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-- HW 1 - SQL DDL

-- Replace nnn with your ID
USE BMGT402_DB_Student_119

-- <Q1>
-- DROP TABLE statements here
-- <A1>
DROP TABLE IF EXISTS [HW.Booking];
DROP TABLE IF EXISTS [HW.Guest];
DROP TABLE IF EXISTS [HW.Room];
DROP TABLE IF EXISTS [HW.Hotel];

-- CREATE TABLE and INSERT INTO statements here

-- <Q2>
-- CREATE TABLE [HW.Hotel] here
-- attributes: hotelNo, hotelName, hotelCity
-- Use CHAR and VARCHAR datatypes.
-- <A2>
CREATE TABLE [HW.Hotel] (
    hotelNo CHAR(4) NOT NULL,
    hotelName VARCHAR(225),
    hotelCity VARCHAR(225)
CONSTRAINT pk_Hotel_hotelNo PRIMARY KEY (hotelNo)
);
-- <Q3>
-- Complete three more insertions for ch02, dc01 and fb02.
-- ch02 Phoenix Park London
-- dc01 Latham Berlin
-- fb02 Watergate Paris
-- <A3>
INSERT INTO [HW.Hotel] VALUES
    ('ch02', 'Phoenix Park', 'London'),
    ('dc01', 'Latham', 'Berlin'),
    ('fb02', 'Watergate', 'Paris'),
    ('fb01', 'Grosvenor', 'London'), ('ch01', 'Omni Shoreham', 'London');

-- <Q4>
-- CREATE TABLE [HW.Room] here
-- attributes: roomNo, hotelNo, roomType, roomPrice
-- Use INT, CHAR, VARCHAR and DECIMAL(5,2) datatypes.
-- Name following FK constraint for hotelNo:
-- CONSTRAINT fk_Room_hotelNo ??? ON DELETE CASCADE ON UPDATE CASCADE

-- <A4>
CREATE TABLE [HW.Room] (
    roomNo CHAR(4) NOT NULL,
    hotelNo CHAR(4),
    roomType VARCHAR(20),
    roomPrice DECIMAL(5,2),
    CONSTRAINT pk_Room_roomNo PRIMARY KEY (roomNo, hotelNo),
    CONSTRAINT fk_Room_hotelNo FOREIGN KEY (hotelNo)
        REFERENCES [HW.Hotel](hotelNo)
        ON DELETE CASCADE ON UPDATE CASCADE
);

-- <Q5>

```

-- What is the business rule (in English) that was used for the above referential constraint?

-- Choose between (a) and (b):

-- (a) When a hotel is closed and deleted from the database, all rooms in that hotel should be deleted from the database.

-- (b) A hotel cannot be deleted or updated if rooms from that hotel are in the database.

-- <A5>

-- Answer: (a) When a hotel is closed and deleted from the database, all rooms in that hotel should be deleted from the database.

-- <Q6>

-- Choose between (c) and (d):

-- (c) When a hotel identifier is changed and updated from the database, the information for all rooms in that hotel should be updated accordingly.

-- (d) A hotel identifier cannot be change or updated if rooms from that hotel are in the database.

-- <A6>

-- Answer: (d) A hotel identifier cannot be changed or updated if rooms from that hotel are in the database. ♥

-- <Q7>

-- Complete nine more insertions for fb02, ch01, ch02 and dc01.

-- 1001 fb02 single 58.00

-- 1101 fb02 double 86.00

-- 1001 ch01 single 29.99

-- 1101 ch01 family 59.99

-- 701 ch02 single 10.00

-- 801 ch02 double 15.00

-- 901 dc01 single 18.00

-- 1001 dc01 double 30.00

-- 1101 dc01 family 35.00

-- <A7>

```
INSERT [HW.Room] (roomNo, hotelNo, roomType, roomPrice) VALUES
(501, 'fb01', 'single', 19.00), (601, 'fb01', 'double', 29.00), (701, 'fb01',
'family', 39.00),
(1001, 'fb02', 'single', 58.00),
(1101, 'fb02', 'double', 86.00),
(1001, 'ch01', 'single', 29.99),
(1101, 'ch01', 'family', 59.99),
(701, 'ch02', 'single', 10.00),
(801, 'ch02', 'double', 15.00),
(901, 'dc01', 'single', 18.00),
(1001, 'dc01', 'double', 30.00),
(1101, 'dc01', 'family', 35.00);
```

-- <Q8>

-- CREATE TABLE [HW.Guest] here

-- attributes: guestNo, guestName, guestAddress

-- Use CHAR and VARCHAR datatypes.

-- <A8>

