SELECT Statement Clauses

SELECT select-list
    FROM table-name
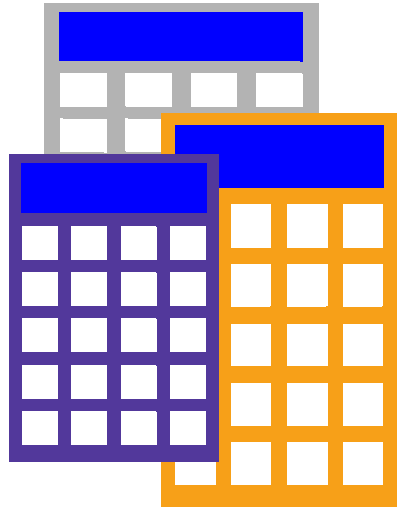   [WHERE condition]
    [GROUP BY column-list]
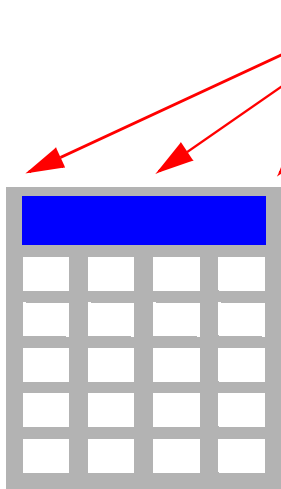   [HAVING condition]
    [ORDER BY column-name]
    [INTO TEMP table-name]
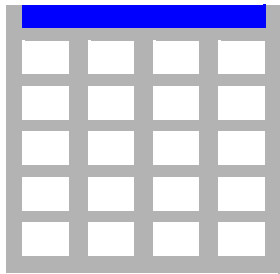
Selecting all Columns

SELECT * FROM manufact

manu_code	manu_name	lead_time
SMT	Smith	3
ANZ	Anza	5
NRG	Norge	7
HSK	Husky	5
HRO	Hero	4
SHM	Shimara	30

Selecting Specific Columns

SELECT **fname**, **lname** FROM customer

fname	lname
Ludwig	Pauli
Carole	Sadler
Philip	Currie
Anthony	Higgins
Raymond	Vector
George	Watson
Charles	Ream

Selecting Unique Values

SELECT customer_num
FROM orders

SELECT **DISTINCT** customer_num
FROM orders

customer_num
101
104
104
104
104
106
106
110
110
111
112
...
127

Duplicate values
retrieved

Each value
retrieved only
once

customer_num
101
104
106
110
111
112
115
116
117
...
127
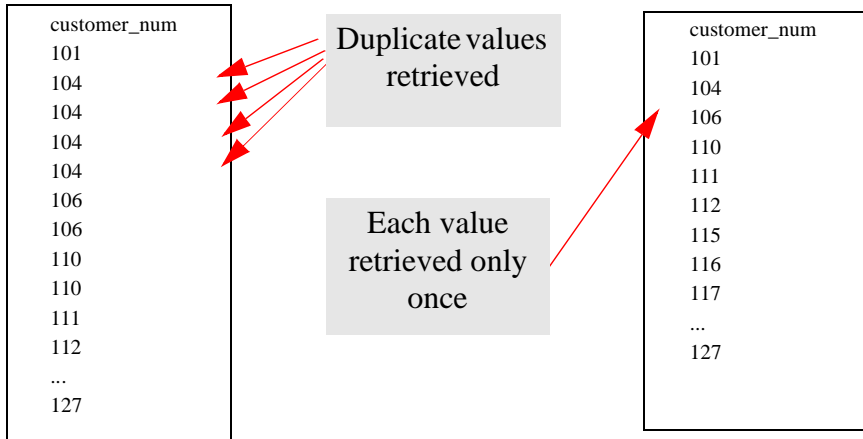
Executing Multiple Statements

Use a semi-colon (;) to separate multiple SQL statements.

SELECT *
    FROM manufact;

SELECT fname,lname,company
    FROM customer;

SELECT phone,customer_num FROM
customer;

The WHERE Clause

SELECT select-list
FROM table-name
[WHERE condition]

Use the WHERE clause to SELECT
specific rows

Including or Excluding Rows

```
SELECT     stock_num, manu_code, description, unit
    FROM    stock
    WHERE unit = 'case';
```

stock_num	manu_code	description	unit
1	HRO	baseball gloves	case
1	HSK	baseball gloves	case
...	...	...	...
310	ANZ	kick board	case

```
SELECT     stock_num, manu_code, description, unit
    FROM    stock
    WHERE unit != 'case'
```

stock_num	manu_code	description	unit
5	NRG	tennis racquet	each
5	SMT	tennis racquet	each
...	...	...	...
313	ANZ	swim cap	box

Relational Operators

=	equals
!= or <>	does not equal
>	greater than
>=	greater than or equal to
<	less than
<=	less than or equal to

