PostgreSQL Intermediate

Querying

- SELECT DISTINCT
  - Distinct on single and multiple columns
  - Partial distinct
- CASE Clause
  - Simple CASE usage
  - Combining CASE with order
- COALESCE Clause
  - Simple COALESCE usage
- Type Casting
  - Simple type casting
  - Shortcut operator
- UNION Clause
  - UNION vs UNION ALL
  - Ordering in UNION

Transactions

- General usage
  - BEGIN / COMMIT / ROLLBACK
  - Auto-commit by libraries
  - Concurrent updates
  - Potential locks and dead locks
- To Read
  - https://www.postgresql.org/docs/10/tutorial-transactions.html
  - https://www.tutorialspoint.com/postgresql/postgresql_transactions.htm

Data Types

- Common Data Types
  - General types overview
  - Boolean and its values
- String Types
  - CHAR, VARCHAR, TEXT
  - Common functions
- Numeric Types
  - INTEGER, NUMERIC, FLOAT
  - SMALLINT, BIGINT, REAL
  - Common functions
- Temporal Types
  - DATE, TIME, TIMESTAMP, TIMESTAMPTZ, INTERVAL
  - Operations with temporal data
  - Importance of timezone
  - Common functions
- Arrays
  - Simple array type
  - Search in array
  - Expanding array to rows
  - Regular array functions
- JSON / JSONB

- ○ Accessing JSON as object
- ○ Accessing JSON as text
- ○ Using JSON in WHERE
- ○ Regular JSON functions
- ● ENUM Types
  - ○ When to use
  - ○ Difference to VARCHAR with CHECK
- ● Composite Types
  - ○ When to use

Managing Tables
- ● CREATE TABLE
  - ○ Simple create
  - ○ NOT NULL constraint
  - ○ UNIQUE constraint (single column, multiple columns)
  - ○ CHECK constraint
  - ○ DEFAULT value
- ● PRIMARY KEY
  - ○ Which constraints apply
  - ○ SERIAL / IDENTITY columns
- ● FOREIGN KEY
  - ○ Purpose of usage
  - ○ ON DELETE / ON UPDATE
- ● ALTER TABLE
  - ○ Add column
  - ○ Remove column
  - ○ Change column data type
  - ○ Rename column
  - ○ Rename table
- ● DROP TABLE
  - ○ Regular drop
  - ○ Cascade drop
- ● Temporary Tables
  - ○ When to use
  - ○ Who sees the table
  - ○ When is it dropped
- ● SELECT INTO / CREATE TABLE AS
  - ○ General usage
  - ○ Usage with temporary tables

Indexes
- ● CREATE INDEX
  - ○ Single column indexes
  - ○ Multi-column indexes
  - ○ Unique indexes
- ● Indexes Usage
  - ○ Usage in WHERE / ORDER BY
  - ○ Mix of multiple indexes
  - ○ When indexes are applied
  - ○ Drawback of indexes

- To Read
  - https://www.postgresql.org/docs/9.1/indexes.html
  - https://www.tutorialspoint.com/postgresql/postgresql_indexes.htm
  - https://www.postgresql.org/docs/9.1/sql-createindex.html

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