Reporting with SQL Part 2 Notes

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1 What Are Functions?

- Prsents data differently through manipulation
- **Syntax:** *function name*(*value or column*)
- e.g. LENGTH(), UPPER("Andrew Chalkley"), SUM()

2 Adding Text Columns Together

- **Snytax:** SELECT *value or column ||value or column ||value or column* FROM *table name*;
- $||\rightarrow$ concat operator

Example:

```
1    SELECT first_name || " " || last_name AS "Full Name",
2            email AS "Email", phone AS "Phone"
3            FROM customers;
4
```

Full Name	Email	Phone
Lauren Chalkley	Lauren.Chalkley@example.com	(601)-555-8510
Dave McFarland	Dave.McFarland@example.com	(675)-555-4108
Pasan Premaratne	pdawg@example.com	(898)-555-3719
Andrew Chalkley	Andrew@teamtreehouse.com	(798)-555-8112
Rachael Hinkley	Rachael.Hinkley@example.com	(645)-555-2397

3 Single vs Double Quotes

- Exists difference in use

- Single Quote → for string literlas (e.g. 'lbs')

- Double Quote → for column aliases (e.g. "Max Weight")

Example:

```
1    SELECT maximum_weight || 'lbs' AS "Max Weight" FROM ELEVATOR_DATA;
2
```

4 Exercise 1

- Solution included in *exercise_1.sql*

5 Finding the Length of Text

- **Syntax:** SELECT LENGTH(*value or column*) FROM *table name*;

- Returns length of a value or value in each row of a column

- Can also be used in WHERE

  - **Syntax:** SELECT *columns* FROM *table name* WHERE LENGTH(*column name*) *operator value*;

Example:

```
1    SELECT username, LENGTH(username) AS "length" from customers ORDER
     BY length DESC LIMIT 1;
2
3
4    SELECT username FROM customers WHERE LENGTH(username) < 7;
5
6
7    SELECT username LENGTH(username) AS "length" FROM customers WHERE
     length < 7;
8
```

username	length
poley_hands	11

6   Exercise 2

- Solution included in *exercise_2.sql*

7   Changing the Case of Text Columns

- **Syntax (Upper):** SELECT UPPER(*value or column*) FROM *table name*;

- **Syntax (Lower):** SELECT LOWER(*value or column*) FROM *table name*;

- Returns values in a column in upper or lower case

- Search can be made case insensitive

    - SELECT *column* FROM *table name* WHERE LOWER(*column name*) = *value in lowercase*;

Example:

```
1   SELECT * FROM customers WHERE LOWER(email) = "andrew@teamtreehouse
    .com";
2
```

8   Exercise 3

- Solution included in *exercise_3.sql*

9 Creating Excerpts From Text

- SUBSTR

  - **Syntax:** SELECT SUBSTR(*value or column, start, length*) FROM *table name*;
  - Allows to create ellipsis
    * Prevents website from being overloaded with details

  ### Example:

```
1    SELECT name SUBSTR(description, 1, 50) || "..." AS
     short_description, price FROM products;
2
```

10 Exericse 4

- Solution included in *exercise_4.sql*

11 Replacing Portions of Text

- **Syntax:** SELECT REPLACE(*original value or column name, target string, replacement string*) FROM *table name*;

  ### Example:

```
1    SELECT street, city REPLACE(state, "California", "CA") zip FROM
     addresses
2        WHERE REPLACE(state, "California", "CA") = "CA";
3
```

12 Exericse 5

- Solution included in *exercise_5.sql*

13   Practice Session

14   Quiz 1

1. Functions can be joined together. They are applied from inside out.

```
1      SELECT UPPER(LOWER("AWESOME"));
2
```

What do you think the result of this will be?

A. AwesomE

B. awesome

C. Awesome

D. AWESOME

Answer: D

people

first	last
Andrew	Chalkley
Lauren	Chalkley
Rachael	Hinkley
Imogen	Stevens

2.

What will the following SQL statement generate?
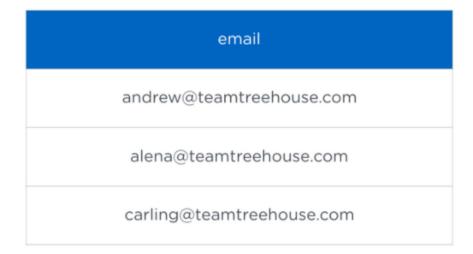
```
1      SELECT first, "..." || SUBSTR(last, 2, 3) || "..." FROM people;
2
```

A. Andrew ...al...
   Lauren ...al...
   Rachel ...nk...
   Imogen ...ev...

B. Andrew ...hal...
   Lauren ...hal...
   Rachel ...ink...
   Imogen ...tev...

C. Andrew ...Cha...
   Lauren ...Cha...
   Rachel ...Hin...
   Imogen ...Ste...

Answer: B

3.

What will the following query generate?

```
1    SELECT REPLACE(email, "@", "<at>") FROM people;
2
```

A. andrew@teamtreehouse.com
   alena@teamtreehouse.com
   carling@teamtreehouse.com

B. andrew¡at¿teamtreehouse.com

   alena¡at¿teamtreehouse.com

   carling¡at¿teamtreehouse.com

C. ¡at¿

   ¡at¿

   ¡at¿

Answer: B

4. You can use the LENGTH() in the WHERE clause.

   A. True

   B. False

Answer: A

5. What output would you expect from the following statement?

```
1    SELECT "Portland" || ", " || "OR";
2
```

   A. Portland,OR

   B. Portland OR

   C. Portland, OR

Answer: C