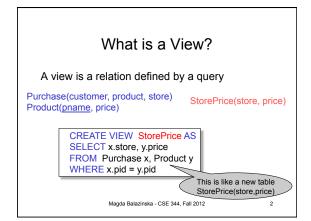
## Introduction to Data Management CSE 344

Lecture 17: Views

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Customer(cid, name, city)
Purchase(customer, product, store)
Product(pname, price)

How to Use a View?

• A "high end" store is a store that sold some product over 1000. For each customer, find all the high end stores that they visit. Return a set of (customername, high-end-store) pairs.

| SELECT DISTINCT z.name, u.store | FROM Customer z, Purchase u, StorePrice v | WHERE z.cid = u.customer

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AND u.store = v.store

AND v.price > 1000

## Types of Views

- · Virtual views
  - Used in databases
  - Computed only on-demand slow at runtime
  - Always up to date
- · Materialized views
  - Used in data warehouses
  - Pre-computed offline fast at runtime
  - May have stale data
  - Indexes are materialized views

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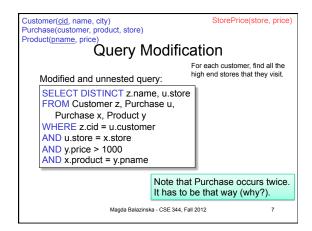
Customer(cid, name, city) StorePrice(store, price) Purchase(customer, product, store) Product(pname, price **Query Modification** For each customer, find all the high end stores that they visit. CREATE VIEW StorePrice AS View: SELECT x.store, y.price FROM Purchase x, Product y WHERE x.product = y.pname SELECT DISTINCT z.name, u.store FROM Customer z, Purchase u, StorePrice v Query: WHERE z.cid = u.customer AND u.store = v.store AND v.price > 1000 Magda Balazinska - CSE 344, Fall 2012

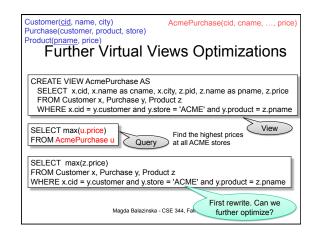
Customer(cid, name, city)
Purchase(customer, product, store)
Product(pname, price)

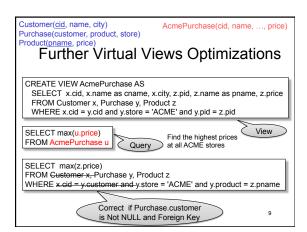
Query Modification

For each customer, find all the high end stores that they visit.

SELECT DISTINCT z.name, u.store
FROM Customer z, Purchase u,
(SELECT x.store, y.price
FROM Purchase x, Product y
WHERE x.pname = y.product) v
WHERE z.cid = u.customer
AND u.store = v.store
AND v.price > 1000





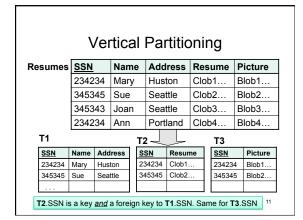


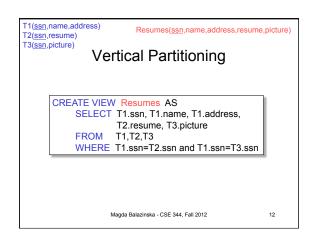
## Applications of Virtual Views

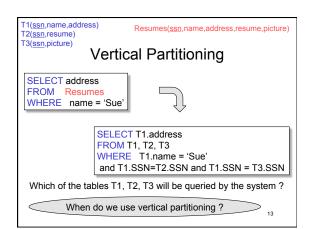
- · Increased physical data independence. E.g.
  - Vertical data partitioning
  - Horizontal data partitioning
- · Logical data independence. E.g.
  - Change schemas of base relations (i.e., stored tables)
- Security
  - View reveals only what the users are allowed to know

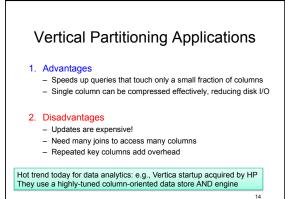
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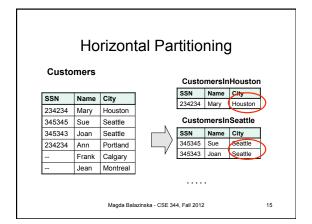
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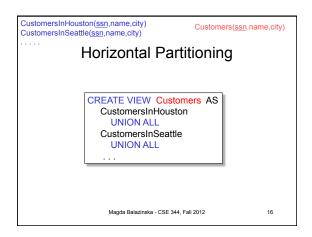


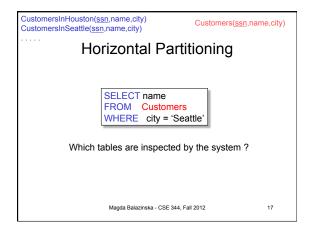


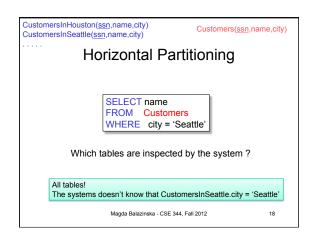


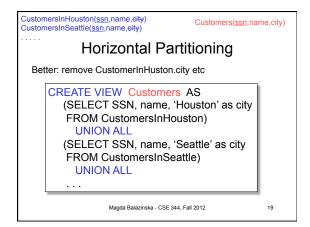


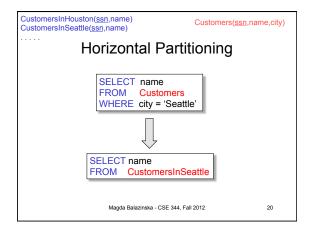












## **Horizontal Partitioning Applications**

- · Performance optimization
  - Especially for data warehousing
  - E.g. one partition per month
  - E.g. archived applications and active applications
- Distributed and parallel databases
- · Data integration

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21

