Ch 3 Relational Model

Rel. schema: People

Name	phone	addr	city	state

attributes

raw tuple

Rel. state

Sep 7-9:54 AM

Attributes

- Name
- Value
  - data type
  - size
  - limits
  - format

Domain: set of values (atomic)

Sep 7-10:07 AM

Relation Schema

$R(A_1, A_2, \ldots A_n)$

name — attrib. — degree = n — arity

People(Name, Phone, StAddr, City, ...)

Sep 7-10:13 AM

Relation State

set of n-tuples

$r = \{t_1, t_2, t_3, \ldots t_m\}$

$t_1 = (v_1, v_2, \ldots v_n)$

list of values

Sep 7-10:18 AM

Relation state r(R)

a relation ~~on~~ subset of all domains of attributes

Cross Product $A \times B = \{(a,b) \mid a \in A, b \in B\}$

$r(R) \subseteq Dom(A_1) \times Dom(A_2) \times ..$

Sep 7-10:22 AM

$R(A_1, A_2 \ldots A_n)$

$t_1 = \langle v_1, v_2, \ldots v_n \rangle$

$v_1 \in Dom(A_1)$ or NULL

Sep 7-10:29 AM

Constraints

→ Schema-based

→ Application-based (business rules)

Sep 7-10:35 AM

Key constraint

superkey - set of attributes such that no two tuples have the same values on those attrib.

Course SK: {dept., coursenb, section, semester}

key: super key of R minimal

Movies (Title, year, studios, producer, director, release_date, mId)

candidate key { key: (Title, release_date) (mId)

super key: (Title, rel.Dat, studio, prod) (Title, relDat, director) (mId, studio) ...

Primary key: candidate key
- most important
- underlined

Sep 7-10:37 AM

Referential Integrity

Movies (mId, Title, ... directorId, ...)

foreign key

Directors (dId, name, dob, ...)

if directorId has a value then Directors has a tuple where Movies.directorId = Director.dId

Sep 7-10:56 AM

foreign key of R_1 that references R_2

- set of attrib. of R_1
- must have same domain as PK of R_2
- values in F.K. of R_1 must exist in PK of R_2 or be NULL

Sep 7-11:02 AM

1. input a phone #
2. store it in a long variable (parse)
3. print it. (format)

(xxx) yyy-zzzz

str 13 char x 2 Bytes = 26 Bytes

long 1 long x 8 Bytes = 8 Bytes

Sep 7-11:06 AM