

### Number 1

```
SELECT Price, Type
FROM Hotel h
JOIN Room r
ON h.HotelNo = r.HotelNo
WHERE HotelName = 'Palace hotel'
```

	Price	Type
1	100	S
2	120	S
3	200	D
4	230	D

### Number 2

```
SELECT g.guestName, g.guestAddress
FROM Guest g
JOIN Booking b ON g.guestNo = b.guestNo
JOIN Hotel h ON b.hotelNo = h.hotelNo
WHERE h.hotelName = 'Palace hotel'
AND b.dateFrom <= GETDATE()
AND b.dateTo >= GETDATE()
```

guestName	guestAddress

### Number 3

```
SELECT r.roomNo, r.type, r.price, g.guestName
FROM Room r
JOIN Booking b ON r.roomNo = b.roomNo AND r.hotelNo = b.hotelNo
JOIN Guest g ON b.guestNo = g.guestNo
JOIN Hotel h ON r.hotelNo = h.hotelNo
WHERE h.hotelName = 'Palace hotel' AND GETDATE() BETWEEN b.dateFrom AND b.dateTo
```

roomNo	type	price	guestName

### Number 4

```
SELECT r.roomNo, r.type, r.price
FROM Room r
WHERE r.hotelNo = (SELECT hotelNo FROM Hotel WHERE hotelName = 'Palace hotel')
AND r.roomNo NOT IN (
```

```

SELECT b.roomNo
FROM Booking b
WHERE b.hotelNo = r.hotelNo AND GETDATE() BETWEEN b.dateFrom AND b.dateTo
);

```

	roomNo	type	price
1	H3R1	S	100
2	H3R2	S	120
3	H3R3	D	200
4	H3R4	D	230

## Number 5

```

SELECT h.hotelNo, h.hotelName, SUM(r.price) AS lostIncome
FROM Hotel h
JOIN Room r ON h.hotelNo = r.hotelNo
LEFT JOIN Booking b ON r.roomNo = b.roomNo AND b.dateFrom <= GETDATE() AND b.dateTo >=
GETDATE()
GROUP BY h.hotelNo, h.hotelName;

```

	hotelNo	hotelName	lostIncome
1	H1	Marriott hotel	425
2	H2	Sheraton hotel	500
3	H3	Palace hotel	682.5
4	H4	Hotel Centre point	1500
5	H5	Hotel Tuli international	1240
6	H6	Pride hotel	300
7	H7	Tempe Hotel	150
8	H8	Boston Hotel	600

## Number 6

```

SELECT h.hotelName, r.Type, COUNT(*) AS NumberOfBookings
FROM Hotel h
JOIN Room r ON h.hotelNo = r.hotelNo
JOIN Booking b ON r.roomNo = b.roomNo
WHERE h.City LIKE '%Fairfield%'
GROUP BY h.hotelName, r.Type
ORDER BY NumberOfBookings DESC

```

	hotelName	Type	NumberOfBookings
1	Palace hotel	S	3
2	Palace hotel	D	2
3	Hotel Centre point	D	2
4	Hotel Centre point	S	1

## Number 7

```
INSERT INTO Hotel (hotelNo, hotelName, City) VALUES
('H7', 'Tempe Hotel', 'Tempe, AZ'),
('H8', 'Boston Hotel', 'Boston, MA');
```

```
INSERT INTO Room (RoomNo, HotelNo, Type, Price) VALUES
('H7R1', 'H7', 'S', 150),
('H7R2', 'H8', 'D', 600);
```

```
INSERT INTO Guest (guestNo, guestName, guestAddress) VALUES
('G6', 'Collin Arnold', '2000 N Court St Fairfield, IA'),
('G7', 'Samuel Leon', '389 Lettleton ave, Hingham, MA');
```

```
INSERT INTO Booking (hotelNo, guestNo, dateFrom, dateTo, roomNo) VALUES
('H7', 'G6', '2024-01-15', '2024-01-20', 'H7R1'),
('H7', 'G7', '2024-02-10', '2024-02-15', 'H7R2');
```

```
(2 rows affected)

(2 rows affected)

(2 rows affected)

(2 rows affected)

Completion time: 2024-02-29T23:35:44.3839340-06:00
100 %
```

## Number 8

```
UPDATE Room
SET price = price * 1.05
WHERE HotelNo = (SELECT HotelNo FROM Hotel WHERE HotelName = 'Palace hotel')
```

```
(4 rows affected)
```

```
Completion time: 2024-02-29T23:40:28.4679314-06:00
```

## Number 9

```
CREATE TABLE BookingArchive (  
    hotelNo VARCHAR(10),  
    guestNo VARCHAR(10),  
    dateFrom DATE,  
    dateTo DATE,  
    roomNo VARCHAR(10)  
)
```

```
INSERT INTO BookingArchive ( hotelNo, guestNo, dateFrom, dateTo, roomNo)  
SELECT hotelNo, guestNo, dateFrom, dateTo, roomNo  
FROM Booking  
WHERE dateFrom < '2024-01-01'
```

```
DELETE FROM Booking  
WHERE dateFrom < '2024-01-01'
```

	hotelNo	guestNo	dateFrom	dateTo	roomNo
1	H1	G1	2023-01-01	2023-01-20	H1R1
2	H2	G2	2023-08-21	2023-08-29	H2R2
3	H3	G1	2023-07-05	2023-09-18	H3R4
4	H3	G3	2023-05-19	NULL	H3R1
5	H3	G4	2023-09-05	2023-09-29	H3R3
6	H3	G5	2023-09-15	2023-09-20	H3R2
7	H4	G2	2023-03-03	2023-03-10	H4R1
8	H4	G2	2023-07-03	2023-08-03	H4R2
9	H5	G3	2023-04-13	2023-04-20	H5R2
10	H6	G4	2023-05-01	2023-05-20	H6R1

## Number10

In a database with Orders and Customers tables, ON DELETE CASCADE ensures that deleting a customer record also deletes associated orders, maintaining data integrity between the tables.