**LECTURE 5 PART 1:**

CREATE TABLE Hotel (

hotelNo INT NOT NULL UNIQUE,

hotelName VARCHAR(15) NOT NULL,

city VARCHAR(15) NOT NULL,

PRIMARY KEY (hotelNo)

);

CREATE TABLE Room (

roomNo INT NOT NULL UNIQUE,

hotelNo INT NOT NULL,

type VARCHAR(15),

price DECIMAL(5,2) NOT NULL,

CHECK (price >= 50.00 AND price <= 500.00),

CHECK (type == 'Standard' OR type == 'Deluxe' OR type == 'Suite'),

CHECK (roomNo >= 1 AND roomNo <= 9999),

PRIMARY KEY(roomNo, hotelNo),

FOREIGN KEY (hotelNo) REFERENCES Hotel(hotelNo)

);

CREATE TABLE Booking (

hotelNo INT NOT NULL,

guestNo INT NOT NULL,

dateFrom DATE NOT NULL,

dateTo DATE NOT NULL,

roomNo INT NOT NULL,

CHECK (dateFrom < dateTo),

PRIMARY KEY(hotelNo, dateFrom, roomNo),

FOREIGN KEY (hotelNo) REFERENCES Hotel(hotelNo),

FOREIGN KEY (roomNo) REFERENCES Room(roomNo)

);

CREATE TABLE Guest (

guestNo INT NOT NULL UNIQUE,

guestName VARCHAR(15) NOT NULL,

guestAddress VARCHAR(30) NOT NULL,

PRIMARY KEY(guestNo)

);

**LECTURE 5 PART 2:**

**Q1.**

SELECT p.Pnumber, p.Dnum, e.Lname, e.Address, e.Bdate

FROM PROJECT p

JOIN DEPARTMENT d ON p.dnum = d.dNumber

JOIN EMPLOYEE e ON e.Ssn = d.Mgr\_ssn

WHERE p.plocation = ‘Stafford’;

***RESULTS:***

10|4|Wallace|291 Berry, Bellaire, TX|1941-06-20

30|4|Wallace|291 Berry, Bellaire, TX|1941-06-20

**Q2.**

SELECT e.Fname, E.Lname, e.Address

FROM EMPLOYEE e

JOIN DEPARTMENT d ON Dnumber = e.Dno

WHERE d.Dname = “Research”

***RESULTS:***

John|Smith|731 Fondren, Houston, TX

Franklin|Wong|638 Voss, Houston, TX

Ramesh|Narayan|975 Fire Oak, Humble, TX

Joyce|English|5631 Rice, Houston, TX

**Q3.**

SELECT Dlocation

FROM DEPT\_LOCATIONS dl

JOIN DEPARTMENT d ON dl.Dnumber = d.dNumber

WHERE d.Dname = 'Research' ;

***RESULTS:***

Bellaire

Houston

Sugarland

**Q4.**

SELECT e1.Fname, e1.Lname, e2.Fname, e2.Lname

FROM EMPLOYEE e1

JOIN DEPARTMENT d ON E1.dNo = d.Dnumber

JOIN EMPLOYEE as e2 ON d.Mgr\_ssn = e2.Ssn ;

***RESULTS:***

John|Smith|Franklin|Wong

Franklin|Wong|Franklin|Wong

Alicia|Zelaya|Jennifer|Wallace

Jennifer|Wallace|Jennifer|Wallace

Ramesh|Narayan|Franklin|Wong

Joyce|English|Franklin|Wong

Ahmad|Jabbar|Jennifer|Wallace

James|Borg|James|Borg

**Q5.**

SELECT DISTINCT e.Salary

FROM EMPLOYEE e ;

***RESULTS:***

30000

40000

25000

43000

38000

55000

**Q6.**

SELECT e.Fname, e.Lname

FROM EMPLOYEE e

WHERE e.Address LIKE '%Houston%' ;

***RESULTS:***

John|Smith

Franklin|Wong

Joyce|English

Ahmad|Jabbar

James|Borg

**Q7.**

SELECT e.Fname, e.Lname

FROM EMPLOYEE e

WHERE e.Bdate LIKE '197%' ;

***RESULTS:***

Joyce|English

**LECTURE 6 PART 1:**

**Q1.**

// Relation in terms of the Table Hotel...

