Assume:

inputs (- Set of relations

- each relation has a primary key

- set of functional dependencies

Nomalization.

- given inputs
- achieve,
 - 1) minimize redundancy
 - 2) minimize insertion, deletion, and update anomabies

Normal form: highest normal form condition that the relation meets Super key : relation R= {A,, ..., An} set of attributes SSR Sit. titz on relational state of R $t_{i}[s] = t_{i}[s] = t_{i} = t_{i}$ key: K is a superkey w prop remove any attribute from K then it is no longer a key e.g. minimal E.g EMPLOYEES (Ename, Bolate, -., Son, -., fosor. te.color) ₹ 55n, fourile_color} < Super key {550 3 € hey Candidate key: set of keys for a relation primary key; (same deb) secondary keys: Candidate keys that are not primary prime attribute: attribute that is a member of a condidate key

non-prime attribi not a prime attrib

All attributes must be atomic values

DEPARTMENT

Dname	Dnumber	Dmgr_ssn	Diocations
Research	5	333445555	{Bellaire, Sugarland, Houston}
Administration	4	987654321	
Headquarters	1	888665555	

Solutions!

1. Add relation

DEPARTMENT

Dname	Dnumber	Dmgr_ssn
Research	5	333445555
Administration	4	987654321
Headquarters	1	888665555

DEPT_LOCATIONS

Dnumber	Diocation
1	Houston
4	Stafford
5	Bellaire
5	Sugarland
5	Houston

2, Add tuples

DEPARTMENT

EPARTMENT	Dnumber	Dmgr_ssn	Diocation	
Dname	Dilumber	333445555	Bellaire	
Research	5		Sugarland	
Research	5	333445555		
	5	333445555	Houston	
Research		987654321	Stafford	
Administration	4	888665555	Houston	
Headquarters	1	888663333	· iodete.	

	Num					
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	1	5			acold.	Loc
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Headqua	arters	1	A STATE OF THE PARTY OF THE PAR			NUL
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DINF

Full functional dependency:

F.D. X-7 Y is a full FD if

remaining an attribute from X cause

the FD to no longer hold

Partial F.D.: Can remove attributes from X

Eg:

EMP_PROJ

San Prumber Hours From Prove Days

San Prumber Hours From Days

EMP_PROJ

Ssn Pnumber Hours Ename Pname Plocation

FD1

FD2

FD3

{SSn, Pnumber } → Hours is full functional dependency §SSn, Pnumber } → Ename is portial extra known from FD2 def 2NF:

a relation R is 2NF if
every nonprime attribute is
fully funtionally dependent on
the primary key of R

Ts 210F?

