

Department of Electrical Engineering, UET Lahore
EE432: Computer Networks

Course Instructor: Dr. Naveed Nawaz	Dated:
Session: Fall 2024	Semester: 7th

LAB 11 Introduction to Aggregation, Group By, and JOINS

Name	Roll. No.	Total Marks	Obtained Marks	Viva Marks
Ayesha Ahmad	2021-EE-052			

Checked on: _____

Signature: _____

Procedure

Please execute the following script, understand each line, draw the conceptual schema diagram for given relations and then start on the questions listed below:

```
create schema if not exists hotelBooking;
use hotelBooking;
```

```
create table hotel( hotelno varchar(10) primary key, hotelname varchar(20), city varchar(20) );
insert into hotel values('fb01', 'Grosvenor', 'London');
insert into hotel values('fb02', 'Watergate', 'Paris');
insert into hotel values('ch01', 'Omni Shoreham', 'London');
insert into hotel values('ch02', 'Phoenix Park', 'London');
insert into hotel values('dc01', 'Latham', 'Berlin');
```

```
create table room( roomno numeric(5), hotelno varchar(10), type varchar(10), price decimal(5,2),
primary key (roomno, hotelno), foreign key (hotelno) REFERENCES hotel(hotelno) );
insert into room values(501, 'fb01', 'single', 19);
insert into room values(601, 'fb01', 'double', 29);
insert into room values(701, 'fb01', 'family', 39);
insert into room values(1001, 'fb02', 'single', 58);
insert into room values(1101, 'fb02', 'double', 86);
insert into room values(1001, 'ch01', 'single', 29.99);
insert into room values(1101, 'ch01', 'family', 59.99);
insert into room values(701, 'ch02', 'single', 10);
insert into room values(801, 'ch02', 'double', 15);
insert into room values(901, 'dc01', 'single', 18);
insert into room values(1001, 'dc01', 'double', 30);
insert into room values(1101, 'dc01', 'family', 35);
```

```
create table guest( guestno numeric(5), guestname varchar(20), guestaddress varchar(50), primary
key (guestno) );
insert into guest values(10001, 'John Kay', '56 High St, London');
insert into guest values(10002, 'Mike Ritchie', '18 Tain St, London');
insert into guest values(10003, 'Mary Tregear', '5 Tarbot Rd, Aberdeen');
insert into guest values(10004, 'Joe Keogh', '2 Fergus Dr, Aberdeen');
insert into guest values(10005, 'Carol Farrel', '6 Achray St, Glasgow');
insert into guest values(10006, 'Tina Murphy', '63 Well St, Glasgow');
insert into guest values(10007, 'Tony Shaw', '12 Park Pl, Glasgow');
```

```
create table booking( hotelno varchar(10), guestno numeric(5), datefrom datetime, dateto datetime,
roomno numeric(5), primary key (hotelno, guestno, datefrom), foreign key (roomno, hotelno)
REFERENCES room(roomno, hotelno), foreign key (guestno) REFERENCES guest(guestno) );
insert into booking values('fb01', 10001, '02-04-01', '02-04-08', 501);
insert into booking values('fb01', 10004, '04-04-15', '04-05-15', 601);
insert into booking values('fb01', 10005, '03-05-02', '03-05-07', 501);
insert into booking values('fb01', 10001, '04-05-01', null, 701);
insert into booking values('fb02', 10003, '09-04-05', '10-04-04', 1001);
insert into booking values('ch01', 10006, '04-04-21', null, 1101);
insert into booking values('ch02', 10002, '04-04-25', '04-05-06', 801);
insert into booking values('dc01', 10007, '06-05-13', '06-05-15', 1001);
insert into booking values('dc01', 10003, '12-05-20', null, 1001);
```

