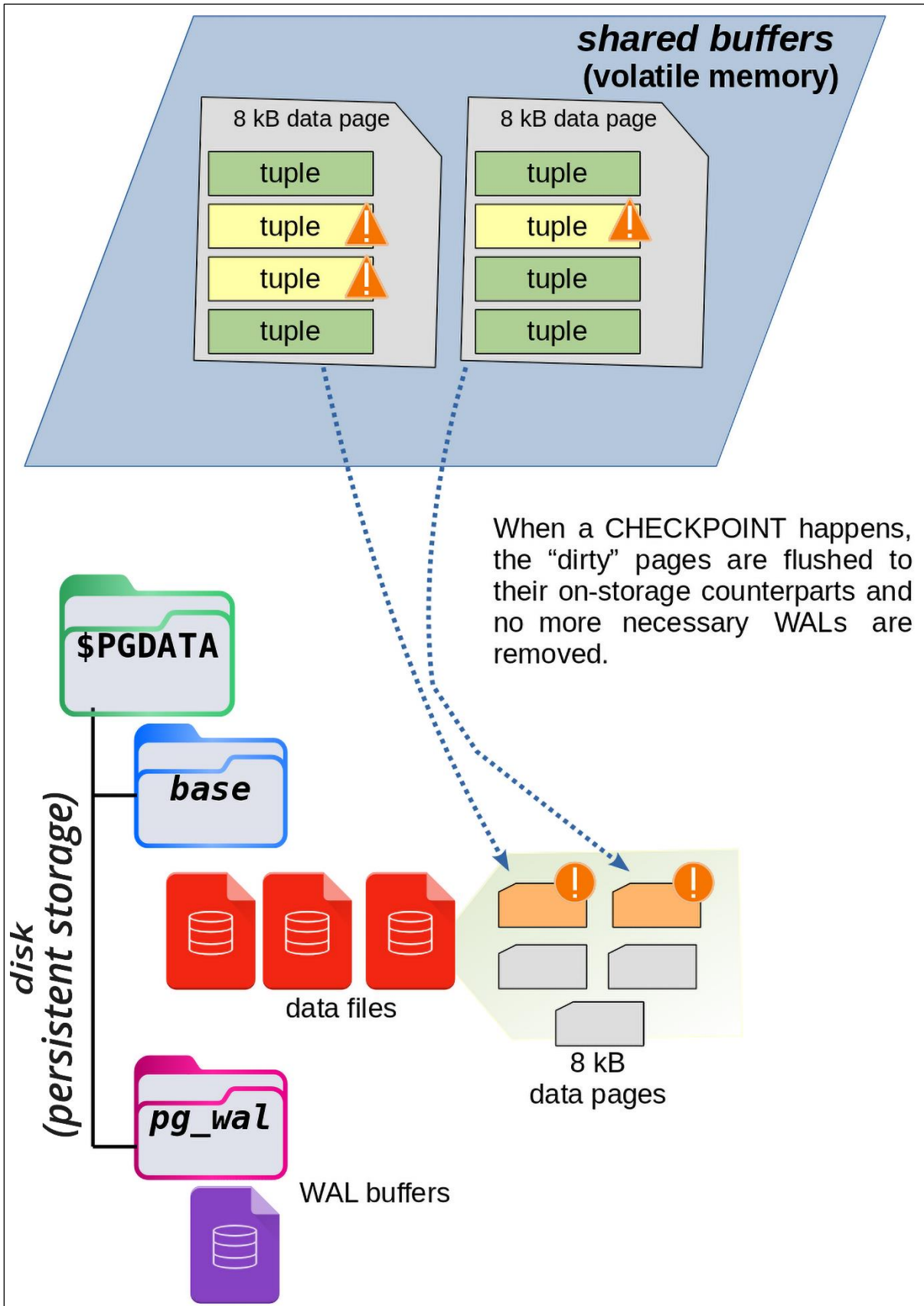


Chapter 11: Transactions, MVCC, WALs, and Checkpoints

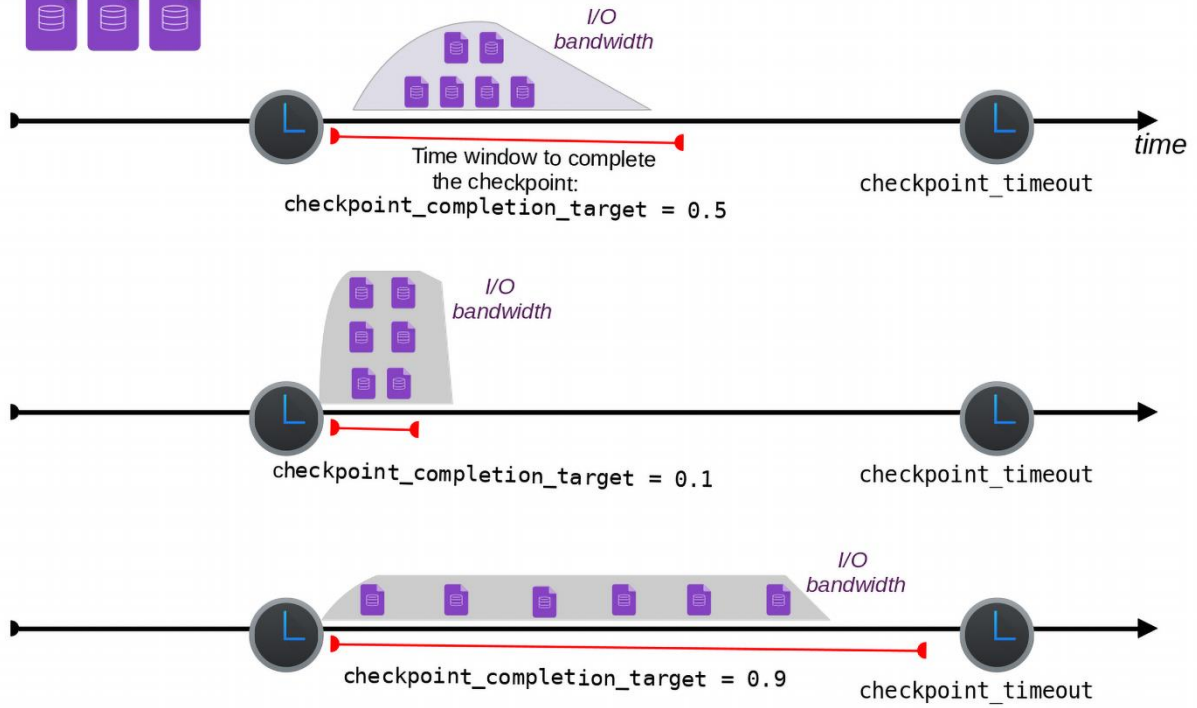


