

## CS122 Using Relational Databases and SQL Functions

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## Aggregation Functions

- ◆ Returns a single results based on multiple rows
  - COUNT
  - SUM
  - AVG
  - MIN, MAX
  - FIRST, LAST

## Row-level Functions

- ◆ ROUND( arg1, arg2 )
  - Round the value of arg1 to the number of decimal place specified by arg2
  - E.g. list the weekend grosses in millions.
- ◆ NZ( arg1, arg2 )
  - Think of the function as "NULL to Zero"
  - If the value of arg1 is NULL, replace it with the value of arg2

## TOP

- ◆ TOP n
- ◆ TOP n PERCENT

## String Functions

- |   |  |
|---|--|
| ◆ Concatenation <ul style="list-style-type: none"><li>■ +</li><li>■ &amp;</li></ul>                         | ◆ Substring matching <ul style="list-style-type: none"><li>■ LIKE</li><li>■ INSTR</li></ul>  |
| ◆ Substring extraction <ul style="list-style-type: none"><li>■ LEFT</li><li>■ RIGHT</li><li>■ MID</li></ul> | ◆ String manipulation <ul style="list-style-type: none"><li>■ LTRIM</li><li>■ RTRIM</li><li>■ TRIM</li><li>■ UCASE</li><li>■ LCASE</li></ul> |
| ◆ String length <ul style="list-style-type: none"><li>■ LEN</li></ul>                                       |  |

## Substring Extraction

- ◆ LEFT(string, length)
- ◆ RIGHT(string, length)
- ◆ MID(string, index, length)

## Substring Matching

- ◆ LIKE
  - \*
  - ?
  - #
  - [a-z], [0-9], [!a-z], [!0-9]
- ◆ INSTR(index, source, search)

## Date Functions

- ◆ YEAR, MONTH, DAY, WEEKDAY
- ◆ HOUR, MINUTE, SECOND
- ◆ DATE, TIME, NOW