12/11/2019

IT FIRM Management

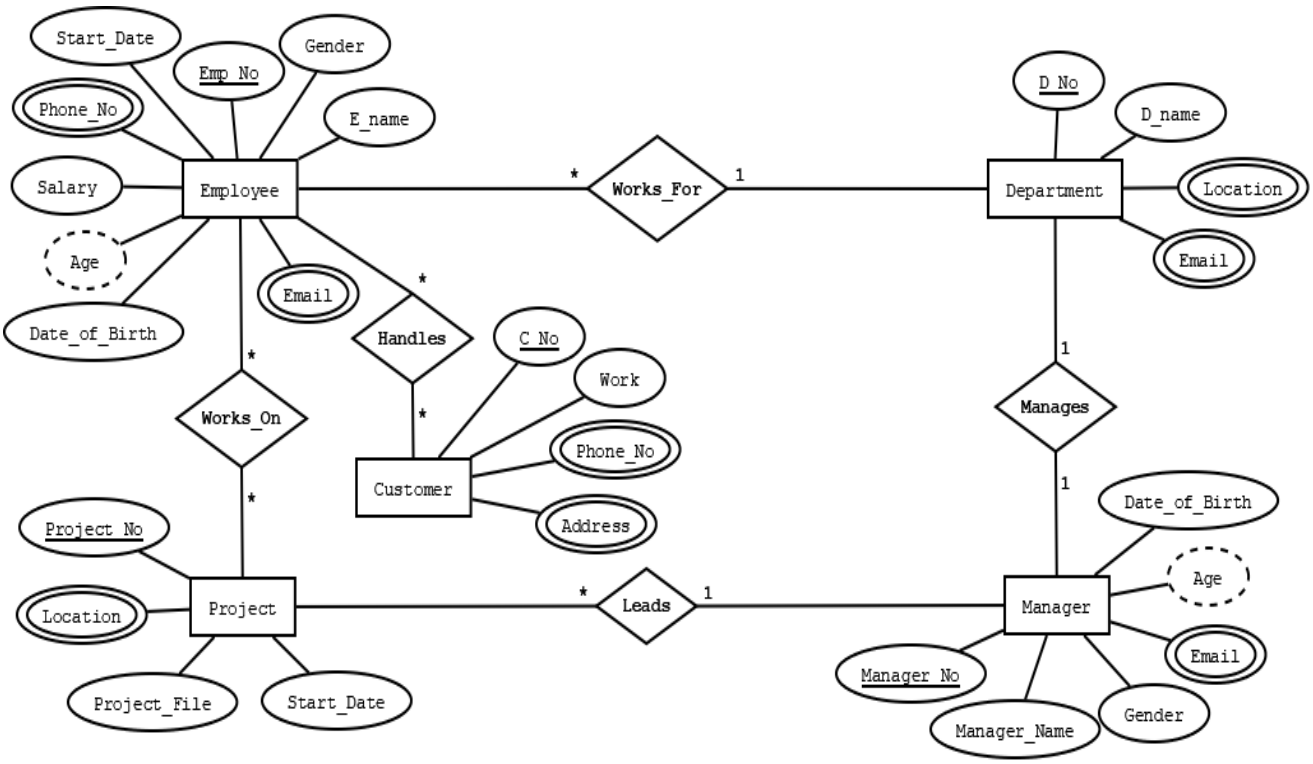
Database System

AMERICAN INTERNATIONAL UNIVERSITY BANGLADESH(AIUB)

INTRODUCTION

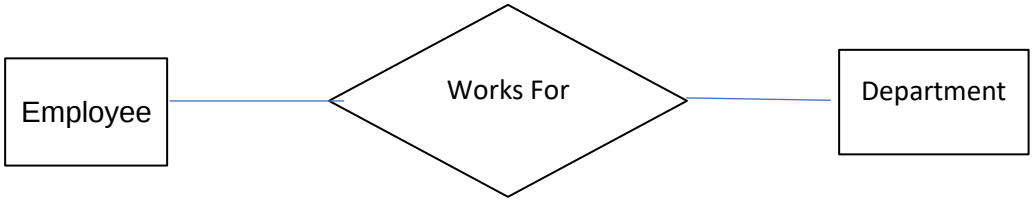
RTE IT World Ltd. Is a reknown IT firm .Such an IT firn requires and advanced level of database management system which can amplify the performance of the firm to achieve an outstanding position in the current competitive world by representing Bangladesh in front of the world .The IT firm has a very unique and standard database management system . The IT firm has departments .Every department has an unique Department Number , Department Name ,Location and Email. As the IT firm is very popular in Bangladesh , it has different branches around the country and each branch has an email.Then comes the emloyees ,who work for the department . Each employee has a unique Employee Number ,Employee Name, Gender ,Salary , Date of Birth, Age , Email and several Phone Numbers.There is a Manager for each Department ,who manages the department .Each manager has a unique Manager Number , Date of birth ,Age ,Gender,Manger Name and several Emails.Then there comes the Customers who hire the firm to complete a certain project or several projects.the IT firm keeps a customers Customer number , Occupation, Phone Number ,Address for the security perpous .The employes handle the customers for the firm .After taking the customers project the employes had to work on the project and gather some important informations about the project .As in the Location ,Topic,Content ,Start Date . They also have to give the project a unique project number .During the project the manager leads the employes to complete the project by the given time of the client.By this the RTE IT firm is able to achieve the best position among the IT firms in Bangladesh and walking towards the wide world to achieve it’s ultimate goal.

