

Querying Relational Databases Part 1 Notes

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1 Why We Make Databases "Relational"

- Organizes data into related tables by their context and meaning
- Has benefits
 - Maximizes Storage
 - Better application functionality
 - Clearer, richer data for business reporting

2 Database Normalization

- **Normalization:** Is the process of eliminating redundant or repeating data in a database

3 How Normalization Helps Us

- Drastically reduces the amount of spaces required
 - Old days (And today too!!) → is crucial

SaleNumber	SaleDate	Amount	ProductName
10993847	1/3/2015	23.50	Scarf, purple, wool
10993848	1/3/2015	19.73	Gloves, white
10993849	1/3/2015	55.98	Coat, women's, long
10993850	1/3/2015	23.50	Scarf, purple, wool
10993851	1/3/2015	23.50	Scarf, purple, wool
10993852	1/3/2015	19.73	Gloves, white
10993853	1/3/2015	55.98	Coat, women's, long
10993854	1/3/2015	55.98	Coat, women's, long
10993855	1/3/2015	19.73	Gloves, white
10993856	1/3/2015	23.50	Scarf, purple, wool
10993857	1/3/2015	55.98	Coat, women's, long
10993858	1/3/2015	55.98	Coat, women's, long
10993859	1/3/2015	23.50	Scarf, purple, wool
10993860	1/3/2015	55.98	Coat, women's, long

Repeating Values :)

ProductName
Scarf, purple, wool
Gloves, white
Coat, women's, long

- Reduces update time
 - Update affects millions

4 Quiz 1

1. Which of these is NOT a benefit of a relational database?

- A. Saves disk space as much as possible.
- B. Data conveniently stored in one table.
- C. Eliminates data modification anomalies and increases data integrity.

Answer: B

2. What is Normalization?

- A. The process of writing queries against a relational database.
- B. The process of designing a relational database.
- C. The process of combining many tables into one.

Answer: B

3. Which CRUD operation benefits most from a well normalized database design?

- A. INSERT
- B. UPDATE

- C. DELETE
- D. All of These

Answer: D

4. When were relational databases first conceptualized?

- A. The 1990s
- B. The 1970s
- C. The 1950s

Answer: B

5. Where does the term “relational databases” come from?

- A. A relational database is the best way for a computer system to “relate” to the outside world.
- B. There is an implied inheritance between parent and child databases, thus the phrase “relational”
- C. Tables in a relational database are linked – or “related” – via fields that they have in common.

Answer: C

5 Set Theory and Relational Databases

- Intersection
 - Is a set of items in common



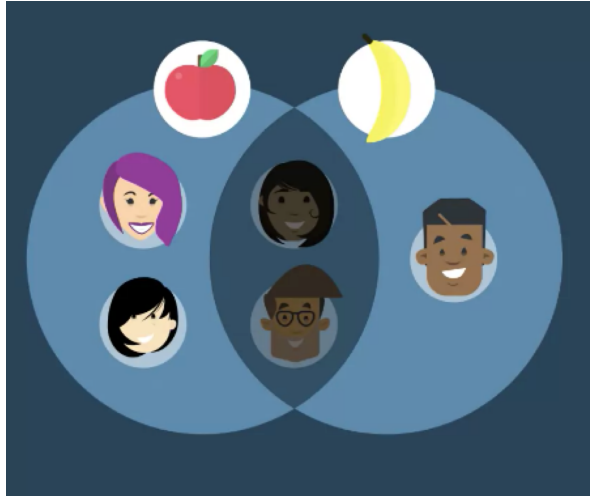
Intersection

- Union
 - Is all non-repeating values in two sets



Union

- Except
 - Is a set of elements that are not in common



Except