Identifying NULL Values

```
SELECT lname, phone
   FROM customer
   WHERE address2 IS NULL;
```

lname	phone
Pauli	408-789-8075
Sadler	415-822-1289
Vector	415-776-3249
...	...
Neelie	303-936-7731

```
SELECT lname, phone
   FROM customer
   WHERE address2 IS NOT NULL
```

lname	phone
Currie	415-328-4543
Higgins	415-368-1100
Miller	408-723-8789
...	...
Lessor	602-533-1817

WHERE Clause Keywords

AND

OR

[NOT] BETWEEN

[NOT] IN

IS [NOT] NULL

[NOT] LIKE

[NOT] MATCHES

Combining Comparison Conditions

```
SELECT fname, lname
    FROM customer
    WHERE city = "Los Altos" AND state = "CA";
SELECT fname, lname
    FROM customer
    WHERE state = "CA" OR state = "AZ";
SELECT fname, lname
    FROm customer
    WHERE state = "CA"
    AND city = "Los Altos" OR state = "AZ";
```

Finding a Range of Values

```
SELECT stock_num, manu_code, description, unit_price
   FROM stock
   WHERE unit_price BETWEEN 20.00 AND 30.00
```

stock_num	manu_code	description	unit_price
5	NRG	tennis racquet	$28.00
5	SMT	tennis racquet	$25.00
9	ANZ	volleyball net	$20.00
103	PRC	frnt derailleur	$20.00
106	PRC	bicycle stem	$23.00
109	PRC	pedal binding	$30.00

Finding a Subset of Values

```
SELECT customer_num, lname, fname, company
   FROM customer
   WHERE customer_num IN (118,114,106,101,127)
```

customer_num	lname	fname	company
118	Baxter	Dick	Blue Ribbon Sports
114	Albertson	Frank	Sporting Place
106	Watson	George	Watson & Son
101	Pauli	Ludwig	All Sports Supplies
127	Satifer	Kim	Big Blue Bike Shop

Character Search Operators

LIKE	MATCHES	Meaning
%	*	Evaluates to zero or more characters
_	?	Evaluates to a single character
\	\	Specifies the next character as a literal character
	[ ]	Specifies valid values for a single character

Variable Length Wildcard

SELECT customer_num, company
   FROM customer
   WHERE company MATCHES '*Sports'

customer_num	company
103	Phil's Sports
105	Los Altos Sports
108	Quinn's Sports
115	Gold Medal Sports
118	Blue Ribbon Sports
121	City Sports
123	Bay Sports
125	Total Fitness Sports

Single Character Wildcard

SELECT customer_num, company
    FROM customer
    WHERE company MATCHES '?l*'

customer_num	company
101	All Sports Supplies
104	Play Ball!
116	Olympic City
118	Blue Ribbon Sports

Restricted Single Character Wildcard

SELECT *
  FROM manufact
  WHERE manu_name MATCHES '[A-N]*'

manu_code	manu_name	lead_time
ANZ	Anza	5
NRG	Norge	7
HSK	Husky	5
HRO	Hero	4

SELECT *
  FROM manufact
  WHERE manu_name MATCHES '[AN]*'

manu_code	manu_name	lead_time
ANZ	Anza	5
NRG	Norge	7
NKL	Nikolus	8

Comparing for Special Characters

```
SELECT *
    FROM cust_calls
    WHERE res_descr LIKE '%\%%'
```

The escape character lets the middle **%** be interpreted as a percent sign, not a wildcard.

```
customer_num  116
call_dtime    1990-12-21 11:24
user_id       mannyn
call_code     I
call_descr    Second complaint from this customer! Received two cases
              right-handed outfielder gloves (1 HRO) instead of one
              case lefties.
res_dtime     1990-12-27 08:19
res_descr     Memo to shipping (Ava Brown) to send case of left-
              handed gloves, pick up wrong case; memo to billing
              requesting 5% discount to placate customer due to
              second offense and lateness of resolution because of
              holiday
```

The ORDER BY Clause

SELECT select-list

   FROM table-name

   [WHERE condition]

   ...

   [ORDER BY column-name]

ORDER BY Example

```
SELECT stock_num, manu_code, description, unit_price
   FROM stock
   ORDER BY description, unit_price DESC
```

stock_num	manu_code	description	unit_price
111	SHM	10-spd, assmbld	$499.99
112	SHM	12-spd, assmbld	$549.00
113	SHM	18-spd, assmbld	$685.90
205	ANZ	3 golf balls	$312.00
205	NKL	3 golf balls	$312.00
205	HRO	3 golf balls	$312.00
2	HRO	baseball	$126.00
3	SHM	baseball bat	$280.00
3	HSK	baseball bat	$240.00
...	...	...	...
311	SHM	water gloves	$48.00