#	Time	Action	Message	Duration / Fetch
⚠	1 17:39:24	create schema if not exists hotelBooking	1 row(s) affecte...	0.078 sec
✓	2 17:39:25	use hotelBooking	0 row(s) affected	0.000 sec
✓	3 17:39:25	drop table if exists 'hotelBooking'. 'booking'	0 row(s) affected	0.563 sec
✓	4 17:39:25	drop table if exists 'hotelBooking'. 'room'	0 row(s) affected	0.062 sec
✓	5 17:39:25	drop table if exists 'hotelBooking'. 'guest'	0 row(s) affected	0.032 sec
✓	6 17:39:25	drop table if exists 'hotelBooking'. 'hotel'	0 row(s) affected	0.032 sec
✓	7 17:39:25	create table hotel(hotelno varchar(10) primary key, hotelname varchar(2...	0 row(s) affected	0.046 sec
✓	8 17:39:25	insert into hotel values(fb01, 'Grosvenor', 'London')	1 row(s) affected	0.032 sec
✓	9 17:39:25	insert into hotel values(fb02, 'Watergate', 'Paris')	1 row(s) affected	0.015 sec
✓	10 17:39:25	insert into hotel values(ch01, 'Omni Shoreham', 'London')	1 row(s) affected	0.016 sec
✓	11 17:39:25	insert into hotel values(ch02, 'Phoenix Park', 'London')	1 row(s) affected	0.016 sec
✓	12 17:39:25	insert into hotel values(dc01, 'Latham', 'Berlin')	1 row(s) affected	0.046 sec
✓	13 17:39:25	create table room(roomno numeric(5), hotelno varchar(10), type varchar...	0 row(s) affected	0.157 sec
✓	14 17:39:26	insert into room values(501, fb01, 'single', 19)	1 row(s) affected	0.015 sec
✓	15 17:39:26	insert into room values(601, fb01, 'double', 29)	1 row(s) affected	0.016 sec
✓	16 17:39:26	insert into room values(701, fb01, 'family', 39)	1 row(s) affected	0.016 sec
✓	17 17:39:26	insert into room values(1001, fb02, 'single', 58)	1 row(s) affected	0.015 sec
✓	18 17:39:26	insert into room values(1101, fb02, 'double', 86)	1 row(s) affected	0.016 sec
✓	19 17:39:26	insert into room values(1001, ch01, 'single', 29.99)	1 row(s) affected	0.031 sec
✓	20 17:39:26	insert into room values(1101, ch01, 'family', 59.99)	1 row(s) affected	0.031 sec
✓	21 17:39:26	insert into room values(701, ch02, 'single', 10)	1 row(s) affected	0.125 sec
✓	22 17:39:26	insert into room values(801, ch02, 'double', 15)	1 row(s) affected	0.032 sec
✓	23 17:39:26	insert into room values(901, dc01, 'single', 18)	1 row(s) affected	0.015 sec
✓	24 17:39:26	insert into room values(1001, dc01, 'double', 30)	1 row(s) affected	0.016 sec
✓	25 17:39:26	insert into room values(1101, dc01, 'family', 35)	1 row(s) affected	0.031 sec
✓	26 17:39:26	create table guest(guestno numeric(5), guestname varchar(20), guest...	0 row(s) affected	0.156 sec
✓	27 17:39:26	insert into guest values(10001, 'John Kay', '56 High St, London')	1 row(s) affected	0.016 sec
✓	28 17:39:26	insert into guest values(10002, 'Mike Ritchie', '18 Tain St, London')	1 row(s) affected	0.016 sec
✓	29 17:39:26	insert into guest values(10003, 'Mary Tregear', '5 Tarbot Rd, Aberdeen')	1 row(s) affected	0.031 sec
✓	30 17:39:26	insert into guest values(10004, 'Joe Keogh', '2 Fergus Dr, Aberdeen')	1 row(s) affected	0.015 sec
✓	31 17:39:26	insert into guest values(10005, 'Carol Farrel', '6 Achray St, Glasgow')	1 row(s) affected	0.016 sec
✓	32 17:39:26	insert into guest values(10006, 'Tina Murphy', '63 Well St, Glasgow')	1 row(s) affected	0.031 sec
✓	33 17:39:26	insert into guest values(10007, 'Tony Shaw', '12 Park Pl, Glasgow')	1 row(s) affected	0.063 sec
✓	34 17:39:26	create table booking(hotelno varchar(10), guestno numeric(5), datefrom da...	0 row(s) affected	0.079 sec
✓	35 17:39:26	insert into booking values(fb01, 10001, '02-04-01', '02-04-08', 501)	1 row(s) affected	0.031 sec
✓	36 17:39:26	insert into booking values(fb01, 10004, '04-04-15', '04-05-15', 601)	1 row(s) affected	0.031 sec
✓	37 17:39:26	insert into booking values(fb01, 10005, '03-05-02', '03-05-07', 501)	1 row(s) affected	0.016 sec
✓	38 17:39:26	insert into booking values(fb01, 10001, '04-05-01', null, 701)	1 row(s) affected	0.031 sec
✓	39 17:39:26	insert into booking values(fb02, 10003, '09-04-05', '10-04-04', 1001)	1 row(s) affected	0.047 sec
✓	40 17:39:27	insert into booking values(ch01, 10006, '04-04-21', null, 1101)	1 row(s) affected	0.031 sec
✓	41 17:39:27	insert into booking values(ch02, 10002, '04-04-25', '04-05-06', 801)	1 row(s) affected	0.016 sec
✓	42 17:39:27	insert into booking values(dc01, 10007, '06-05-13', '06-05-15', 1001)	1 row(s) affected	0.015 sec
✓	43 17:39:27	insert into booking values(dc01, 10003, '12-05-20', null, 1001)	1 row(s) affected	0.016 sec

