Program 1

CREATE DATABASE employee\_db;

USE employee\_db;

-- creating employee table as strong entity without relationship

CREATE TABLE `employee` (

`ssn` INT PRIMARY KEY,

`f\_name` VARCHAR(50) NOT NULL,

`m\_name` VARCHAR(50),

`l\_name` VARCHAR(50) NOT NULL,

`address` VARCHAR(200),

`b\_day` DATE NOT NULL,

`salary` DECIMAL(10,2)

);

-- inserting values in the employee Table

INSERT INTO employee (ssn,f\_name,m\_name,l\_name,address,b\_day,salary)

VALUES

(10,'ABCD','EFG','XYZ','Bangalore','1990-08-01',100000.00),

(1,'Nabendu',NULL,'Das','West Bengal','2001-09-23',60000.00),

(2,'Ashish',NULL,'Garg','Delhi','2000-06-20',50000.00);

-- creating department table as strong entity without relationship

CREATE TABLE `department` (

`d\_no` INT PRIMARY KEY,

`d\_name` VARCHAR(50)

);

-- ALTER TABLE `department` MODIFY COLUMN `m\_start\_date` DATE;

-- inserting values to department table

INSERT INTO department(d\_no,d\_name)

VALUES

(123,'Software Developer'),

(345,'Networking');

-- creating project table

CREATE TABLE `project` (

`p\_no` INT PRIMARY KEY,

`p\_name` VARCHAR(50) NOT NULL,

`location` VARCHAR(100));

-- inserting values to project table

INSERT INTO `project` (p\_no,p\_name,location)

VALUES

(100,'Banglaore Guide App','bangalore');

-- creating dependent weak entity with partial key refering from employee table

CREATE TABLE `dependent` (

`emp\_ssn` INT,

`emp\_name` VARCHAR(50),

`sex` VARCHAR(10),

`b\_day` DATE,

`relationship` VARCHAR(50),

PRIMARY KEY (`emp\_ssn`,`emp\_name`),

FOREIGN KEY (`emp\_ssn`) REFERENCES `employee` (`ssn`)

);

-- adding values to the dependent table

INSERT INTO `dependent`(emp\_ssn,emp\_name,sex,b\_day,relationship)

VALUES

(1,'Nabendu Das','Male','2001-09-23','Single'),

(10,'ABCD EFG XYZ','FEMALE','1990-08-01','Married'),

(2,'Ashish Garg','Male','2000-06-20','Single');

-- adding department foreign key to the employee table from department table

ALTER TABLE `employee`

ADD COLUMN `d\_no` INT,

ADD CONSTRAINT `fk\_dept\_no`

FOREIGN KEY (`d\_no`) REFERENCES `department`(`d\_no`);

-- adding supervisor ssn as foreign key to the employee table

ALTER TABLE `employee`

ADD COLUMN `sup\_ssn` INT,

ADD CONSTRAINT `fk\_supervisor\_ssn`

FOREIGN KEY (`sup\_ssn`) REFERENCES `employee`(`ssn`);

-- updating employee values with foreign keys

UPDATE `employee`

SET d\_no = '123' , sup\_ssn = 10

WHERE ssn = 1;

UPDATE `employee`

SET d\_no = '123' , sup\_ssn = 10

WHERE ssn = 2;

UPDATE `employee`

SET d\_no = '123' , sup\_ssn = 10

WHERE ssn = 10;

-- adding manager ssn as foreign key in department table with start date

ALTER TABLE `department`

ADD COLUMN `m\_ssn` INT,

ADD COLUMN `m\_start\_date` DATE,

ADD CONSTRAINT `fk\_manager\_ssn`

FOREIGN KEY (`m\_ssn`) REFERENCES `employee`(`SSN`);

-- updating the values of deparment with foreign key

UPDATE `department`

SET m\_ssn = 2, m\_start\_date = '2022-09-30'

WHERE d\_no = 123;

-- adding department no to the project table as foreign key

ALTER TABLE `project`

ADD COLUMN `d\_no` INT,

ADD CONSTRAINT `fk\_proj\_dept\_no`

FOREIGN KEY (`d\_no`) REFERENCES `department`(`d\_no`);

-- updating the project table values with foreign keys

UPDATE `project`

SET d\_no = 123

WHERE p\_no = 100;

-- adding works\_on table for m:n relationship between employee and project

CREATE TABLE `works\_no` (

`emp\_ssn` INT,

`p\_no` INT,

`hour` INT,

PRIMARY KEY (`emp\_ssn`,`p\_no`),

FOREIGN KEY (`emp\_ssn`) REFERENCES `employee`(`ssn`),

FOREIGN KEY (`p\_no`) REFERENCES `project`(`p\_no`) );

-- adding values to works on table

INSERT INTO `works\_no`(emp\_ssn,p\_no,hour)

VALUES

(1,100,10),

(2,100,6);

-- adding dept location table for multivalued attribute location

CREATE TABLE `dept\_location` (

`d\_no` INT,

`d\_locations` VARCHAR(100),

PRIMARY KEY (`d\_no`,`d\_locations`),

FOREIGN KEY (`d\_no`) REFERENCES `department`(`d\_no`)

);

-- adding values into dept\_location table

INSERT INTO `dept\_location` (d\_no,d\_locations)

VALUES

(123,'bangalore'),

(123,'delhi'),

(123,'kolkata')