Database Systems I
Individual Assignment

Employee Management System

Name –M.W.B.N.Gunasinha

Index No– ICT/18/817

Introduction

Employees are the backbone of any company, management of employee performance plays a major role in deciding the success of the organization. The current system running in the workshop is paper based. That is the workshop is still using cabinet files to store records of stock and employee information. Useful data is scattered all over the place. In this system we can give solutions to the problems being caused by the current system.

Employee Management System is a distributed application, developed to maintain the details of employees working in any organization. It maintains the information about the personal details of their employees, also the details about the payroll system which enable to generate the pay slip.

Requirements for the database

Entities

1. Employee
2. Department
3. Project

Attributes

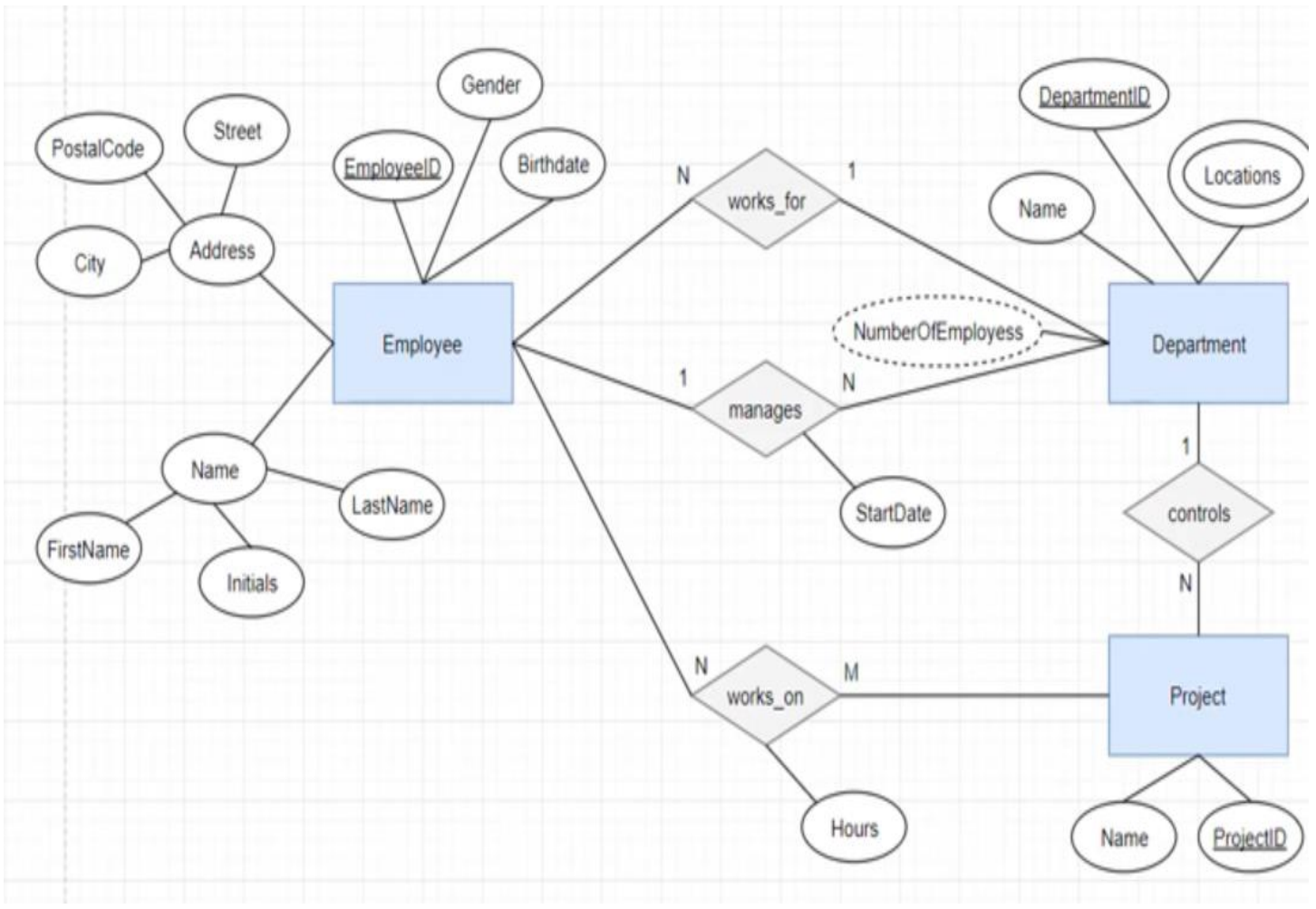### Employee

- EmployeeID
- Name
- Gender
- Birthdate
- Address
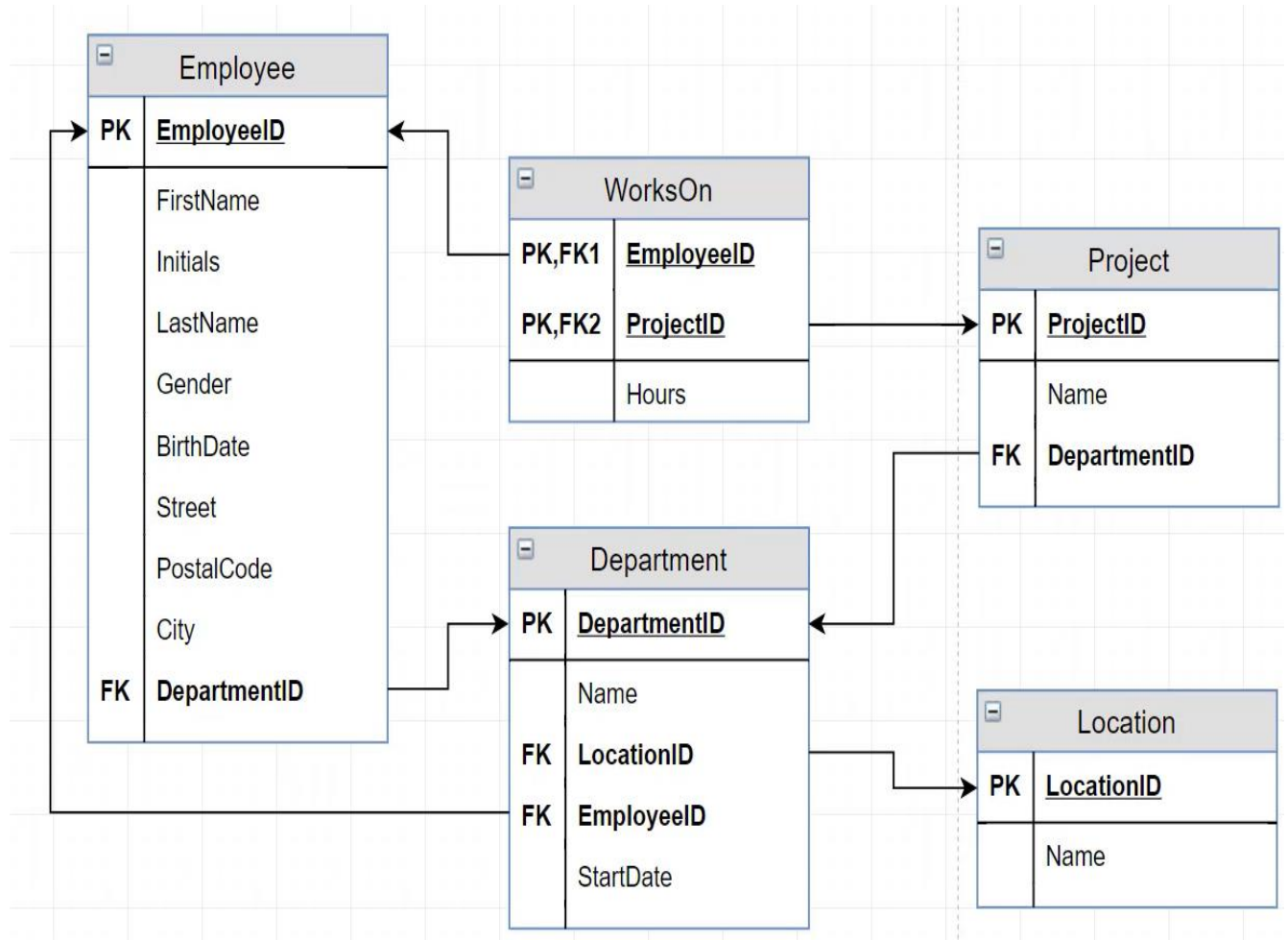
Department

