SQL OVERVIEW

Agenda

- SQL?

- Boolean & comparators

- Like/Patterns & Conditions

- Date Functions

- Joins

- ALL,ANY,IN,EXISTS

- Questions

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Structured Query Language (SQL)

- Create

- Drop

- Insert

- Update

- Select

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Table: STUDENT

ID	NAME	DATEOFBIRTH	YEAR
2343	Sharif	1994-02-13	2
4433	John	1996-09-12	1
3465	Sarah	1991-08-20	4
2354	Dave	1993-08-10	3

Structured Query Language (SQL)

- Insert, Select
  - INSERT INTO Student(ID,name) VALUES (106, 'Dan');

  - Select * from Student;

  - Select name, ID from Student;

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Boolean Operators and Comparators

- Boolean operators:
  - AND
  - OR
  - NOT

  - Comparators:
    - > , < , >= , <= , <>, =

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Meaning & Usage of *

- Means "all attributes of the relation"

- Select * from Student where id= 33;
- Select Count(*) from Student;

Renaming attributes

- Why rename?
    - Easier to refer and access.
    - Helps in avoiding ambiguity
    - Done with the help of 'AS' keyword

    - Select RegistrationCode AS Student_ID from Student;

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Where clause

Select name, ID from Student

where name = 'yu'

AND ID = '567';

Joining relations

- Joining different relations to be able to extract more insightful data.

- Select name, ID, course from student s, TA t where t.ID = s.ID AND TA.course = 'grad';

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Date Functions

- Year()

- Month()

- Day()

- Example:
  - Select name from Student

    where Year(dateOfBirth) = '1991';

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SELF JOIN

- SELECT s1.name, s2.name FROM Student s1, Student s2 WHERE s1.name = s2.name AND s1.year < s2.year;

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Subqueries

- A parenthesized SELECT-FROM-WHERE statement (*subquery*) can be used as a value in a number of places, including FROM and WHERE clauses.

- SELECT year(dateOfBirth) FROM Student s, (SELECT name FROM student WHERE name = 'Dave') ;

Credit: Dr. F. Chiang

ANY

- *x* = ANY(<subquery>) is a boolean condition that is true iff *x* equals at least one tuple in the subquery result.

- Could be any comparison operator.

- Example: *x* >= ANY(<subquery>) means *x* is not the uniquely smallest tuple produced by the subquery.

- Note tuples must have one component only.

Credit: Dr. F. Chiang

IN

- SELECT * FROM TV
  WHERE LastName IN ('House','Stark','White')

- SELECT * FROM TV

  WHERE

  LastName = 'House'

  OR LastName = 'Stark'
  OR LastName = 'White'

ALL

- SELECT name

  FROM Student

  WHERE grade>=

  ALL(SELECT passinggrade FROM Student);

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EXISTS

- SELECT * from Student

  Where EXISTS (Subquery)

QUESTIONS?

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Thank You

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