```
CREATE TABLE [HW.Guest] (
    guestNo CHAR(5) NOT NULL,
    guestName VARCHAR(225),
    guestAddress VARCHAR(225)
```

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        CONSTRAINT pk_Guest_guestNo PRIMARY KEY (guestNo),
    );
```

```
-- <Q9>
-- Complete four more insertions for 10004, 10005, 10006 and 10007.
-- 10004 Joe Keogh      2 Fergus Dr, Aberdeen
-- 10005 Carol Farrel  6 Achray St, Glasgow
-- 10006 Tina Murphy   63 Well St, Glasgow
-- 10007 Tony Shaw     12 Park Pl, Glasgow
```

```
-- <A9>
INSERT INTO [HW.Guest] VALUES
    ('10001', 'John Kay', '56 High St, London'),
    ('10002', 'Mike Ritchie', '18 Tain St, London'),
    ('10003', 'Mary Tregear', '5 Tarbot Rd, Aberdeen'),
    ('10004', 'Joe Keogh', '2 Fergus Dr, Aberdeen'),
    ('10005', 'Carol Farrel', '6 Achray St, Glasgow'),
    ('10006', 'Tina Murphy', '63 Well St, Glasgow'),
    ('10007', 'Tony Shaw', '12 Park Pl, Glasgow');
```

```
-- <Q10>
-- CREATE TABLE [HW.Booking] here
-- attributes: hotelNo, roomNo, dateIn, dateOut, guestNo
-- Use CHAR, INT and DATE datatypes.
```

```
-- <A10>
CREATE TABLE [HW.Booking](
    hotelNo CHAR(4) NOT NULL,
    roomNo CHAR(4) NOT NULL,
    dateIn DATE NOT NULL,
    dateOut DATE,
    guestNo CHAR(5),
    CONSTRAINT pk_Booking_roomNo_hotelNo_dateIn PRIMARY KEY (roomNo, hotelNo,
dateIn),
```

```
    CONSTRAINT fk_Booking_roomNo_hotelNo FOREIGN KEY (roomNo, hotelNo)
        REFERENCES [HW.Room](roomNo, hotelNo)
        ON DELETE NO ACTION ON UPDATE NO ACTION,
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```
    CONSTRAINT fk_Booking_guestNo FOREIGN KEY (guestNo)
        REFERENCES [HW.Guest](guestNo)
        ON DELETE NO ACTION ON UPDATE NO ACTION
```

```
);
```

```
-- <Q11>
-- Do you want to use ON DELETE CASCADE or the default ON DELETE NO ACTION?
-- Provide the business rule for each FK that you wish to use in English as
comment.
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```
-- <A11>
-- Answer: For all foreign keys in [HW.Booking], ON DELETE CASCADE is used.
-- Business Rule: When a booking is deleted, associated records in [HW.Hotel],
[HW.Room], and [HW.Guest] should also be deleted.
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-- <Q12>
-- Do you want to use ON UPDATE CASCADE or the default ON UPDATE NO ACTION?
```

-- Provide the business rule for each FK that you wish to use in English as comment.

-- <A12>

-- Answer: For all foreign keys in [HW.Booking], ON UPDATE CASCADE is used.

-- Business Rule: When a primary key is updated in [HW.Hotel], [HW.Room], or [HW.Guest], corresponding changes should be reflected in [HW.Booking].

-- <Q13>

-- Complete four more insertions for ch01, ch02 and dc01.

-- ch01 1101 2023-04-21 NULL 10006

-- ch02 801 2023-04-25 2023-05-06 10002

-- dc01 1001 2023-05-20 NULL 10003

-- dc01 1001 2023-05-13 2023-05-15 10007

-- <A13>

INSERT INTO [HW.Booking] VALUES

('fb01', 501, '2023-04-01', '2023-04-08', '10001'), ('fb01', 601, '2023-04-15', '2023-05-15', '10004'), ('fb01', 501, '2023-05-02', '2023-05-07', '10005'), ('fb01', 601, '2023-05-16', '2023-05-29', '10002'), ('fb01', 701, '2023-05-01', NULL, '10001'),

('fb02', 1001, '2023-04-05', '2023-04-10', '10003'), ('fb02', 1101, '2023-05-12', '2023-05-30', '10005'),

('ch01', 1101, '2023-04-21', NULL, '10006'), ('ch02', 801, '2023-04-25', '2023-05-06', '10002'), ('dc01', 1001, '2023-05-20', NULL, '10003'), ('dc01', 1001, '2023-05-13', '2023-05-15', '10007');

-- Verifications

SELECT \* FROM [HW.Hotel];

SELECT \* FROM [HW.Room];

SELECT \* FROM [HW.Guest];

SELECT \* FROM [HW.Booking];