

Database Lab

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Dr. Andreas Geppert

geppert@acm.org

Topics

- conceptual design
- logical design
- **consistency constraints**
- data manipulation
- queries
- transactions
- views
- stored procedures and user-defined functions
- triggers
- database applications with Java (JDBC, SQLJ)

Consistency Constraints

- constraints can be defined as part of the table definition (within create table)
- constraints can also be defined separately, using *alter table*
- here we define constraints separately, over an already existing database schema

Consistency Constraints

- primary keys
alter table T add constraint C primary key(A);
- foreign keys
alter table T1 add foreign key (att1) references T2(A2)
on delete O1 on update O2;
- uniqueness
alter table T add constraint C unique(A);
- not null
alter table T alter column A set NOT NULL;
- check
alter table T add constraint C check (expression);

Consistency Constraints and Table Inheritance

- sub tables inherit *not null* and *check* constraints
- all other constraints (primary key, uniqueness, foreign key) are **not** inherited

- Exercise for today:
 - find applications/uses for each type of constraint in logical schema
 - define these constraints in Postgres
 - write DML statements (trying) to violate these constraints