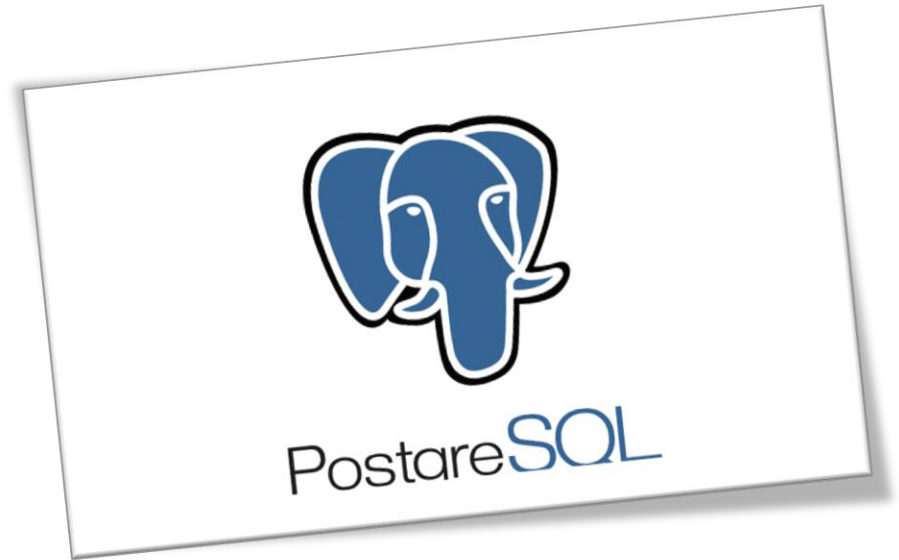# Advanced Database

COMP412

CHAPTER:03 PSQL

# Introduction

o psql is the de rigueur command-line utility packaged with PostgreSQL.

◦ you can use psql to execute scripts,

◦ import and export data,

◦ restore tables,

◦ and do other database administration,

o If you have access only to a server's command line with no GUI, psql is your only choice to interact with PostgreSQL.

# Environment Variables

o The file .pgpass in a user's home directory can contain passwords to be used if the connection requires a password.

o On Microsoft Windows the file named %APPDATA%\postgresql\pgpass.conf.

o This file should contain lines of the following format:
  ◦ hostname:port:database:username:password

# Interactive versus Noninteractive psql

CONTROL OPERATIONS OF A POSTGRESQL SERVER

# Interactive versus Noninteractive psql

o Run psql interactively by typing psql from your OS command line.

o Begin typing in commands. For SQL statements, terminate with a semicolon. If you press Enter without a semicolon, psql will assume that your statement continues to the next line.

o Typing \?" while in the psql console brings up a list of available commands.

◦ psql -d postgresql_book -c "DROP TABLE IF EXISTS dross; CREATE SCHEMA staging;"

# Interactive versus Noninteractive psql

o To run commands repeatedly or in a sequence, you're better off creating a script first and then running it using psql noninteractively.

o At your OS prompt, type psql followed by the name of the script file.
   ◦ psql -f some_script_file

# Importing and Exporting Data

# Importing and Exporting Data

o psql has a \copy command that lets you import data from and export data to a text file.

o The tab is the default delimiter, but you can specify others.

o Newline breaks must separate the rows.

# psql Export

o You can export selected rows from a table.

o Use the psql \copy command to export.
  \connect postgresql_book
  \copy (SELECT * FROM staging.factfinder_import WHERE
  TO '/test.tab'
  WITH DELIMITER E'\t' CSV HEADER

# psql Import

o Before bringing the data into PostgreSQL, you must first create a table to store the incoming data.

o The data must match the file both in the number of columns and in data types.

o psql processes the entire import as a single transaction; if it encounters any errors in the data, the entire import fails.

# psql Import

o Importing data using the \copy command.

o If your file has nonstandard delimiters such as pipes, indicate the delimiter as follows:
  - ◦ \copy sometable FROM somefile.txt DELIMITER '|';


o During import, you can replace null values with something of your own choosing by adding a NULL AS, as in the following:
  - ◦ \copy sometable FROM somefile.txt NULL As '';