hotelbooking

- Tables
 - booking
 - guest
 - hotel
 - room
- Views
- Stored Procedures
- Functions

booking

- Columns
 - hotelno
 - guestno
 - datefrom
 - dateto
 - roomno
- Indexes
- Foreign Keys
- Triggers

guest

- Columns
 - guestno
 - guestname
 - guestaddress
- Indexes
- Foreign Keys
- Triggers

hotel

- Columns
 - hotelno
 - hotelname
 - city
- Indexes
- Foreign Keys
- Triggers

room

- Columns
 - roomno
 - hotelno
 - type
 - price
- Indexes
- Foreign Keys
- Triggers

Exercise:

1. List the names and addresses of all guests in London, alphabetically ordered by name.

```

74 -- TASK 1: List the names and addresses of all guests in London, alphabetically ordered by name.
75 • SELECT guestname, guestaddress
76 FROM guest
77 WHERE guestno in (
78     SELECT guestno
79     FROM booking AS b
80     INNER JOIN hotel AS h
81     ON b.hotelno = h.hotelno
82     WHERE city = 'London'
83 )
84 ORDER BY guestname ASC;

```

	guestname	guestaddress
▶	Carol Farrel	6 Achray St, Glasgow
	Joe Keogh	2 Fergus Dr, Aberdeen
	John Kay	56 High St, London
	Mike Ritchie	18 Tain St, London
	Tina Murphy	63 Well St, Glasgow

Output

#	Time	Action	Message	Duration / Fetch
577	11:06:29	SELECT guestname, guestaddress FROM guest WHERE guestno in (SELECT guestno FROM booking b INNER JOIN hotel h ON b.hotelno = h.hotelno WHERE city = 'London') ORDER BY guestname ASC;	5 row(s) returned	0.000 sec / 0.000 sec

2. Display the names of all the hotels along with the number of rooms present in each of them.

```

86 -- TASK 2: Display the names of all the hotels along with the number of rooms present in each of them.
87 • SELECT h.hotelname, count(r.roomno) AS NumberOfRooms
88 FROM hotel AS h
89     INNER JOIN room AS r
90     ON h.hotelno = r.hotelno
91 GROUP BY hotelname;

```

	hotelname	NumberOfRooms
▶	Omni Shoreham	2
	Phoenix Park	2
	Latham	3
	Grosvenor	3
	Watergate	2

Output

#	Time	Action	Message	Duration / Fetch
585	11:14:39	SELECT h.hotelname, count(r.roomno) AS NumberOfRooms FROM hotel AS h INNER JOIN room AS r ON h.hotelno = r.hotelno GROUP BY hotelname LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

3. Display the AVG price of each hotel situated in London.

```

93 -- TASK 3: Display the AVG price of each hotel situated in London.
94 • SELECT h.hotelname, avg(r.price) AS AveragePrice
95 FROM hotel AS h
96     INNER JOIN room AS r
97     ON h.hotelno = r.hotelno
98 WHERE h.city = 'London'
99 GROUP BY hotelname;

```

	hotelname	AveragePrice
▶	Omni Shoreham	44.990000
	Phoenix Park	12.500000
	Grosvenor	29.000000

Output

#	Time	Action	Message	Duration / Fetch
589	11:21:11	SELECT h.hotelname, avg(r.price) AS AveragePrice FROM hotel AS h INNER JOIN room AS r ON h.hotelno = r.hotelno WHERE h.city = 'London' GROUP BY hotelname	3 row(s) returned	0.000 sec / 0.000 sec

