

Create the following schema -

EMPLOYEE

Name	<u>SSN</u>	Bdate	Address	Sex	Salary	Super-ssn	Dno
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DEPARTMENT

Dname	Dnumber	Mgr-ssn	Mgr-start-date
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DEPT LOCATIONS

Dnumber	Locality
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PROJECT

Pname	Pnumber	Location	Dname
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WORKS-ON

<u>SSN</u>	Pno	Hours
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DEPENDENT

Essn	Dependent-name	Ssn	Bdate	Relationship
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DEPARTMENT

Attribute	Type	Remarks
<u>Dnumber</u>	Number(6)	Primary Key
Dname	Varchar2(15)	Not Null
<u>Mgrssn</u>	Varchar2(8)	Not Null
Mgr-start-date	Date	Default System Date

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Write SQL statements for followings and note the output of the query. In some case error message will be displayed, note down the error message and analyse it.

→ Create the above database schema.

CREATE TABLE EMPLOYEE (

SSN int(8) PRIMARY KEY,

Name varchar(25) NOT NULL,

Bdate date NOT NULL,

Address varchar(25),

Sex char(1),

Salary dec(10,2) DEFAULT '0.0',

Supervisor varchar(8),

Dno varchar(6),

CHECK(Sex IN ('M', 'F')),

FOREIGN KEY (Dno) REFERENCES DEPARTMENT(Dnumber);

CREATE TABLE DEPARTMENT (

Dnumber int(6) PRIMARY KEY,

Dname varchar(15) NOT NULL,

Mgrssn varchar(8) NOT NULL,

Mgrstart date date DEFAULT (CURRENT_DATE));

CREATE TABLE DEPT_LOCATION (

Dnumber int(6),

Dlocation varchar(50),

PRIMARY KEY (Dnumber, Dlocation),

FOREIGN KEY (Dnumber) REFERENCES DEPARTMENT(Dnumber);

Teacher's Signature:

EMPLOYEE		
Attribute	Type	Remarks
<u>SSN</u>	Number(8)	Primary Key
Name	Varchar(25)	Not Null
Bdate	Date	Not Null
Address	Varchar(25)	
Sex	Char(1)	Is like M/F
Salary	Number (10,2)	Default 0.0
Sopersons	Varchar(8)	
Dno	Varchar(2(6))	Foreign Key referred to Dnumber of Department

DEPENDENT		
Attribute	Type	Remarks
<u>Essn</u>	Number(8)	Composite Primary Key. Essn referred to ESN of Employee table
<u>Dependent Name</u>	Varchar(20)	
Sex	char(1)	Is like M/F
Bdate	Date	
Relationship	Varchar(15)	Not Null

PROJECT		
Attribute	Type	Remarks
Prname	Varchar(20)	Not Null
Prnumber	Number(10)	Primary Key
Placeation	Varchar(20)	Not Null
Dnumber	Number(6)	Foreign Key referred to Dnumber of Department

WORKS-ON		
Attribute	Type	Remarks
<u>Essn</u>	Number(8)	Composite Primary Key. Foreign key ESSN referred to ESN of Employee
<u>Prno</u>	Number(10)	and Prno referred to Prnumber of Project.
Hours	Number(11)	Not Null.

DEPT - LOCATION		
Attribute	Type	Remarks
<u>Dnumber</u>	Number(6)	Composite Primary, Dnumber is the foreign key referred to Dnumber of Department
<u>Dlocation</u>	Varchar(10)	

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CREATE TABLE PROJECT (

Prname varchar(20) NOT NULL,

Pnumber int(10) PRIMARY KEY,

Plocation varchar(20) NOT NULL,

Dnum int(6),

FOREIGN KEY (Dnum) REFERENCES DEPARTMENT (Dnumber);

CREATE TABLE WORKS_ON (

Essn int(8),

Pno int(10),

Hour dec(4,2) NOT NULL,

PRIMARY KEY (Essn, Pno),

FOREIGN KEY (Essn) REFERENCES EMPLOYEE (SSN),

FOREIGN KEY (Pno) REFERENCES PROJECT (Pnumber);