ER Diagram Of the Database



NORMALIZATION

RELATIONS:

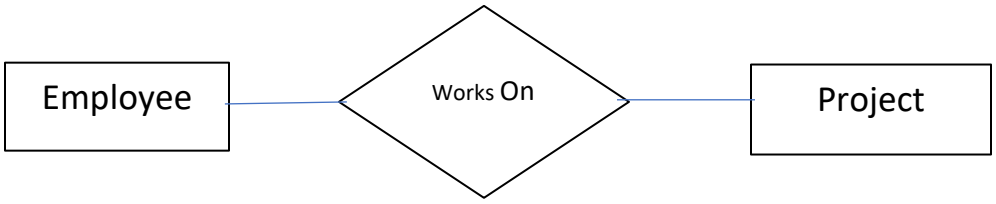


1) Works For:
(**E_No**,Gender,Ename,Email,Startdate,Age,Phone_No,Date_of_Birth, Salary,D_No,Dname,Location,Email)

1NF:- Email,Phone_No and Location are multivalued attribute

2NF:- **E_No**, Gender,Ename,Email,Startdate,Age,Date_of_Birth, Phone,Salary,D_No,Dname,Location,Email

3NF:-
i)**E_No** ,Gender,Ename,Email,Startdate,Salary,Phone_No
ii) **a_no** ,Date_of_birth,Age
iii) **D_No**,Dname,Location, Email



2) Works on:- **(E_No**,Gender, Ename, Email,Startdate,Age ,Phone_No, Date_of_Birth,Salary, Location, **Project_No**,Project _Title,Startdate)

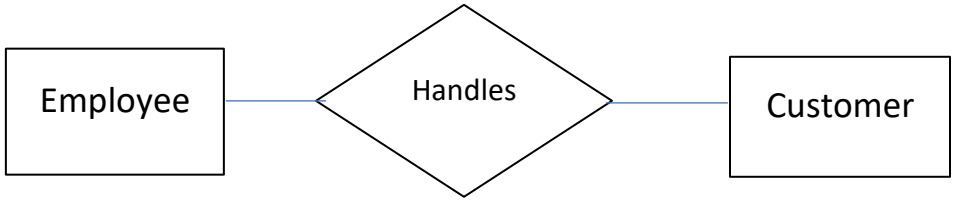
1NF :- Email, Phone_No, Location are multivalued attribute

2NF:- **E_No**, Gender, Ename, Email, Startdate, ,Phone _No, Salary, Date_of_Birth,Age,**Project_No**,Project_title,Startdate,Location

3NF:-

i) **E_No** ,Gender, Ename, Email,Startdate, Salary ,Phone_No
ii) **a_no** ,Date_of_Birth, Age

iii) **Project_no**, Project_Title, Startdate, Location



3) Handles :- (**E_No**, Gender, Ename, Email, Startdate, Date_of_birth, Age , Phone_No, Salary, Location, **C_No**,Address, Phone_No ,Work)

1NF :- Email, Phone_No ,Address are multivalued attribute

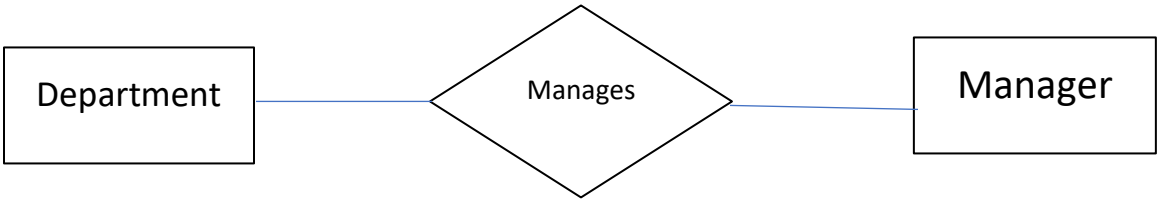
2NF:- **E_No**, Ename, Gender, Email, Strtdate,Phone_No, Salary , Date_of_birth ,Age, **C_No**, Address, Phone_No,Work

3NF:-

i) **E_No**, Gender , Ename, Email, Startdate, Salary , Phone

ii) **a_no** ,Date_of_birth ,Age

iii) **C_No**, Address, Phone_No ,Work



4) Manages :- (**D_No**, Dname, Location , Email, Age ,Date_of_birth , Manager_No , Manager_Name , Gender , Email)

