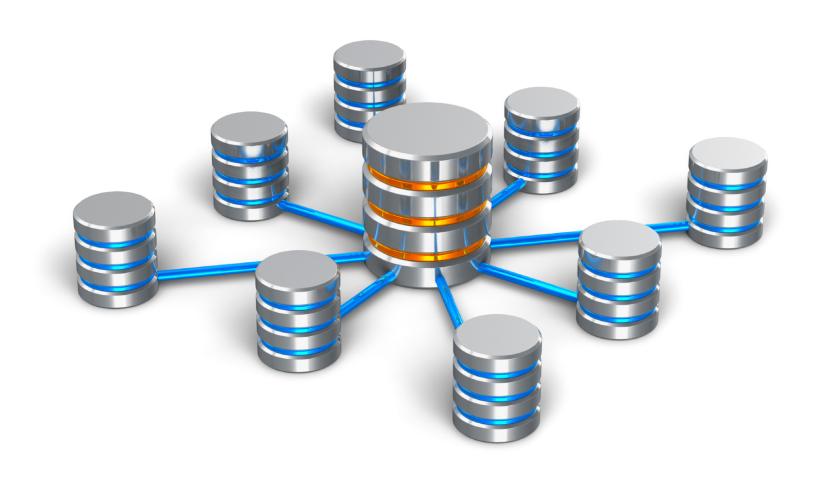
CSE 180 - Lab 4

Stored Functions



Dev November 2023, Section 9

Logistics

- Lab 4 Due 11:59 PM, Tuesday December 5
- Final in less than two weeks!



Functions in runNewspaperApplication

- increaseSomeRates(PGconn *conn, int maxTotalRateIncrease):
 - Returns: The value returned by stored function increaseSomeRatesFunction
 - Arguments: int maxTotalRateIncrease
 - Calls the stored function

Stored Function

```
increaseSomeRatesFunction(maxTotalRateIncrease INTEGER):
iterates through the subscriptionKinds for rate increase
- increase 10 if popularity ≥ 5
- increase 5 if 3 ≤ popularity < 5
- increase 3 if 2 ≤ popularity < 3
- increase 0 if 0 ≤ popularity < 2
- total increase cannot exceed maxTotalRateIncrease
Updates only if the total does not exceed maximum allowed. Returns total increase.</pre>
```

Creating Functions in PL/pgSQL

```
[ <<label>> ]
[ DECLARE

    declarations ]
BEGIN

    statements
END [ label ];
```

Assignment Operators

In PostgreSQL, Assignment operator is := and equality is =

```
rating = 'h'; //checks if rating is h
rating := 'h'; //sets rating to h
```

Type is specified after variable name

```
profits INTEGER;
```

Cursors

• Cursors get the result of a query a few rows at a time, they iterate

```
DECLARE
    curs3 CURSOR FOR SELECT * FROM student WHERE studentID > 25;

FETCH [ direction { FROM | IN } ] cursor INTO target;
```

https://www.postgresql.org/docs/current/plpgsql-cursors.html

Conditionals

```
IF boolean-expression THEN
    statements
[ ELSIF boolean-expression THEN
    statements
[ ELSIF boolean-expression THEN
    statements
  ELSE
    statements ]
END IF;
```

Loops

• Unconditional LOOP, FOR, WHILE, FOREACH

For unconditional loops, you need to use EXIT, CONTINUE,

```
[ <<label>> ]
FOR name IN expression LOOP
    statements
END LOOP [ label ];
```

Debugging

RAISE NOTICE Syntax

RAISE NOTICE 'Increased Rates by %', rateIncrease;

Calling a Stored Function

```
\i increaseSomeRatesFunction.pgsql
CREATE FUNCTION
```

```
SELECT increaseSomeRates(20);
```