SQL Functions and Misc
CIT 381

LIKE - for string pattern matching

WHERE lastname = 'Wilson'; is the same as
WHERE lastname LIKE 'Wilson'

However, LIKE allows pattern matching:
'%' - matches any number of characters
'_' - matches one character

ex: SELECT firstname, lastname
    FROM customer
    WHERE lastname LIKE 'H%'
    -- all customers whose last name starts with H

FUNCTIONS

string functions

CONCAT
LENGTH
LOWER
REVERSE
TRIM

ex: SELECT firstname, lastname
    FROM customer
    WHERE TRIM(LOWER(lastname)) LIKE 'h%'

math functions

ABS
LOG10
ROUND
SQRT

date functions

DATEDIFF
TIMEDIFF
DAY
DAYNAME
MONTH
MONTHNAME
YEAR

SELECT videoid, DAYNAME(daterented), MONTHNAME(daterented),
    DAY(daterented), YEAR(daterented)
FROM rental
VARIABLES

In the previous example, it was tedious to write 'daterented' several times. We can assign the value to a temporary variable.

**syntax:** \(@\text{var}:=\text{attribute}\)

**ex:**

```sql
SELECT videoid, DAYNAME(@d:=daterented), MONTHNAME(@d), DAY(@d), YEAR(@d)
FROM rental
```

```sql
SELECT videoid, CONCAT(
  DAYNAME(@d:=daterented), ', ',
  MONTHNAME(@d), ', ',
  DAY(@d), ', ',
  YEAR(@d)) AS day
FROM rental
```

PROBLEM

Calculate the pay owed the employees on their time cards. To do this, find the hourly rate from the timecard table, and multiply that times the number of hours worked on the card.

```sql
SELECT e.firstname, e.lastname, DATE(t.date),
CONCAT('$', ROUND((HOUR(@td:=TIMEDIFF(t.endtime, t.starttime)) +
MINUTE(@td)/60)*h.hourlyrate, 2)) AS pay
FROM employee e INNER JOIN
  (hourlyemployee h INNER JOIN timecard t USING (ssn))
USING(ssn)
```

AGGREGATE FUNCTIONS - functions that apply to many rows

- AVG
- COUNT
- COUNT(DISTINCT)
- GROUP_CONCAT
- MAX
- MIN
- STDEV
- SUM

**ex:**

```sql
SELECT COUNT(cost) AS NUM, AVG(cost) AS AVG, MAX(cost) AS MAX, MIN(cost) AS MIN
FROM PreviousRental
WHERE cost>2
```

```sql
SELECT CONCAT(c.firstname, ' ', c.lastname) AS User,
GROUP_CONCAT(o.name SEPARATOR ' & ') AS 'Shares With'
FROM customer c INNER JOIN otherusers o USING(accountid)
GROUP BY c.accountid
```