4. Display the most expensive double, single and family rooms respectively.

```

101 -- TASK 4: Display the most expensive double, single and family rooms respectively.
102 • SELECT r.type, h.hotelname, r.roomno, r.price as MaxPrice
103 FROM hotel AS h
104     INNER JOIN room AS r
105     ON h.hotelno = r.hotelno
106 WHERE (r.type, r.price) in (
107     SELECT type, max(price) AS MaxPrice
108     FROM room
109     GROUP BY type
110 );

```

	type	hotelname	roomno	MaxPrice
▶	family	Omni Shoreham	1101	59.99
	single	Watergate	1001	58.00
	double	Watergate	1101	86.00

Output

#	Time	Action	Message	Duration / Fetch
594	11:46:27	SELECT r.type, h.hotelname, r.roomno, r.price as MaxPrice FROM hotel AS h INNER JOIN room AS r ON h.hotelno = r.hotelno WHERE (r.type, r.price) in (SELECT type, max(price) AS MaxPrice FROM room GROUP BY type)	3 row(s) returned	0.000 sec / 0.000 sec

5. Display hotelname, cityname along with distinct number of room types available in each of them.

```

112 -- TASK 5: Display hotelname, cityname along with distinct number of room types
113 -- available in each of them.
114 • SELECT h.hotelname, h.city, count(r.type) AS NumberOfRoomTypes
115 FROM hotel AS h
116     INNER JOIN room AS r
117     ON h.hotelno = r.hotelno
118 GROUP BY h.hotelno;

```

	hotelname	city	NumberOfRoomTypes
►	Omni Shoreham	London	2
	Phoenix Park	London	2
	Latham	Berlin	3
	Grosvenor	London	3
	Watergate	Paris	2

#	Time	Action	Message	Duration / Fetch
541	17:55:37	SELECT h.hotelname, h.city, count(r.type) AS NumberOfRoomTypes FROM hotel AS h IN...	5 row(s) returned	0.000 sec / 0.000 sec

6. Display the name and city of the hotel where guests from London are staying. The list should not contain any hotel twice.

```

119 -- TASK 6: Display the name and city of the hotel where guests from London are staying.
120 -- The list should not contain any hotel twice.
121 • SELECT distinct hotelname, city
122 FROM hotel
123 WHERE hotelno in (
124     SELECT b.hotelno
125     FROM booking AS b
126         INNER JOIN guest AS g
127         ON b.guestno = g.guestno
128     WHERE g.guestaddress LIKE '%London%'
129 );

```

	hotelname	city
►	Phoenix Park	London
	Grosvenor	London

#	Time	Action	Message	Duration / Fetch
542	17:55:37	SELECT distinct hotelname, city FROM hotel WHERE hotelno in (SELECT b.hotelno F...	2 row(s) returned	0.000 sec / 0.000 sec

7. Display the name, city of all the hotels along with the number of reservations it has, in descending order.

```

132 -- TASK 7: Display the name, city of all the hotels along with the number of
133 -- reservations it has, in descending order.
134 • SELECT h.hotelname, h.city, count(b.hotelno) AS NumberOfReservations
135 FROM hotel AS h
136     INNER JOIN booking AS b
137     ON h.hotelno = b.hotelno
138 GROUP BY b.hotelno
139 ORDER BY NumberOfReservations DESC;

```

	hotelname	city	NumberOfReservations
►	Grosvenor	London	4
	Latham	Berlin	2
	Omni Shoreham	London	1
	Phoenix Park	London	1
	Watergate	Paris	1

#	Time	Action	Message	Duration / Fetch
543	17:55:37	SELECT h.hotelname, h.city, count(b.hotelno) AS NumberOfReservations FROM hotel AS ...	5 row(s) returned	0.000 sec / 0.000 sec

8. Display the names of all the guests who have not provided with the end date of their reservations.

```

141 -- TASK 8: Display the names of all the guests who have not provided with the
142 -- end date of their reservations.
143 • SELECT guestname
144 FROM guest
145 WHERE guestno in (
146     SELECT guestno
147     FROM booking
148     WHERE dateto IS NULL
149 );

```

	guestname
►	John Kay
	Mary Tregear
	Tina Murphy

#	Time	Action	Message	Duration / Fetch
544	17:55:37	SELECT guestname FROM guest WHERE guestno in (SELECT guestno FROM bookin...	3 row(s) returned	0.000 sec / 0.000 sec