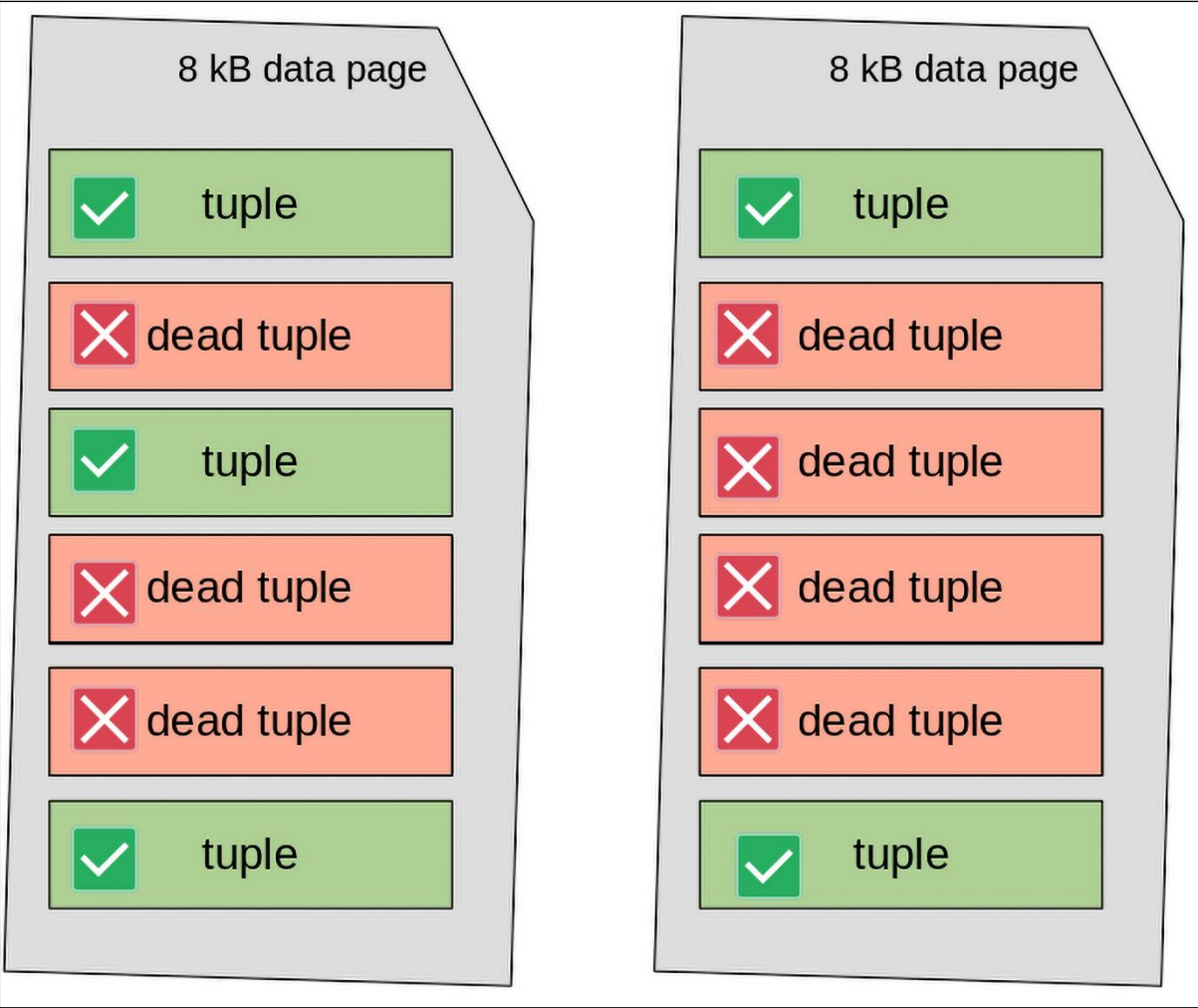


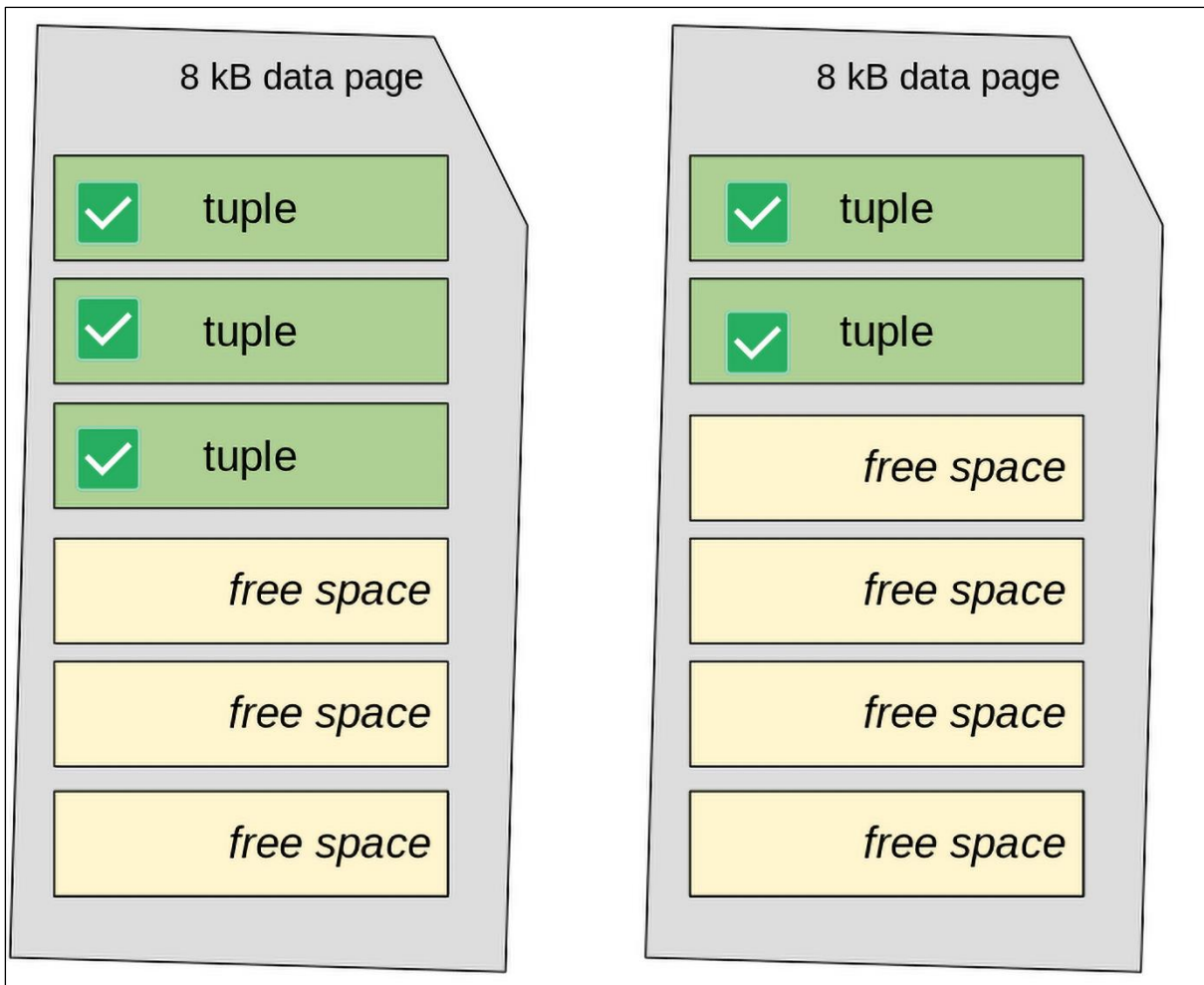


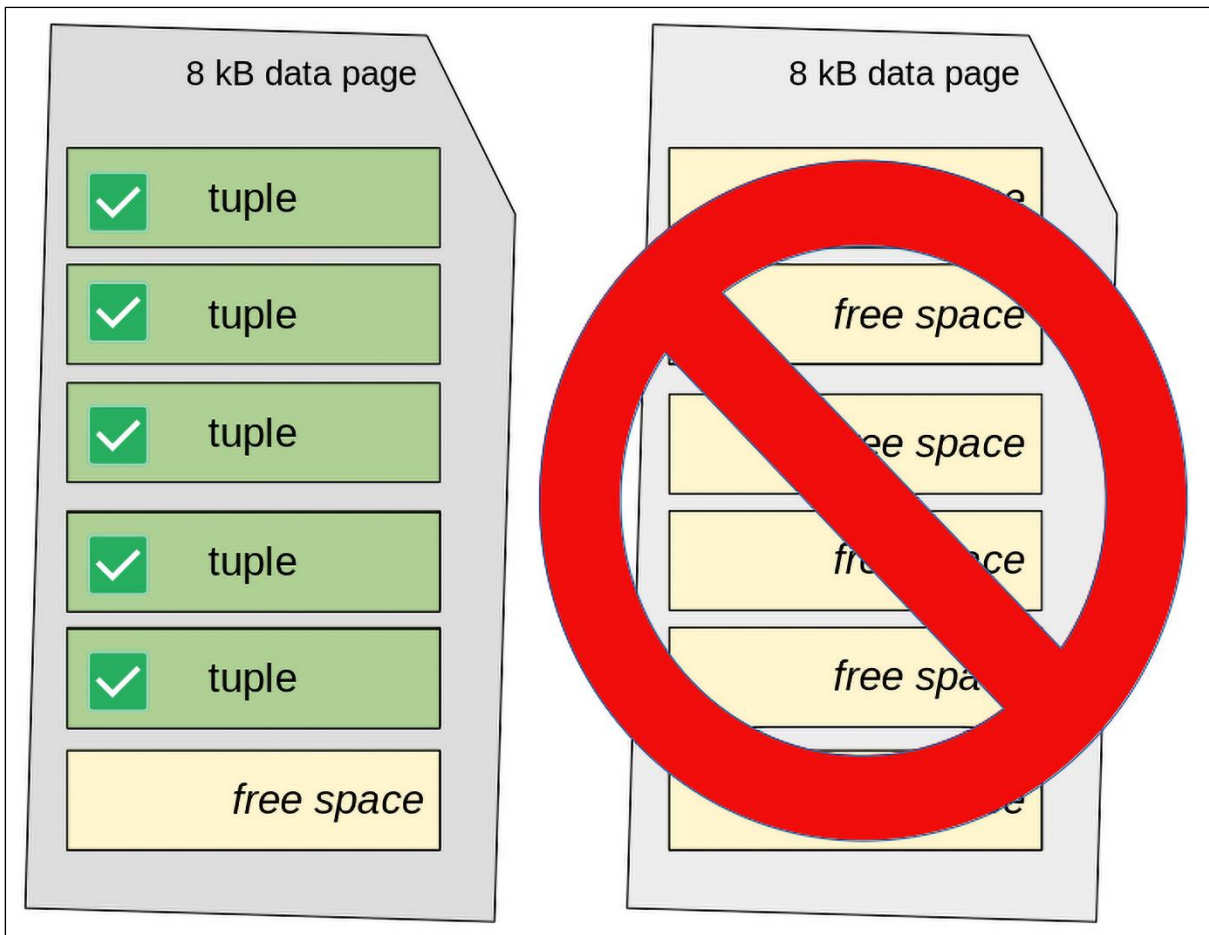