- DepartmentID
- Location
- Name

Project

- ProjectID
- Name

ER Diagram

Relational schema

Employee
PK	**EmployeeID**
	FirstName
	Initials
	LastName
	Gender
	BirthDate
	Street
	PostalCode
	City
FK	**DepartmentID**

WorksOn
PK,FK1	**EmployeeID**
PK,FK2	**ProjectID**
	Hours

Project
PK	**ProjectID**
	Name
FK	**DepartmentID**

Department
PK	**DepartmentID**
	Name
FK	**LocationID**
FK	**EmployeeID**
	StartDate

Location
PK	**LocationID**
	Name

3rd Normal Form

Employee

PK	**EmployeeID**
	FirstName
	Initials
	LastName
	Gender
	BirthDate
	Street
FK	**PostalCode**
FK	**DepartmentID**

WorksOn

PK,FK1	**EmployeeID**
PK,FK2	**ProjectID**
	Hours

Project

PK	**ProjectID**
	Name
FK	**DepartmentID**

Department

PK	**DepartmentID**
	Name
FK	**LocationID**
FK	**EmployeeID**
	StartDate

Location

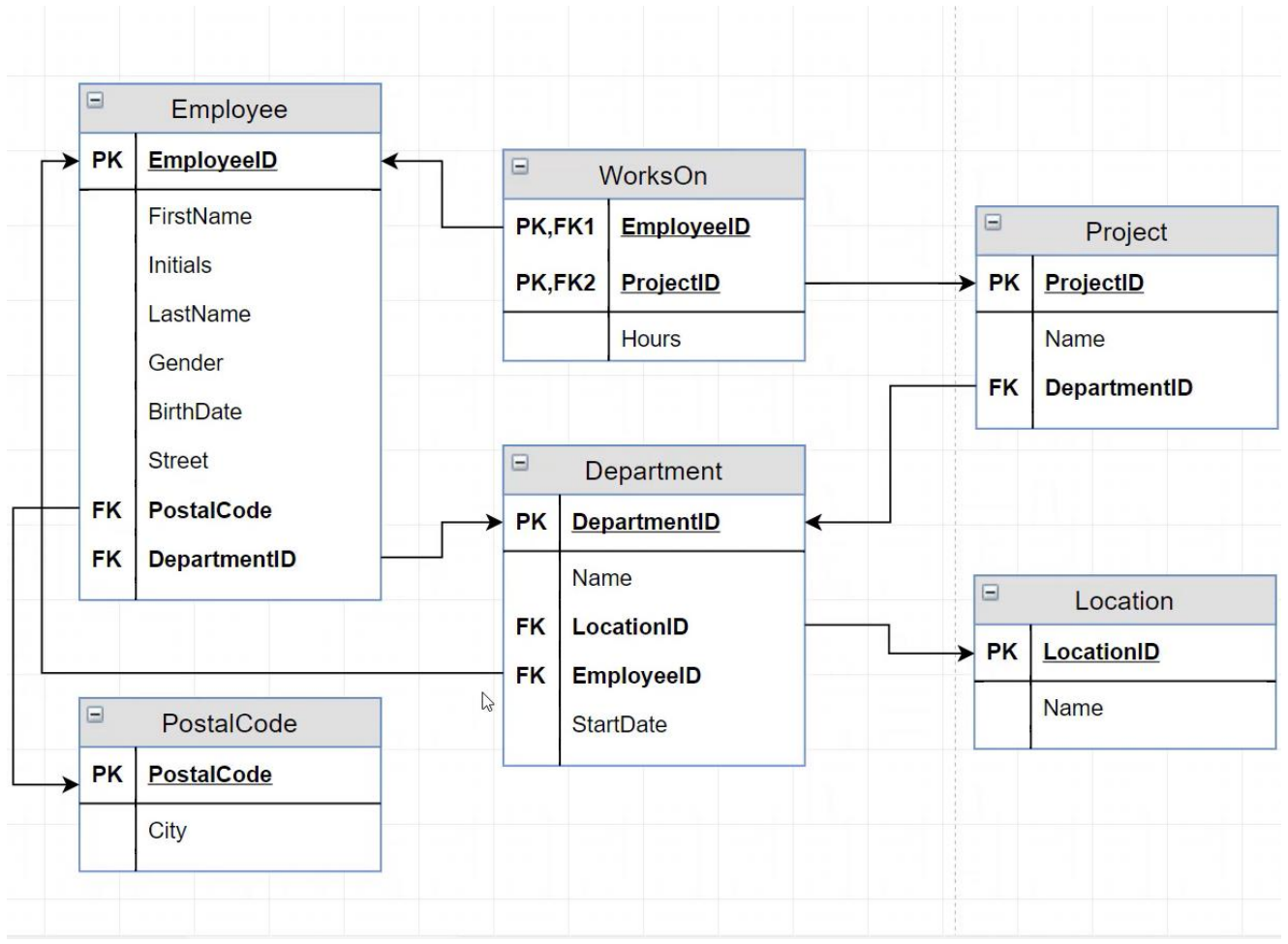|	
PK	**LocationID**
	Name

PostalCode

PK	**PostalCode**
	City

Table structure

```sql
create database EmployeeDB;

use EmployeeDB;

/*Employee*/
CREATE TABLE Employee(
EmployeeID int NOT NULL,
FirstName varchar(255) NULL,
Initials varchar(255) NULL,
LastName varchar(255) NULL,
PostalCode varchar(20) NOT NULL,
Street varchar(20) NULL,
Gender varchar(1) NOT NULL,
BirthDate DATE NOT NULL,