9. Display the HotelName and RoomNo which was reserved in either year 2003 or 2004, also display the Guest No of the respective guest.

```

151  -- TASK 9: Display the HotelName and RoomNo which was reserved in either year
152  -- 2003 or 2004, also display the Guest No of the respective guest.
153  • SELECT h.hotelname, b.roomno, b.guestno
154  FROM hotel AS h
155       INNER JOIN booking AS b
156       ON h.hotelno = b.hotelno
157  WHERE YEAR(datefrom) BETWEEN 2003 AND 2004;

```

	hotelname	roomno	guestno
▶	Omni Shoreham	1101	10006
	Phoenix Park	801	10002
	Grosvenor	701	10001
	Grosvenor	601	10004
	Grosvenor	501	10005

#	Time	Action	Message	Duration / Fetch
✓ 545	17:55:37	SELECT h.hotelname, b.roomno, b.guestno FROM hotel AS h INNER JOIN booking AS b ...	5 row(s) returned	0.000 sec / 0.000 sec

10. Display the name of the hotel and city which has not been reserved.

```

159  -- TASK 10: Display the name of the hotel and city which has not been reserved.
160  -- -- Never reserved
161  • SELECT hotelname, city
162  FROM hotel
163  WHERE hotelno NOT IN (
164      SELECT distinct hotelno
165      FROM booking
166  );

```

	hotelname	city
▶	Phoenix Park	London
	Latham	Berlin
	Grosvenor	London
	Watergate	Paris

```

168  -- -- Currently not reserved
169  • SELECT distinct h.hotelname, h.city
170  FROM hotel h
171       LEFT JOIN booking b
172       ON h.hotelno = b.hotelno
173  WHERE b.guestno IS NULL OR b.dateto < NOW();

```

#	Time	Action	Message	Duration / Fetch
✓ 546	17:55:37	SELECT hotelname, city FROM hotel WHERE hotelno NOT IN (SELECT distinct hotelno ...	0 row(s) returned	0.000 sec / 0.000 sec

```

168  -- -- Currently not reserved
169  • SELECT distinct h.hotelname, h.city
170  FROM hotel h
171       LEFT JOIN booking b
172       ON h.hotelno = b.hotelno
173  WHERE b.guestno IS NULL OR b.dateto < NOW();

```

	hotelname	city
▶	Phoenix Park	London
	Latham	Berlin
	Grosvenor	London
	Watergate	Paris

#	Time	Action	Message	Duration / Fetch
✓ 562	19:51:03	SELECT distinct h.hotelname, h.city FROM hotel h LEFT JOIN booking b ON h.hotelno...	4 row(s) returned	0.015 sec / 0.000 sec

11. How many different guests have made bookings till May, 2015?

```

167  -- TASK 11: How many different guests have made bookings till May, 2015?
168  • SELECT count(distinct guestno) AS NumberOfDifferentGuestsBookingTillMay2015
169  FROM booking
170  WHERE datefrom < '2015-05-01 00:00:00';

```

	NumberOfDifferentGuestsBookingTillMay2015
▶	7

#	Time	Action	Message	Duration / Fetch
✓ 547	17:55:37	SELECT count(distinct guestno) AS NumberOfDifferentGuestsBookingTillMay2015 FROM...	1 row(s) returned	0.000 sec / 0.000 sec

12. What is the total revenue per night from all double rooms?

```

172  -- TASK 12: What is the total revenue per night from all double rooms?
173  • SELECT AVG(price)
174  FROM room
175  WHERE type = 'double';

```

	AVG(price)
▶	40.000000

#	Time	Action	Message	Duration / Fetch
✓ 548	17:55:37	SELECT AVG(price) FROM room WHERE type = 'double' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

13. How many different guests have made bookings for August?

```

177  -- TASK 13: How many different guests have made bookings for August?
178  •  SELECT count(distinct guestno) AS NumberOfDifferentGuestsBookingInAugust
179      FROM booking
180      WHERE MONTH(datefrom) = 8;

```

	NumberOfDifferentGuestsBookingInAugust
▶	0

#	Time	Action	Message	Duration / Fetch
549	17:55:37	SELECT count(distinct guestno) AS NumberOfDifferentGuestsBookingInAugust FROM bo...	1 row(s) returned	0.000 sec / 0.000 sec

14. List the price and type of all rooms at the 'Avari' Hotel in Lahore.

```

182  -- TASK 14: List the price and type of all rooms at the 'Avari' Hotel in Lahore.
183  •  SELECT type, price
184      FROM room
185      WHERE hotelno in (
186          SELECT hotelno
187          FROM hotel
188          WHERE hotelname = 'Avari' AND city = 'Lahore'
189      );

