Airport Management System

-- Airport Management System Schema

-- Table to store information about airlines

CREATE TABLE Airlines (

AirlineID INT AUTO\_INCREMENT PRIMARY KEY,

Name VARCHAR(255) NOT NULL,

Country VARCHAR(100) NOT NULL,

FoundedYear YEAR,

IATA\_Code CHAR(2) NOT NULL UNIQUE,

ICAO\_Code CHAR(3) NOT NULL UNIQUE

);

-- Table to store airport details

CREATE TABLE Airports (

AirportID INT AUTO\_INCREMENT PRIMARY KEY,

Name VARCHAR(255) NOT NULL,

City VARCHAR(100) NOT NULL,

Country VARCHAR(100) NOT NULL,

IATA\_Code CHAR(3) NOT NULL UNIQUE,

ICAO\_Code CHAR(4) NOT NULL UNIQUE

);

-- Table to store flight details

CREATE TABLE Flights (

FlightID INT AUTO\_INCREMENT PRIMARY KEY,

AirlineID INT NOT NULL,

FlightNumber VARCHAR(10) NOT NULL,

OriginAirportID INT NOT NULL,

DestinationAirportID INT NOT NULL,

DepartureTime DATETIME NOT NULL,

ArrivalTime DATETIME NOT NULL,

Status ENUM('Scheduled', 'Delayed', 'Cancelled', 'Departed', 'Arrived') DEFAULT 'Scheduled',

FOREIGN KEY (AirlineID) REFERENCES Airlines(AirlineID) ON DELETE CASCADE,

FOREIGN KEY (OriginAirportID) REFERENCES Airports(AirportID) ON DELETE CASCADE,

FOREIGN KEY (DestinationAirportID) REFERENCES Airports(AirportID) ON DELETE CASCADE

);

-- Table to store passenger information

CREATE TABLE Passengers (

PassengerID INT AUTO\_INCREMENT PRIMARY KEY,

FirstName VARCHAR(100) NOT NULL,

LastName VARCHAR(100) NOT NULL,

PassportNumber VARCHAR(20) UNIQUE,

Nationality VARCHAR(100),

DateOfBirth DATE,

Gender ENUM('Male', 'Female', 'Other')

);

-- Table to manage flight bookings

CREATE TABLE Bookings (

BookingID INT AUTO\_INCREMENT PRIMARY KEY,

FlightID INT NOT NULL,

PassengerID INT NOT NULL,

SeatNumber VARCHAR(5),

BookingDate DATETIME NOT NULL DEFAULT CURRENT\_TIMESTAMP,

Status ENUM('Confirmed', 'Cancelled') DEFAULT 'Confirmed',

FOREIGN KEY (FlightID) REFERENCES Flights(FlightID) ON DELETE CASCADE,

FOREIGN KEY (PassengerID) REFERENCES Passengers(PassengerID) ON DELETE CASCADE

);

-- Table to store employee information

CREATE TABLE Employees (

EmployeeID INT AUTO\_INCREMENT PRIMARY KEY,

FirstName VARCHAR(100) NOT NULL,

LastName VARCHAR(100) NOT NULL,

Position VARCHAR(100) NOT NULL,

HireDate DATE NOT NULL,

Salary DECIMAL(10, 2) NOT NULL,

AirportID INT NOT NULL,

FOREIGN KEY (AirportID) REFERENCES Airports(AirportID) ON DELETE CASCADE

);

-- Table to store baggage information

CREATE TABLE Baggage (

BaggageID INT AUTO\_INCREMENT PRIMARY KEY,

BookingID INT NOT NULL,

Weight DECIMAL(5, 2) NOT NULL,

Dimensions VARCHAR(50),

FOREIGN KEY (BookingID) REFERENCES Bookings(BookingID) ON DELETE CASCADE

);

-- Table to store flight crew assignments

CREATE TABLE FlightCrew (

CrewID INT AUTO\_INCREMENT PRIMARY KEY,

FlightID INT NOT NULL,

EmployeeID INT NOT NULL,

Role ENUM('Pilot', 'Co-Pilot', 'Cabin Crew', 'Engineer') NOT NULL,

FOREIGN KEY (FlightID) REFERENCES Flights(FlightID) ON DELETE CASCADE,

FOREIGN KEY (EmployeeID) REFERENCES Employees(EmployeeID) ON DELETE CASCADE

);

-- Table to store maintenance schedules

CREATE TABLE Maintenance (

MaintenanceID INT AUTO\_INCREMENT PRIMARY KEY,

AircraftID VARCHAR(50) NOT NULL,

ScheduledDate DATE NOT NULL,

CompletedDate DATE,

Status ENUM('Scheduled', 'In Progress', 'Completed') DEFAULT 'Scheduled',

Notes TEXT

);

-- Table to track airport facilities

CREATE TABLE Facilities (

FacilityID INT AUTO\_INCREMENT PRIMARY KEY,

AirportID INT NOT NULL,

Name VARCHAR(100) NOT NULL,

Description TEXT,

FOREIGN KEY (AirportID) REFERENCES Airports(AirportID) ON DELETE CASCADE

);