DepartmentID int NOT NULL,
PRIMARY KEY(EmployeeID),
FOREING KEY(PostalCodeID) REFERENCES PostalCode (PostalCodeID));

/*Department*/
CREATE TABLE Department (
DepartmentID int NOT NULL,
Name varchar(255) NULL,
EmployeeID int NOT NULL,
LocationID int NOT NULL,
PRIMARY KEY (DepartmentID),
FOREING KEY (EmployeeID) REFERENCES Employee (EmployeeID),
FOREING KEY (LocationID) REFERENCES 'Location' (LocationID));

ALTER TABLE Employee
ADD FOREING KEY (DepartmentID) REFERENCES Department (DepartmentID);

/*Project*/
CREATE TABLE Project (
ProjectID int NOT NULL,
Name varchar(255) NULL,
DepartmentID int NOT NULL,
PRIMARY KEY (ProjectID),
FOREING KEY (DepartmentID) REFERENCES Department (DepartmentID));

/*WorksOn*/
CREATE TABLE WorksOn(
EmployeeID int NOT NULL,
ProjectID int NOT NULL,
Hours Float NULL,
Constraint PK_WorksOn PRIMARY KEY (EmployeeID,ProjectID),
FOREING KEY (EmployeeID) REFERENCES Employee (EmployeeID),
FOREING KEY (ProjectID) REFERENCES Project (ProjectID));
```

```sql
/*PostalCode*/
CREATE TABLE PostalCode(
PostalCodeID int NOT NULL,
City varchar (255),
PRIMARY KEY (PostalCodeID));

/*Location*/
CREATE TABLE 'Location' (
LocationID int NOT NULL,
Name varchar (255) NOT NULL,
PRIMARY KEY(LocationID));
```