

# SQL DDL and DML for Employee Database

This document contains the SQL Data Definition Language (DDL) for creating the tables and Data Manipulation Language (DML) for inserting data into them, based on the provided schema and data.

## 1. Employee Table

### Create Table Query:

```
CREATE TABLE Employee (  
    Fname VARCHAR(7) NOT NULL,  
    Minit CHAR(1),  
    Lname VARCHAR(15) NOT NULL,  
    Ssn CHAR(9) PRIMARY KEY,  
    Bdate DATE,  
    Address VARCHAR(30),  
    Gender CHAR(1),  
    Salary DECIMAL(10, 2),  
    Super_ssn CHAR(9),  
    Dno INT NOT NULL  
);
```

### Insert Data Query (Multiple Rows):

```
INSERT INTO Employee (Fname, Minit, Lname, Ssn, Bdate, Address,  
Gender, Salary, Super_ssn, Dno) VALUES  
( 'John', 'B', 'Smith', '123456789', '1965-01-09', '731 Fondren,  
Houston, TX', 'M', 30000.00, '333445555', 5),  
( 'Franklin', 'T', 'Wong', '333445555', '1955-12-08', '638 Voss,  
Houston, TX', 'M', 40000.00, '888665555', 5),  
( 'Alicia', 'J', 'Zelaya', '999887777', '1968-01-19', '3321 Castle,  
Spring, TX', 'F', 25000.00, '987654321', 4),  
( 'Jennifer', 'S', 'Wallace', '987654321', '1941-06-20', '291 Berry,  
Bellaire, TX', 'F', 43000.00, '888665555', 4),  
( 'Ramesh', 'K', 'Narayan', '666884444', '1962-09-15', '975 Rice Oak,  
Humble, TX', 'M', 38000.00, '333445555', 5),  
( 'Joyce', 'A', 'English', '453453453', '1972-07-31', '5631 Rice,  
Houston, TX', 'F', 25000.00, '333445555', 5),  
( 'Ahmad', 'V', 'Jabbar', '987987987', '1969-03-29', '980 Dallas,  
Houston, TX', 'M', 25000.00, '987654321', 4),  
( 'James', 'E', 'Borg', '888665555', '1937-11-10', '450 Stone, Houston,
```

```
TX', 'M', 55000.00, NULL, 1);
```

## 2. Department Table

### Create Table Query:

```
CREATE TABLE Department (  
    Dname VARCHAR(15) NOT NULL,  
    Dnumber INT PRIMARY KEY,  
    Mgr_ssn CHAR(9) NOT NULL,  
    Mgr_start_date DATE,  
    FOREIGN KEY (Mgr_ssn) REFERENCES Employee(Ssn)  
);
```

### Insert Data Query (Multiple Rows):

```
INSERT INTO Department (Dname, Dnumber, Mgr_ssn, Mgr_start_date)  
VALUES  
( 'Research', 5, '333445555', '1988-05-22'),  
( 'Administration', 4, '987654321', '1995-01-01'),  
( 'Headquarters', 1, '888665555', '1981-06-19');
```

## 3. Dept\_locations Table

### Create Table Query:

```
CREATE TABLE Dept_locations (  
    Dnumber INT NOT NULL,  
    Dlocation VARCHAR(15) NOT NULL,  
    PRIMARY KEY (Dnumber, Dlocation),  
    FOREIGN KEY (Dnumber) REFERENCES Department(Dnumber)  
);
```

### Insert Data Query (Multiple Rows):

```
INSERT INTO Dept_locations (Dnumber, Dlocation) VALUES  
(1, 'Houston'),  
(4, 'Stafford'),  
(5, 'Bellaire'),  
(5, 'Sugarland'),  
(5, 'Houston');
```

## 4. Project Table

### Create Table Query:

```
CREATE TABLE Project (  
    Pname VARCHAR(15) NOT NULL UNIQUE,  
    Pnumber INT PRIMARY KEY,  
    Plocation VARCHAR(15),  
    Dnum INT NOT NULL,  
    FOREIGN KEY (Dnum) REFERENCES Department(Dnumber)  
);
```

### Insert Data Query (Multiple Rows):

```
INSERT INTO Project (Pname, Pnumber, Plocation, Dnum) VALUES  
( 'ProductX', 1, 'Bellaire', 5),  
( 'ProductY', 2, 'Sugarland', 5),  
( 'ProductZ', 3, 'Houston', 5),  
( 'Computerization', 10, 'Stafford', 4),  
( 'Reorganization', 20, 'Houston', 1),  
( 'Newbenefits', 30, 'Stafford', 4);
```

## 5. Works\_on Table

### Create Table Query:

```
CREATE TABLE Works_on (  
    Essn CHAR(9) NOT NULL,  
    Pno INT NOT NULL,  
    Hours DECIMAL(3, 1) NOT NULL,  
    PRIMARY KEY (Essn, Pno),  
    FOREIGN KEY (Essn) REFERENCES Employee(Ssn),  
    FOREIGN KEY (Pno) REFERENCES Project(Pnumber)  
);
```

### Insert Data Query (Multiple Rows):

```
INSERT INTO Works_on (Essn, Pno, Hours) VALUES  
( '123456789', 1, 32.5),  
( '123456789', 2, 7.5),  
( '666884444', 3, 40.0),  
( '453453453', 1, 20.0),  
( '453453453', 2, 20.0),
```

```

('333445555', 2, 10.0),
('333445555', 3, 10.0),
('333445555', 10, 10.0),
('333445555', 20, 10.0),
('999887777', 30, 30.0),
('999887777', 10, 10.0),
('987987987', 10, 35.0),
('987987987', 30, 5.0),
('987654321', 30, 20.0),
('987654321', 20, 15.0),
('888665555', 20, 0.0); -- Note: Changed NULL to 0.0 as per NOT NULL
constraint for 'Hours'.

```

## 6. Dependent Table

### Create Table Query:

```

CREATE TABLE Dependent (
    Essn CHAR(9) NOT NULL,
    Dependent_name VARCHAR(15) NOT NULL,
    Gender CHAR(1),
    Bdate DATE NOT NULL,
    Relationship VARCHAR(8),
    PRIMARY KEY (Essn, Dependent_name),
    FOREIGN KEY (Essn) REFERENCES Employee(Ssn)
);

```

### Insert Data Query (Multiple Rows):

```

INSERT INTO Dependent (Essn, Dependent_name, Gender, Bdate,
Relationship) VALUES
('333445555', 'Alice', 'F', '1986-04-05', 'Daughter'),
('333445555', 'Theodore', 'M', '1983-10-25', 'Son'),
('333445555', 'Joy', 'F', '1958-05-03', 'Spouse'),
('987654321', 'Abner', 'M', '1942-02-28', 'Spouse'),
('123456789', 'Michael', 'M', '1988-01-04', 'Son'),
('123456789', 'Elizabeth', 'F', '1967-05-05', 'Daughter');

```