WAL files produced that
need to be flushed
at the next checkpoint

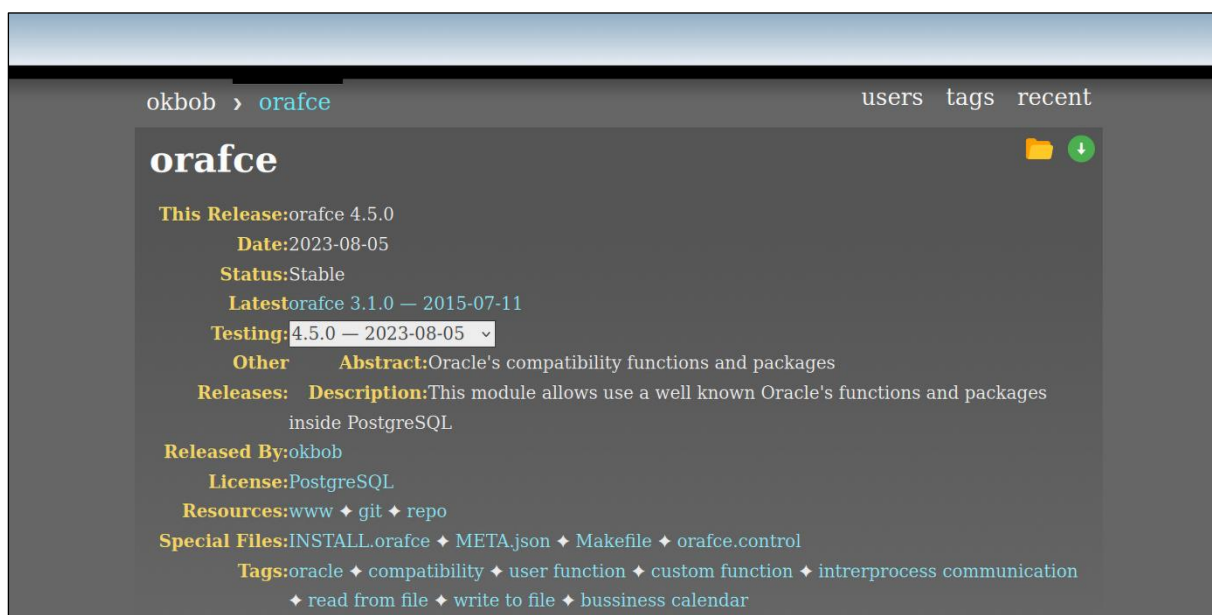
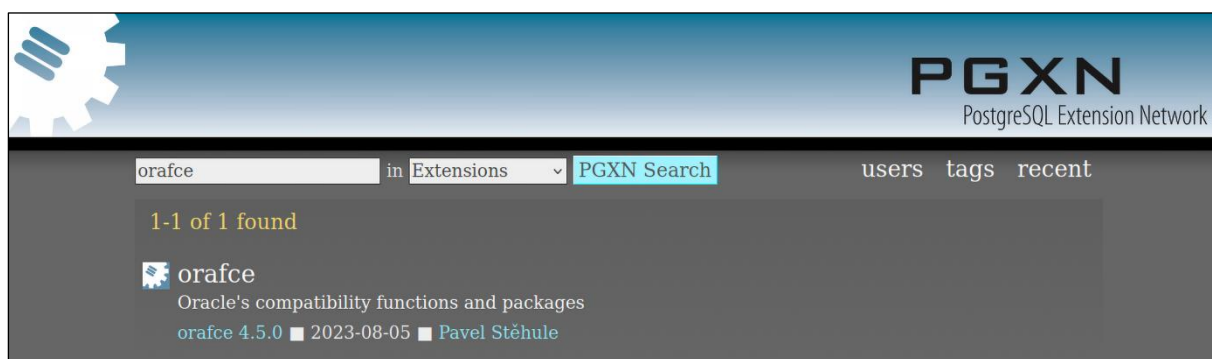