```

	type	price
▶		

#	Time	Action	Message	Duration / Fetch
550	17:55:38	SELECT type, price FROM room WHERE hotelno in (SELECT hotelno FROM hotel ...	0 row(s) returned	0.000 sec / 0.000 sec

As there is no 'Avari' Hotel in the database, so replaced with 'Latham'

```

199  -- -- As there is no 'Avari' Hotel in the database, so replaced with 'Latham'
200  •  SELECT type, price
201      FROM room
202      WHERE hotelno in (
203          SELECT hotelno
204          FROM hotel
205          WHERE hotelname = 'Latham' AND city = 'Berlin'
206      );

```

	type	price
▶	single	18.00
	double	30.00
	family	35.00

#	Time	Action	Message	Duration / Fetch
565	20:00:59	SELECT type, price FROM room WHERE hotelno in (SELECT hotelno FROM hotel ...	3 row(s) returned	0.016 sec / 0.000 sec

15. List all guests currently staying at the 'Marriott' Hotel. ('system date' is used to determine current date)

```

191  -- TASK 15: List all guests currently staying at the 'Marriott' Hotel.
192  -- ('system date' is used to determine current date)
193  •  SELECT guestname
194      FROM guest
195      WHERE guestno in (
196          SELECT guestno
197          FROM booking
198          WHERE (dateto > NOW() OR dateto IS NULL) AND hotelno in (
199              SELECT hotelno
200              FROM hotel
201              WHERE hotelname = 'Marriott'
202          )
203      );

```

	guestname
▶	

#	Time	Action	Message	Duration / Fetch
551	17:55:38	SELECT guestname FROM guest WHERE guestno in (SELECT guestno FROM booki...	0 row(s) returned	0.000 sec / 0.000 sec

As there is no 'Marriott' Hotel in the database, so replaced with 'Omni Shoreham'

```

222  -- -- As there is no 'Marriott' Hotel in the database, so replaced with 'Omni Shoreham'
223  • SELECT guestname
224  FROM guest
225  WHERE guestno in (
226      SELECT guestno
227      FROM booking
228      WHERE (dateto > NOW() OR dateto IS NULL) AND hotelno in (
229          SELECT hotelno
230          FROM hotel
231          WHERE hotelname = 'Omni Shoreham'
232      )
233  );

```

guestname
Tina Murphy

#	Time	Action	Message	Duration / Fetch
✓ 568	20:04:03	SELECT guestname FROM guest WHERE guestno in (SELECT guestno FROM booking...	0 row(s) returned	0.015 sec / 0.000 sec

16. What is the total income from bookings for the 'Hotel Inn' Hotel today?

```

235  -- TASK 16: What is the total income from bookings for the 'Hotel Inn' Hotel today?
236  -- -- Shows just the Revenue Generated by required hotel
237  • SELECT SUM(r.price) AS RevenueGeneratedToday
238  FROM room AS r
239      INNER JOIN booking AS b
240      ON r.roomno = b.roomno AND r.hotelno = b.hotelno
241  WHERE ( b.dateto IS NULL OR b.dateto > CURDATE() )
242      AND b.hotelno in (
243          SELECT hotelno
244          FROM hotel
245          WHERE hotelname = 'Hotel Inn'
246      )
247  ORDER BY r.hotelno ASC;

```

RevenueGeneratedToday
NULL

#	Time	Action	Message	Duration / Fetch
✓ 585	20:29:51	SELECT SUM(r.price) AS RevenueGeneratedToday FROM room AS r INNER JOIN booking...	1 row(s) returned	0.000 sec / 0.000 sec

As there is no 'Hotel Inn' Hotel in the database, so replaced with 'Omni Shoreham'

```

249  -- -- As there is no 'Hotel Inn' Hotel in the database, so replaced with 'Omni Shoreham'
250  • SELECT SUM(r.price) AS RevenueGeneratedToday
251  FROM room AS r
252      INNER JOIN booking AS b
253      ON r.roomno = b.roomno AND r.hotelno = b.hotelno
254  WHERE ( b.dateto IS NULL OR b.dateto > CURDATE() )
255      AND b.hotelno in (
256          SELECT hotelno
257          FROM hotel
258          WHERE hotelname = 'Omni Shoreham'
259      )
260  ORDER BY r.hotelno ASC;