CREATE TABLE DEPENDENT (

Essn int(8) PRIMARY KEY,

Dependent_name varchar(20) UNIQUE,

Sex char(1),

Bdate date,

Relationship varchar(15) NOT NULL,

CHECK (Sex IN ('M', 'F')),

FOREIGN KEY (Essn) REFERENCES EMPLOYEE (SSN);

Teacher's Signature:

- 2) Query OK, 0 rows affected (0.30 sec)
- 3) Query OK, 0 rows affected (0.30 sec)
- 4) Query OK, 0 rows affected, 1 warning (0.06 sec)
- 5) Query OK, 0 rows affected, (0.06 sec)
- Query OK, 0 rows affected. (0.16 sec)
- Query OK, 0 rows affected, (0.03 sec)

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3) Remove the attributes Sex and Balance from Dependent Relation.

ALTER TABLE DEPENDENT DROP Sex, DROP Balance;

4) Suppose each department has a fixed/single location. Modify the schema of database accordingly.

ALTER TABLE DEPARTMENT ADD COLUMN Dlocation varchar(20)

AFTER Dname;

4) Add a new attribute Mobile_number (numeric 10 digit) to employee table and enforce Not Null constraint on it.

ALTER TABLE EMPLOYEE ADD Mobile_number bigint(10)
NOT NULL;

5) Create another table DEPARTMENT_MANAGER which will borrow the following properties of both the relations -

Dnumber, Dname, Start_date : From DEPARTMENT table.

Mgr_Name : From Name field EMPLOYEE table.

Constraints on table :

DEPARTMENT_MANAGER (Dnumber) references DEPARTMENT (Dnumber)

CREATE TABLE DEPARTMENT_MANAGER AS (SELECT Name, Dnumber,

Dname, Mgr_start_date FROM DEPARTMENT, EMPLOYEE);

ALTER TABLE DEPARTMENT_MANAGER ADD FOREIGN KEY (Dnumber)

REFERENCES DEPARTMENT (Dnumber);

ALTER TABLE DEPARTMENT_MANAGER RENAME COLUMN Name to

Mgr_Name;

Teacher's Signature:

- 6) Query OK, 0 rows affected (0.09 sec)
- 7) Query OK, 0 rows affected (0.05 sec)
Query OK, 0 rows affected (0.05 sec).
- 8) ERROR 1091 (42000): Can't Drop 'Dnumber'; check that column/key exists.
- 9) ERROR 1553 (HY000): Cannot drop index 'PRIMARY'; needed in a foreign key constraint
- 10) Query OK, 1 row affected (0.01 sec)
- Query OK, 1 row affected (0.02 sec).

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6) Change the size of SSN 8 to 6 in Employee Relation.

ALTER TABLE EMPLOYEE MODIFY COLUMN SSN INT(6);

7) Change the size of Dnumber 6 to 7

ALTER TABLE DEPARTMENT MODIFY COLUMN Dnumber INT(7);

ALTER TABLE DEPT_LOCATION MODIFY COLUMN Dnumber INT(7);

8) Remove the constraint Foreign Key on Dnumber of
DEPARTMENT_MANAGER.

ALTER TABLE DEPARTMENT_MANAGER DROP FOREIGN KEY Dnumber;

9) Remove the primary key of DEPARTMENT table.

ALTER TABLE DEPARTMENT DROP PRIMARY KEY;

10) Insert any record into EMPLOYEE, DEPARTMENT table.

INSERT INTO DEPARTMENT (Dnumber, Dname, Dlocation,
Manager) values (1, 'Dept-1', 'SouthBlock', '123');

INSERT INTO EMPLOYEE (SSN, Name, Bdate, Address,
Sex, Salary, Supervisor, Dno, Mobile_number) VALUES
(556, 'Ajit', '2000-01-07', 'Shahid Nagan', 'M', 70000,
'AO1', 1, 7798653200);

Teacher's Signature:

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Query OK, 0 rows affected (0.09 sec)

1) Drop the schema.

DROP DATABASE Anub-DB;

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