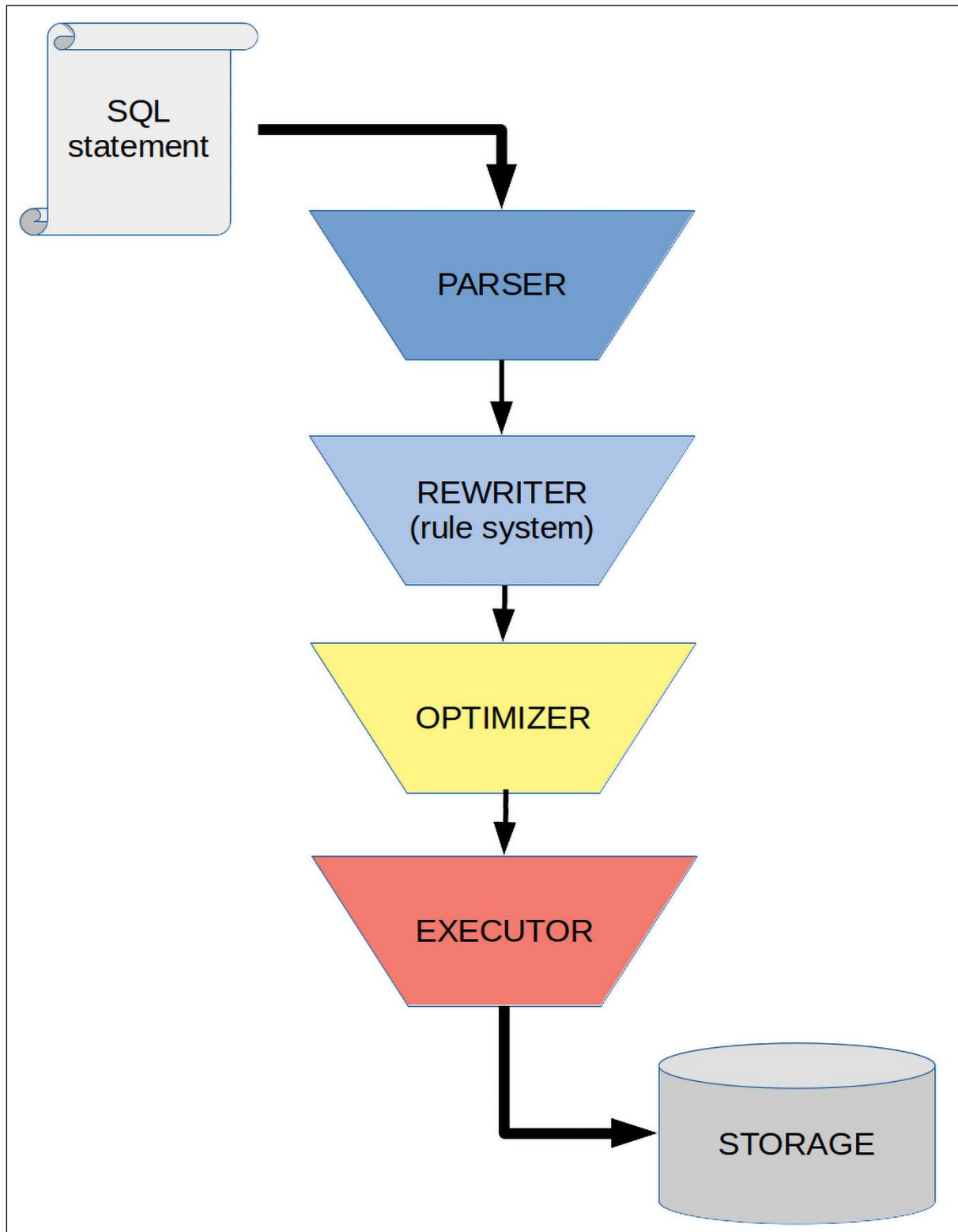




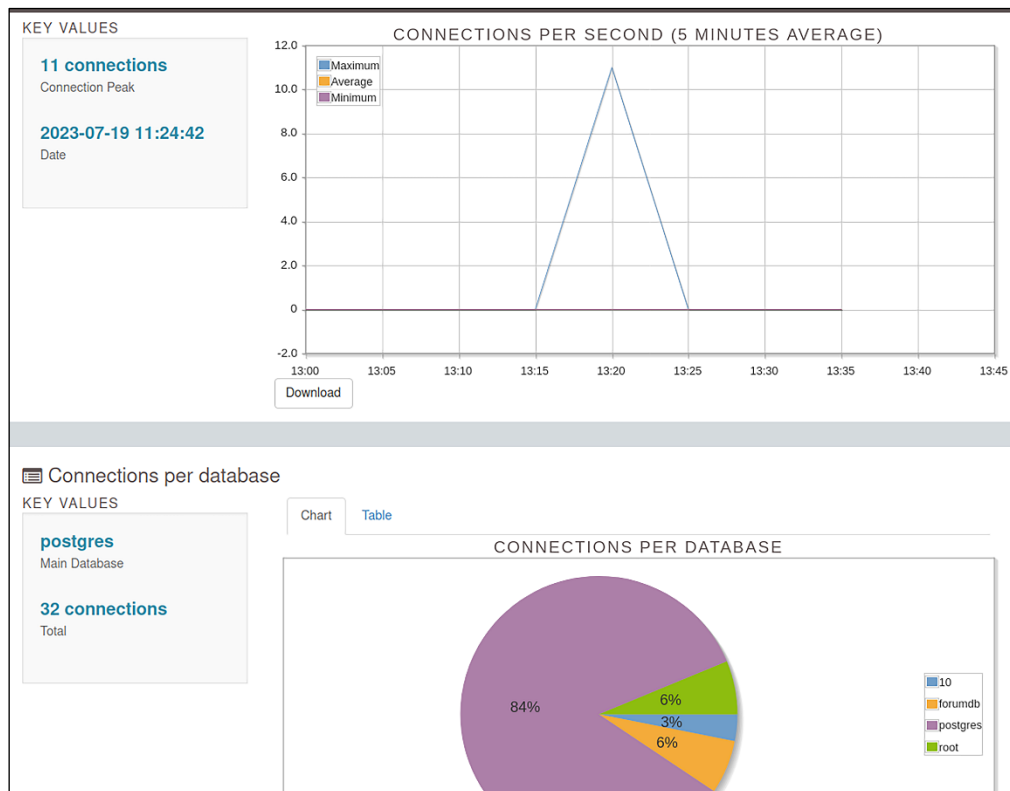