1NF :- Location and Email are multivalued attribute

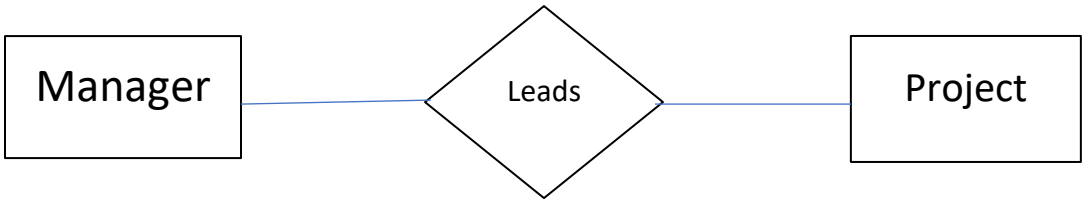
2NF :- **D_No** , Dname , Location , Email , **Manager_No** , Manager_Name , Gender, Email , Date_of_birth , Age

3NF:-

i) **D_No** , Dname , Location ,Email

ii) **Manager_No** , Manager_Name , Gender , Email

iii) **a_no** , Date_of_birth , Age



5) Leads:- (**Project_No** , Project _Title , Startdate , Location , **Manager_No** ,Manager_Name , Gender , Email , Age , Date_of_birth

1NF :- Email and Location are multivalued attribute

2NF:- **Project_No** , Project_Title ,Startdate ,Location , **Manager_No**, Manager_Name , Gender , Email, Date_of_birth , Age

3NF:-

i) **Project_No** , Project_Title , Startdate , Location

ii) **Manager_No** , Manager_Name , Gender , Email

iii) **a_no** , Date_of_birth ,Age

The final Table list

Serial Number	Table Name	Column Name
1	Employee	E_No , Gender , Ename , Startdate , Salary, D_No , a_no
2	Birth	a_no , Date_of_birth , Age
3	Contact	E_No ,Email, Phone_No
4	Trace	D_No ,Email ,Location
5	Project	Project_No , Location
6	New	N_No , Project_No , E_No
7	Customer	C_No , Work
8	Address	C_No , Phone_No , Address
9	Others	I_No , E_No, C_No
10	Department	D_No , Dname, a_no , Manager_No
11	Manager	Manager_No , Manager_Name , Gender
12	Manager2	Manager_No , Email
13	Project2	Project_No , Project_Title , Startdate , Manager_No

Query Qustions

Q1:

Emp_No	Emp_Name	Salary	Job	City	Age	Commission	Hiredate
101	John	1500	Salesman	Dhaka	41	200	January 21, 1998
102	Tusthi	2000	Manager	Dhaka	47	500	March 8,1992
103	Evan	1000	Salesman	Dhaka	40	200	February 29, 1999
104	Saske	400	Guard	Sylhet	39	100	April 16,2000
105	Hridoy	900	Assistant	Dhaka	41	0	October 7 ,1998

Table : Employee

Create the table using query language and change the name of the column Salary to sal .

Q2 :

Emp_No	Emp_Name	Job	Hiredate	Salary
101	John	Salesman	January 21, 1998	1500
102	Tusthi	Manager	March 8,1992	2000
103	Evan	Salesman	February 29, 1999	1000
104	Saske	Guard	April 16,2000	400
105	Hridoy	Assistant	October 7 ,1998	900

Table : Employee

Display employee name , job , hiredate column alias startdate , who were hired between March 8,1992 and April 16 ,2000 and order the query in ascending order .

Q3 :-

Emp_No	Emp_Name	Salary	Job	City	Age	Commission	Hiredate
101	John	1500	Salesman	Dhaka	41	200	January 21, 1998
102	Tusthi	2000	Manager	Dhaka	47	500	March 8,1992
103	Evan	1000	Salesman	Dhaka	40	200	February 29, 1999
104	Saske	400	Guard	Sylhet	39	100	April 16,2000
105	Hridoy	900	Assistant	Dhaka	41	0	October 7 ,1998

Table: Employee

Add necessary constraints to the table and order them by age .

Q4:-

D_NO	D_Name	Phone_No
01	CSE	01812369588
02	EEE	01356974582
03	Civil	01735284526
04	WRE	01925256425

Table :-Department

Make realtions between Department and Employee.

Q5:-

Is there any similarities between Composite and multivalued attribute?Explain it using examples .

Q6:-

Emp_No	Emp_Name	Salary	Job	City	Age	Commission	Hiredate
101	John	1500	Salesman	Dhaka	41	200	January 21, 1998
102	Tusthi	2000	Manager	Dhaka	47	500	March 8,1992
103	Evan	1000	Salesman	Dhaka	40	200	February 29, 1999
104	Saske	400	Guard	Sylhet	39	100	April 16,2000
105	Hridoy	900	Assistant	Dhaka	41	0	October 7 ,1998

Table :- Employee

Find out a name from employee table which starts with s and ends with e and show the list of employee who doesn’t receive any commission .