```

RevenueGeneratedToday
59.99

#	Time	Action	Message	Duration / Fetch
✓ 588	20:32:54	SELECT SUM(r.price) AS RevenueGeneratedToday FROM room AS r INNER JOIN booking...	1 row(s) returned	0.016 sec / 0.000 sec

17. List the rooms which are currently unoccupied at the 'Hotel Inn' Hotel.

```

292  -- TASK 17: List the rooms which are currently unoccupied at the 'Hotel Inn' Hotel.
293  •  SELECT r.roomno AS VacantRoomNo
294      FROM room r
295      LEFT JOIN booking b
296      ON b.datefrom = (SELECT b.datefrom FROM booking b
297                       WHERE r.roomno = b.roomno AND r.hotelno = b.hotelno
298                       ORDER BY b.datefrom DESC
299                       LIMIT 1)
300  WHERE b.guestno IS NOT NULL AND IFNULL(b.dateto, NOW()) < NOW() AND b.hotelno in (
301      SELECT hotelno
302      FROM hotel
303      WHERE hotelname = 'Hotel Inn'
304  );

```

#	Time	Action	Message	Duration / Fetch
478	08:04:46	SELECT r.roomno AS VacantRoomNo FROM ro...	0 row(s) returned	0.000 sec / 0.000 sec

As there is no 'Hotel Inn' Hotel in the database, so replaced with 'Grosvenor'

```

306  -- -- As there is no 'Hotel Inn' Hotel in the database, so replaced with 'Grosvenor'
307  •  SELECT r.roomno AS VacantRoomNo
308      FROM room r
309      LEFT JOIN booking b
310      ON b.datefrom = (SELECT b.datefrom FROM booking b
311                       WHERE r.roomno = b.roomno AND r.hotelno = b.hotelno
312                       ORDER BY b.datefrom DESC
313                       LIMIT 1)
314  WHERE b.guestno IS NOT NULL AND IFNULL(b.dateto, NOW()) < NOW() AND b.hotelno in (
315      SELECT hotelno
316      FROM hotel
317      WHERE hotelname = 'Grosvenor'
318  );

```

#	Time	Action	Message	Duration / Fetch
479	08:04:55	SELECT r.roomno AS VacantRoomNo FROM ro...	2 row(s) returned	0.016 sec / 0.000 sec

18. What is the lost income from unoccupied rooms at the 'Hotel Inn' Hotel?

```

320  -- TASK 18: What is the lost income from unoccupied rooms at the 'Hotel Inn' Hotel?
321  •  SELECT SUM(r.price) AS IncomeLostToday
322      FROM room r
323      LEFT JOIN booking b
324      ON b.datefrom = (SELECT b.datefrom FROM booking b
325                       WHERE r.roomno = b.roomno AND r.hotelno = b.hotelno
326                       ORDER BY b.datefrom DESC
327                       LIMIT 1)
328  WHERE b.guestno IS NOT NULL AND IFNULL(b.dateto, NOW()) < NOW() AND b.hotelno in (
329      SELECT hotelno
330      FROM hotel
331      WHERE hotelname = 'Hotel Inn'
332  );

```

#	Time	Action	Message	Duration / Fetch
483	08:10:11	SELECT SUM(r.price) AS IncomeLostToday FR...	1 row(s) returned	0.000 sec / 0.000 sec

As there is no 'Hotel Inn' Hotel in the database, so replaced with 'Grosvenor'

```

334 -- -- As there is no 'Hotel Inn' Hotel in the database, so replaced with 'Grosvenor'
335 • SELECT SUM(r.price) AS IncomeLostToday
336 FROM room r
337     LEFT JOIN booking b
338     ON b.datefrom = (SELECT b.datefrom FROM booking b
339                      WHERE r.roomno = b.roomno AND r.hotelno = b.hotelno
340                      ORDER BY b.datefrom DESC
341                      LIMIT 1)
342 WHERE b.guestno IS NOT NULL AND IFNULL(b.dateto, NOW()) < NOW() AND b.hotelno in (
343     SELECT hotelno
344     FROM hotel
345     WHERE hotelname = 'Grosvenor'
346 );

```

	IncomeLostToday
►	48.00

#	Time	Action	Message	Duration / Fetch
✓ 485	08:11:26	SELECT SUM(r.price) AS IncomeLostToday FR...	1 row(s) returned	0.000 sec / 0.000 sec