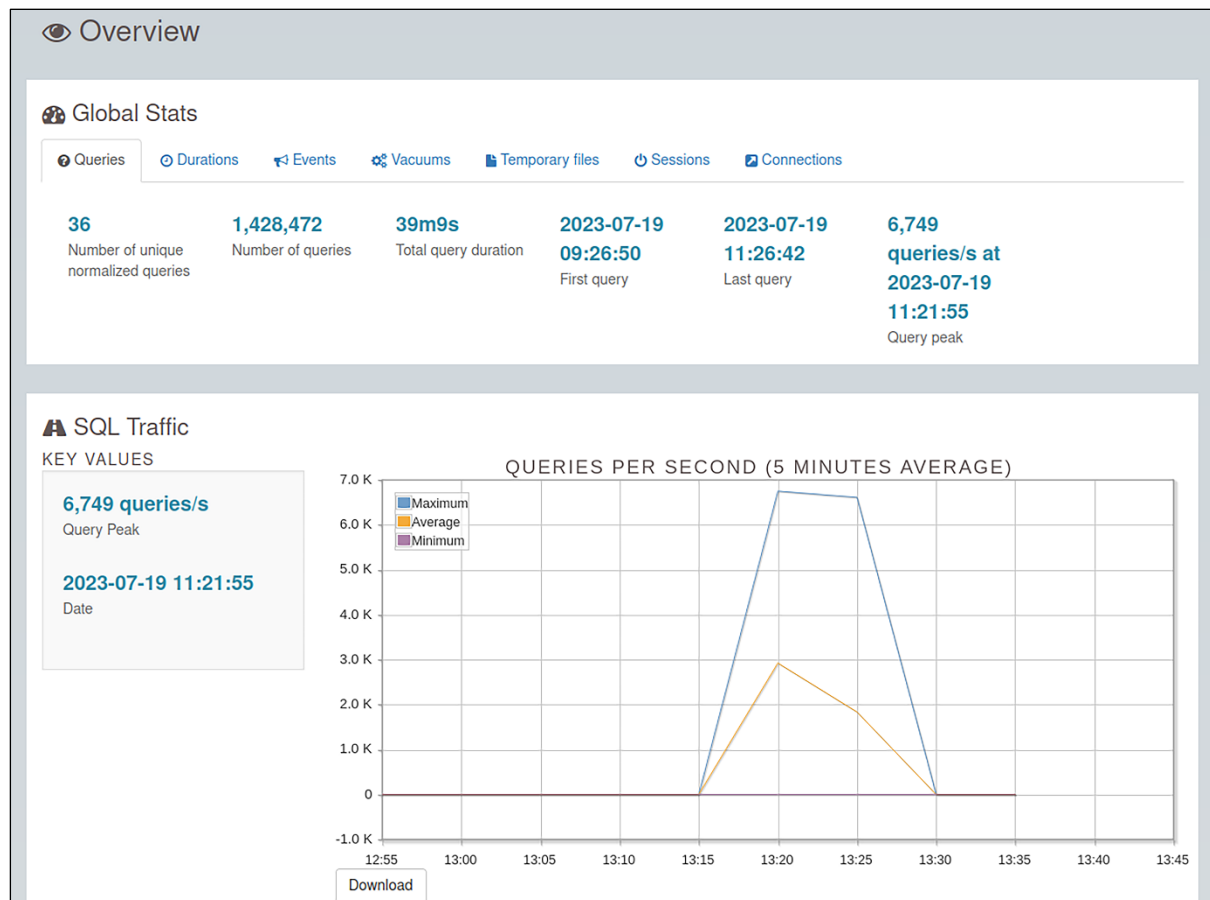
Chapter 12: Extending the Database- the Extension Ecosystem



