Selection Queries

- Retrieve the records that satisfy certain conditions

```sql
select field(s) from table(s)
[where condition(s)]
[order by field(s) asc|desc];
```

*SQL is case insensitive.*

Selection Query Examples

- List the descriptions of all products
- List all products
- List all CPU products
- List all products that cost more than $80, and order the results by price in descending order
- List the orders placed in this month
- List all the Intel products
- List the orders that are not shipped yet

Values

- **Numbers:** 10, 30.2
- **Strings:** ‘CPU’, ‘John’s Kitchen’
- **Dates:** ‘2007-06-01’
- **NULL**

Operators

- **Arithmetic**
  - +, -, *, /, %
- **Comparison**
  - <, >, <=, >=, =, <>, between
- **Logical**
  - and, or, not

- **String**
  - like
- **Other**
  - is null
  - in

LIKE

- **Pattern matching**
  - %: any zero or more characters
  - .: any single character
  - [abc], [a-z], [0-9]: range
  - * -- zero or more instances of the preceding character

```sql
select * from products where description like '%intel%';
```
About NULL

- NULL is a special value representing “empty”, “no value”, or “unknown”
- Whether an attribute is NULL or not can be checked with IS NULL or IS NOT NULL, but not with comparison operators like = or <>

Expressions

- (1-0.1) * price
- category = 'CPU' and price > 100
- description like '%intel%'
- order_date between '2007-5-19' and '2007-6-17' and shipping_date is null

More Selection Query Examples

- Find the prices of the CPU products after 10% discount
- Find the hard drives made by Maxtor
- Find the orders made last month but have not been shipped yet

CASE: switch style

```sql
SELECT product_id,
CASE category
  WHEN 'MB' THEN 'Motherboard'
  WHEN 'CPU' THEN 'Processor'
  ELSE 'ERROR!' END
FROM products;
```

CASE: if-else style

```sql
SELECT product_id,
CASE
  WHEN Price > 200 THEN 'Expensive'
  ELSE 'Cheap'
END
FROM products;
```

DISTINCT

- Remove duplicate results

```sql
select distinct address from customers;
```
Column Aliases

Name the result columns

```sql
SELECT description AS 'Intel CPUs' FROM products
  WHERE category = 'CPU' AND description LIKE '%Intel%';
```