SELECT \*

FROM Hotel ;

**Q2.**

SELECT g.guestName, g.guestAddress

FROM Guest g

WHERE g.guestAddress LIKE '%Seattle%'

ORDER BY guestName ASC ;

**Q3.**

SELECT COUNT(hotelNo)

FROM Hotel;

**Q4.**

SELECT COUNT(guestNo)

FROM Booking

WHERE (dateFrom >= 3/01/%%%% AND dateFrom =< 3/31/%%%%)

OR (dateTo >= 3/01/%%%% AND dateTo =< 3/31/%%%%) ;

**Q5.**

SELECT city, COUNT(hotelNo)

FROM Hotel

GROUP BY city ;

**Q6.**

SELECT AVG(price), hotelNo

FROM Room

WHERE type = 'Standard'

GROUP BY hotelNo ;

**Q7.**

SELECT g.guestName

FROM Booking b

JOIN Hotel h ON b.hotelNo = b.hotelNo

JOIN Guest g ON b.guestNo = g.guestNo

WHERE b.dateFrom <= CURRENT\_DATE AND

CURRENT\_DATE <= b.dateTo AND hotelName LIKE '%Hilton%' ;

**Q8.**

SELECT COUNT(r.roomNo), h.hotelName

FROM Hotel h

JOIN Room r ON h.hotelNo = r.hotelNo

WHERE city LIKE '%Las Vegas%'

GROUP BY h.hotelName ;

**Q9.**

SELECT hotelNo

FROM Room

WHERE type LIKE '%Deluxe%'

GROUP BY hotelNo

HAVING COUNT(roomNo) > 2 ;

**Q10.**

SELECT b.roomNo

FROM Booking b

LEFT JOIN Hotel h ON b.hotelNo = b.hotelNo

WHERE NOT IN (b.dateFrom <= CURRENT\_DATE AND

CURRENT\_DATE <= b.dateTo ) AND hotelName LIKE '%Hilton%' ;

**LECTURE 6 PART 2:**

-- Returns Correct Answer

SELECT d.Dname, COUNT(\*)

FROM DEPARTMENT d, EMPLOYEE e

WHERE d.dnumber = e.dNo AND e.salary >30000 AND e.dno IN (

SELECT e.dno

FROM EMPLOYEE e

GROUP BY e.dNo

HAVING COUNT(\*) >2

)

GROUP BY d.Dname ;

-- RETURNS TOTAL NUMBER OF EMPLOYEES

SELECT COUNT(e.SSN), e.dno

FROM EMPLOYEE e

LEFT JOIN (

SELECT Count(Ssn) as Ssn\_Count, Dno

FROM EMPLOYEE

GROUP BY Dno

HAVING COUNT(Dno) > 2

) as Sub ON Sub.Dno = e.Dno

WHERE Sub.Ssn\_Count > 2 AND e.Salary > 30000;

**LECTURE 6 Part 3:**

-- CREATE TABLES FOR TESTING

CREATE TABLE test (

id INT NOT NULL UNIQUE,

name VARCHAR(15) ,

salary DECIMAL(10,2) ,

PRIMARY KEY (id)

) ;

CREATE TABLE test2 (

id INT NOT NULL UNIQUE,

name VARCHAR(15) ,

salary DECIMAL(10,2) ,

PRIMARY KEY (id)

) ;

**Q1.**

*a) Correct Syntax below:*

Insert into test

VALUES(1, 'John', 30);

*b) Correct Syntax below:*

Insert into test(id, name)

VALUES(2, 'John');

*c) Correct Syntax below (remove 'values' and 'as'):*

Insert into test

SELECT \*

FROM test2;

*d) Correct Syntax below:*

DELETE FROM test1

WHERE id = 1;

DELETE FROM test2

WHERE id = 1;

*e) Correct Syntax below:*

UPDATE test3

SET id = 3

WHERE name = 'John' ;

**Q2.**

UPDATE EMPLOYEE

SET Salary = Salary \* 1.25

WHERE Fname = 'John' AND Lname = 'Smith' ;