Chapter 13: Query Tuning, Indexes, and Performance Optimization



Chapter 14: Logging and Auditing



Queries by type

KEY VALUES

204,114

Total read queries

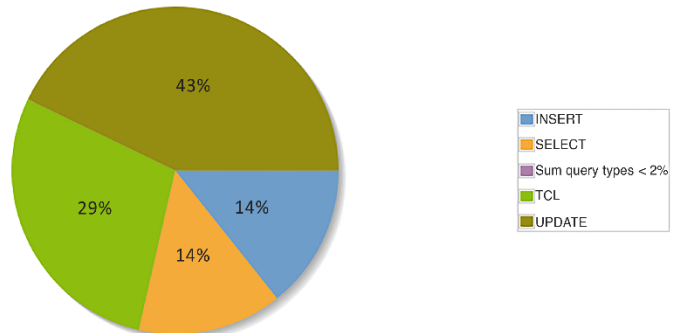
1,224,351

Total write queries

Chart

Table

TYPE OF QUERIES




Rank	Duration	Query
1	3s199ms	<div> SELECT count(*) FROM posts; </div> <div> [Date: 2020-04-17 17:23:42 - Database: forumdb - User: luca - Remote: 127.0.0.1 - Application: sql] </div>

Rank	Times executed	Total duration	Min duration	Max duration	Avg duration	Query
1	294 Details	4m56s	949ms	3s199ms	1s7ms	<div> SELECT count(*) FROM posts; </div> <div> Examples User(s) involved App(s) involved </div>
2	294 Details	169ms	0ms	5ms	0ms	<div> SELECT count(*) FROM tags; </div> <div> Examples User(s) involved App(s) involved </div>
3	73 Details	83ms	0ms	3ms	1ms	<div> ROLLBACK; </div> <div> Examples User(s) involved App(s) involved </div>
4	73 Details	2ms	0ms	0ms	0ms	<div> BEGIN; </div> <div> Examples User(s) involved App(s) involved </div>
5	67 Details	357ms	3ms	16ms	5ms	<div> TRUNCATE posts CASCADE; </div> <div> Examples User(s) involved App(s) involved </div>

Year 2023						
July						
	Su	Mo	Tu	We	Th	Fr
27						
28	02	03	04	05	06	07
29	09	10	11	12	13	14
30	16	17	18	19	20	21
31	23	24	25	26	27	28
32	30	31				

Chapter 16: Configuration and Monitoring



PostgreSQL
Configuration Builder

[Home](#) [Contribute](#) [Documentation](#)

Server

Operating system
GNU/Linux Based

Architecture
64 Bits (x86-64)

Storage type
SSD Storage

Number of CPUs
2

Total Memory (GB)
4

Max connections
100

Database

Application profile
General web applications

PostgreSQL Version
15 (Latest)

Profile Comparison

Export Config

Memory Configuration

	Default Value	WEB	OLTP	DW	MIXED	DESKTOP
> shared_buffers	128MB	1GB	1GB	1GB	512MB	256MB
> effective_cache_size	4GB	3GB	3GB	3GB	2GB	614MB
> work_mem	4MB	10MB	14MB	20MB	4MB	839KB
> maintenance_work_mem	64MB	205MB	205MB	205MB	102MB	41MB

Checkpoint Related Configuration

	Default Value	WEB	OLTP	DW	MIXED	DESKTOP
> min_wal_size	80MB	2GB	2GB	2GB	2GB	2GB
> max_wal_size	1GB	3GB	3GB	3GB	3GB	3GB

Profile Comparison

Export Config

Export Format

UNIX-like config file

Log Format

Comma-separated values

☒

Include PGBadger log configuration

Copy to clipboard

Generated by PGConfig 3.1.2 (5c1bbd5df8b2e1a63ef02bd759ef59016a923cc)

https://api.pgconfig.org/v1/tuning/get-config?format=conf&include_pgbadger=true&log_format=csvlog&max_connections=100&pg_version=16&environment_name=WEB&total_ram=4GB

Memory Configuration

shared_buffers = 1GB

effective_cache_size = 3GB

work_mem = 10MB

maintenance_work_mem = 205MB

Checkpoint Related Configuration

min_wal_size = 2GB

max_wal_size = 3GB

checkpoint_completion_target = 0.9

wal_buffers = -1

Network Related Configuration

listen_addresses = '*'

max_connections = 100

Storage Configuration

random_page_cost = 1.1

effective_io_concurrency = 200

Worker Processes Configuration

max_worker_processes = 8

max_parallel_workers_per_gather = 2

max_parallel_workers = 2

Logging configuration for pgbadger

logging_collector = on

log_checkpoints = on

log_connections = on

log_disconnections = on

log_lock_waits = on

log_temp_files = 0

lc_messages = 'C'

