17 cq q. Define Normalization - Normalization is a process of designing a consistent db by minimizing redundancies and ensuring data integrity through decomposition which is lossless. - It is a process of organizing data in db in more efficient form. It results in hables that satisfy come constraints and are represented in a simpler manner. - Normalization ensures: data integrity, prevents redundancy in data and prevents data anomaly - There exists 3 forms of Normalization (i) INF (ii) 2 NF (iii) 3 NF That I shall you was all your i i). INF (Fisst Normal form.) - simplest form of normalization, simplifies each attribute in relation. - INF states that all attributes in relation must have atomic (indivisible) values and all attribute in a hope must have a single value from domain of that attribute. - a relation is in INF if every now contains exactly one value for each attribute. - example: Consider an employer hable with columns as shown in diagram!

	Emp_ID Ename Salvery Ecity
	Mayank 50 000 Mumbeu Pune
	Surcsh 25 000 Mumbai
	Southin to 20 000 Pune
	18 Jyoti 28 000 Mumbai, Déhi
E i	the dear amount to the medical medical -
WO	To convert relational schema in INF, the tuty
	attribute is divided in atomic domains, it may
+1+	inhoduce some data redundancy.
	asp both or would being is something of the some form
QK	Emp ID Ename Salvary Balvary Evily
	Mayank So 000 Mumbai
	Mayank 50 000 rune
	12 Suresh 25 000 Mumbai
	15 Saylain 20 000 Pune
	18 Jyon' 28 000 Mumbai
65	1015190 218 AM J 1 Tyohamanak 281000 Dalai -
	Many Marian State of the State
	- INF will rolve group redundancy occurred in
	a distribution of the state of
	along the state of
	- It will kolve all problems reacras
0.542.5	- Nested relations must be nemoved to convert
	relation in 1NF.
y d	all sold in 100 majors 100 miles of the city
	and the same of th
	stal where wingils one and a serious
A STATE OF THE STA	

(ii) Second Normal Form (2NE)
No. 20 And A Company of the Age o
- 2NF makes use of full functional dependances and
hies to remove problem of redundant data
introduced by INF. decomposition.
- A relation is in 2NF, if it is in INF and all key
non key attributes in relation are fully functional
dependent or the primary key of the relation.
- or a relation is in 2NF, if it is in INF and alt
every non-key attibute is fully functionally obepindent
on the complete primary key of relation ( and not
depends on part of (partial) primary Key).
The All Market and the commence of the state
- example:
A THE PARTY OF THE
Consider an employee table:
- The relational schema not in LNF is represented
al!
with the properties of the state
consider an employer table with following For,
Emp_IOI > Enamo, Salary smot of
Emp-ID, Ingrest-ID -> Hours, Allowance
As pushalar
1 Emp-ID, Project-ID & -> Ename, Balary, Hour Allowance
Therefore:
Canolitate Key Employer, Project-DD's selected
Canolitate Key! Employer, Project-DD's selected as primary Key
primary key functionally doct on
Enang Salary: partially doct on primary my

	Emp ID Ename Salary P. ID Hour Allowance
41	Manch Spood E 991 40 000
3	25 000 Bross 123) 30 000
	15 Suresh 2000 (67) 23 20 000
	18 Mahesh 50 000 E002 12 15 000
12.50	15 Buresh 26 000 E001 24 20 000
	18 Mahesh (50)000 BOSCIOLA (11)
Market Andrews	
Manager Company of the State of	
111	To normalize above schema to INF we can
	de compose table as,
	were the properties of the second second with the properties of the second seco
	Employers (Emp_ID, Ename, Balary)
	Emp_ ID - Ename, Salary.
	as the same a second of the same as the sa
4	Emp Iou Ename salary
	10000 no Manch 1 50 000 11 11
	12 Tyoh 25 000
	15 Surah 26,000 (150)
	18 Mayank 50 000
	to the late the late to the state of the late to the l
	Project (Emp_ID, Project_ID, Hours, Allowance).
	Emp_ID, Project_ID -> Hours, Allowance.
	Emp ID P_ID Hous Allowance
	10 5001 44 40 000
	12 BOST6 31 30 000
-	15 (6.7) 23 20 000
	18 E001 12 15 000
-	Company of the Compan
	18 8056 11 10 000
To the second second	The state of the s