19. What is the lost income from unoccupied rooms at each hotel today?

```

348 -- TASK 19: What is the lost income from unoccupied rooms at each hotel today?
349 • SELECT h.hotelname, SUM(r.price) AS IncomeLostToday
350 FROM room r
351     LEFT JOIN booking b
352     ON b.datefrom = (SELECT b.datefrom FROM booking b
353                      WHERE r.roomno = b.roomno AND r.hotelno = b.hotelno
354                      ORDER BY b.datefrom DESC
355                      LIMIT 1)
356     LEFT JOIN hotel AS h
357     ON r.hotelno = h.hotelno
358 WHERE b.guestno IS NULL OR (b.datefrom IS NOT NULL AND IFNULL(b.dateto, NOW()) < NOW())
359 GROUP BY h.hotelno;

```

	hotelname	IncomeLostToday
►	Grosvenor	48.00
	Phoenix Park	25.00
	Latham	53.00
	Omni Shoreham	29.99
	Watergate	144.00

#	Time	Action	Message	Duration / Fetch
✓ 487	08:13:06	SELECT h.hotelname, SUM(r.price) AS IncomeL...	5 row(s) returned	0.000 sec / 0.000 sec

20. For each hotel with more than two different types of rooms, what is the lost income from unoccupied rooms?

```

361 -- TASK 20: For each hotel with more than two different types of rooms, what is the lost income from unoccupied rooms?
362 • SELECT h.hotelname, SUM(r.price) AS IncomeLostToday
363 FROM room r
364     LEFT JOIN booking b
365     ON b.datefrom = (SELECT b.datefrom FROM booking b
366                      WHERE r.roomno = b.roomno AND r.hotelno = b.hotelno
367                      ORDER BY b.datefrom DESC
368                      LIMIT 1)
369     LEFT JOIN hotel AS h
370     ON r.hotelno = h.hotelno
371 WHERE (b.guestno IS NULL OR (b.datefrom IS NOT NULL AND IFNULL(b.dateto, NOW()) < NOW()))
372     AND r.hotelno IN (SELECT hotelno FROM room
373                      GROUP BY hotelno
374                      HAVING COUNT(type) > 2)
375 GROUP BY h.hotelno;

```

	hotelname	IncomeLostToday
►	Grosvenor	48.00
	Latham	53.00

#	Time	Action	Message	Duration / Fetch
✓ 489	08:16:11	SELECT h.hotelname, SUM(r.price) AS IncomeLostToday FROM roo...	2 row(s) returned	0.000 sec / 0.000 sec

Assessment Rubrics for EE432: Computer Networks Lab 11

Student Name: _____

Roll Number: _____

Method:

Lab report evaluation and instructor observation during lab sessions.

Outcomes Assessed:

- a. Ability to conduct experiments as well as to analyze and interpret data
- b. Ability to adhere to safety and disciplinary rules
- c. Ability to use the techniques, skills and modern engineering tools necessary for engineering practice

Performance	Exceeds expectation (5-4)	Meets expectation (3-2)	Does not meet expectation (1)	Marks
Realization of experiment (a)	Downloads and installs required software and sets up the system according to the experiment requirements	Needs guidance to set up the system according to the experiment requirements	Incapable of selecting relevant software to the experiment and unable to setup the system with required software tools	
Conducting experiment (a, c)	Carries out each procedural step in a satisfactory manner and studies outputs of the software application rigorously	Needs assistance or guidance to proceed through experiment steps, studies outputs with minor errors in interpretation	Unable to carry out procedural steps and make any useful observations of outputs	
Laboratory safety and disciplinary rules (b)	Observes lab safety rules; adheres to the lab disciplinary guidelines aptly	Observes safety rules and disciplinary guidelines with minor deviations	Disregards lab safety and disciplinary rules	
Data collection (c)	Completes data collection from the experiment setup by following procedural steps, ensures that the data is entered in the lab manual according to the specified instructions	Completes data collection with minor error and enters data in lab manual with slight deviation from guidelines	Fails at collecting data by giving proper inputs and observing output states of experiment setup, unable to fill the lab manual properly	
Data analysis (a, c)	Analyzes the data obtained from experiment thoroughly and accurately verifies it with theoretical understanding, accounts for any discrepancy in data from theory with sound explanation	Analyzes data with minor error and correlates it with theoretical values reasonably. Attempts to account for any discrepancy in data from theory	Unable to establish the relationship between practical and theoretical values and lacks the theoretical understanding to explain any discrepancy in data	