Adjust the minimum time to collect the data

log_min_duration_statement = '10s'

log_autovacuum_min_duration = 0

CSV Configuration

log_destination = 'csvlog'

Profile Comparison

Export Config

Export Format

ALTER SYSTEM commands

Log Format

Comma-separated values

☒

Include PGBadger log configuration

Copy to clipboard

-- Generated by PGConfig 3.1.2 (5c1bbd5df8b2e1a63ef02bd759ef59016a923cc)

-- https://api.pgconfig.org/v1/tuning/get-config?format=alter_system&include_pgbadger=true&log_format=csvlog&max_connections=100&pg_version=16&environment_name=WEB&total_ram=4GB

-- Memory Configuration

ALTER SYSTEM SET shared_buffers TO '1GB';

ALTER SYSTEM SET effective_cache_size TO '3GB';

ALTER SYSTEM SET work_mem TO '10MB';

ALTER SYSTEM SET maintenance_work_mem TO '205MB';

-- Checkpoint Related Configuration

ALTER SYSTEM SET min_wal_size TO '2GB';

ALTER SYSTEM SET max_wal_size TO '3GB';

ALTER SYSTEM SET checkpoint_completion_target TO '0.9';

ALTER SYSTEM SET wal_buffers TO '-1';

-- Network Related Configuration

ALTER SYSTEM SET listen_addresses TO '*';

ALTER SYSTEM SET max_connections TO '100';

-- Storage Configuration

ALTER SYSTEM SET random_page_cost TO '1.1';

ALTER SYSTEM SET effective_io_concurrency TO '200';

-- Worker Processes Configuration

ALTER SYSTEM SET max_worker_processes TO '8';

ALTER SYSTEM SET max_parallel_workers_per_gather TO '2';

ALTER SYSTEM SET max_parallel_workers TO '2';

-- Logging configuration for pgbadger

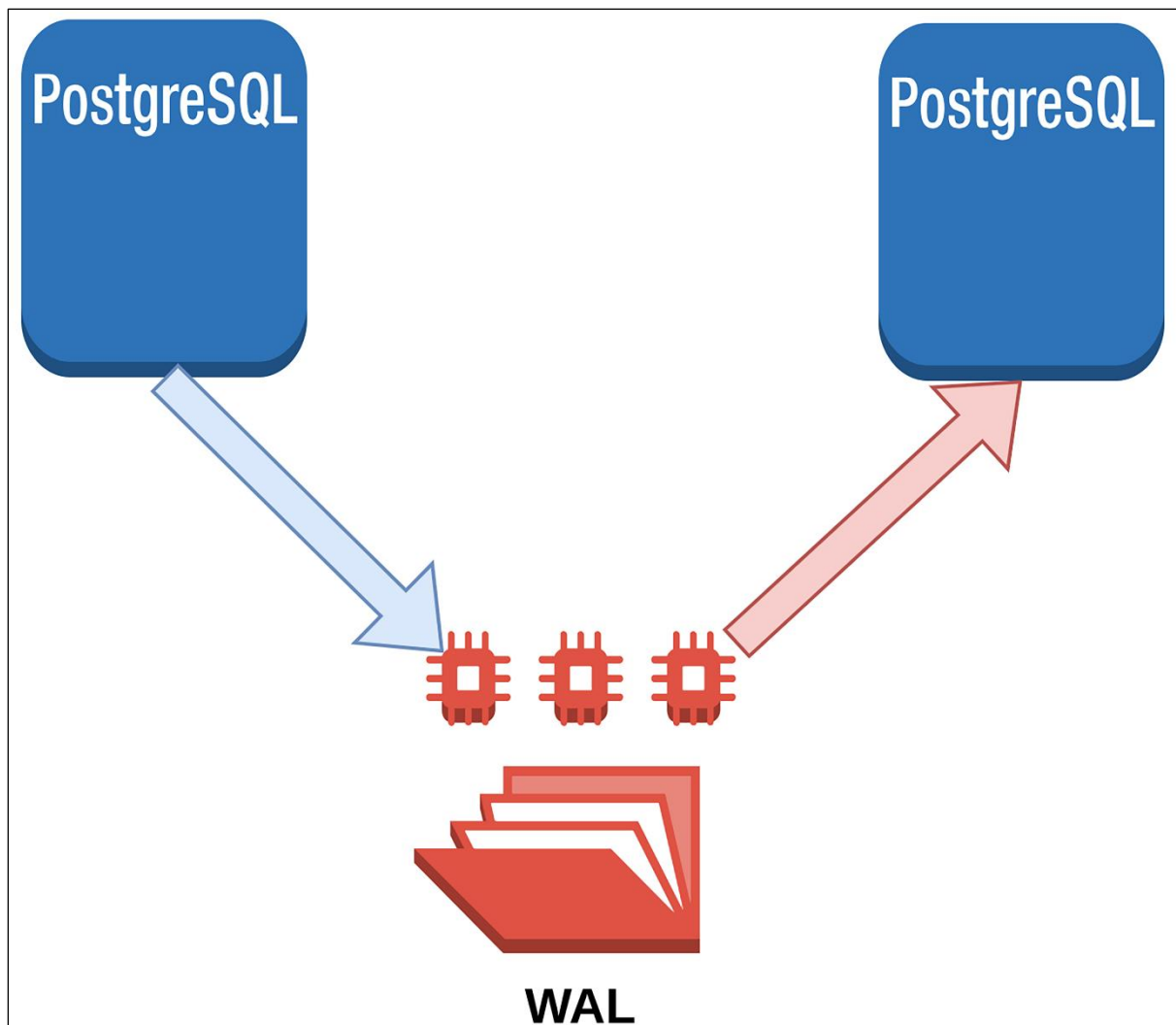
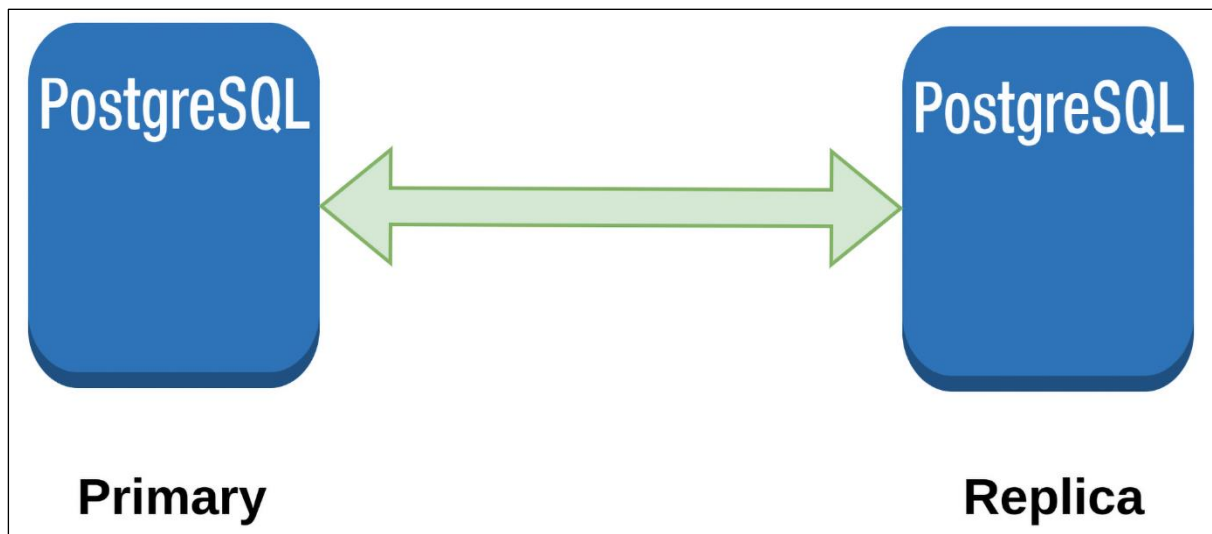
ALTER SYSTEM SET logging_collector TO 'on';

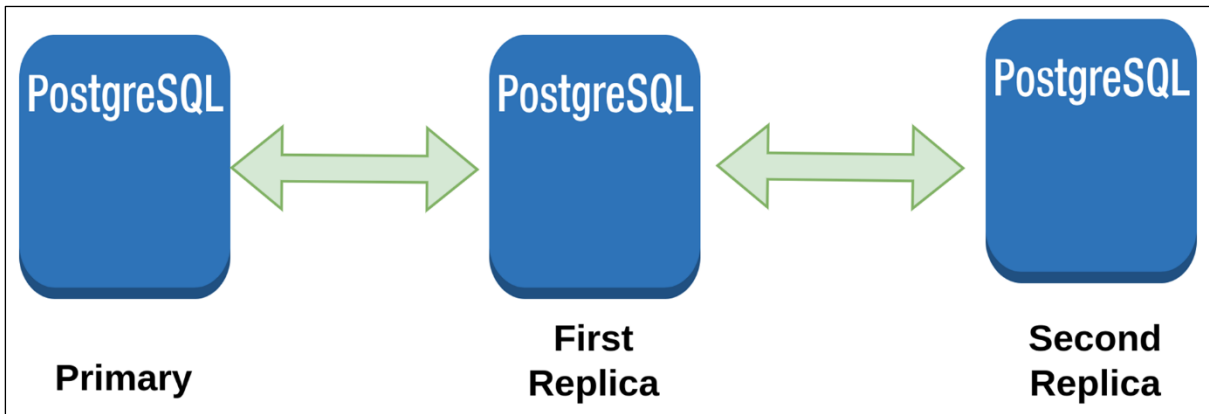
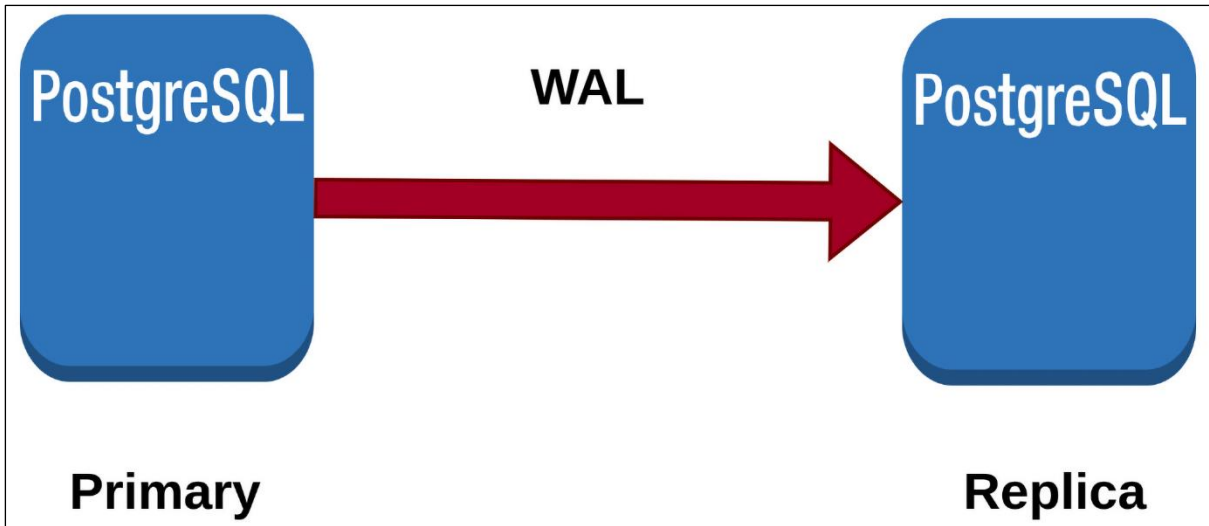
ALTER SYSTEM SET log_checkpoints TO 'on';

ALTER SYSTEM SET log_connections TO 'on';

ALTER SYSTEM SET log_disconnections TO 'on';

Chapter 17: Physical Replication





Chapter 18: Logical Replication

