Oracle SQL Assignment

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Emp-id = 581359

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--- Question 1
CREATE TABLE salesman (
   salesman_id INTEGER PRIMARY KEY,
   name VARCHAR2(30),
   city VARCHAR2(30),
   commission DECIMAL
);
drop table salesman;

INSERT INTO salesman (salesman_id, name, city, commission) VALUES (5001, 'James Hoog', 'New York', 0.15);
INSERT INTO salesman (salesman_id, name, city, commission) VALUES (5002, 'Nail Knite', 'Paris', 0.13);
INSERT INTO salesman (salesman_id, name, city, commission) VALUES (5005, 'Pit Alex', 'London', 0.11);
INSERT INTO salesman (salesman_id, name, city, commission) VALUES (5006, 'Mc Lyon', 'Paris', 0.14);
INSERT INTO salesman (salesman_id, name, city, commission) VALUES (5007, 'Paul Adam', 'Rome', 0.13);
INSERT INTO salesman (salesman_id, name, city, commission) VALUES (5003, 'Lauson Hen', 'San Jose', 0.12);

select * from salesman;

create table customer (customer_id integer primary key,
cust_name varchar2(30),
city varchar2(30),
grade integer,
salesman_id integer);
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INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3002, 'Nick Rimando', 'New York', 100, 5001);

INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3007, 'Brad Davis', 'New York', 200, 5001);

INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3005, 'Graham Zusi', 'California', 200, 5002);

INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3008, 'Julian Green', 'London', 300, 5002);

INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3004, 'Fabian Johnson', 'Paris', 300, 5006);

INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3009, 'Geoff Cameron', 'Berlin', 100, 5003);

INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3003, 'Jozy Altidor', 'Moscow', 200, 5005);

INSERT INTO customer (customer_id, cust_name, city, grade, salesman_id) VALUES (3001, 'Brad Guzan', 'London', NULL, 5007);


select * from customer;


SELECT s.name AS salesman_name, c.cust_name, c.city

FROM salesman s

JOIN customer c ON s.city = c.city;



--- Question 2

CREATE TABLE employees (

   employee_id INTEGER PRIMARY KEY,

   first_name VARCHAR2(50),

   last_name VARCHAR2(50),

   salary DECIMAL,

   manager_id INTEGER,
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    department_id INTEGER
);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (163, 'John', 'Doe', 5000, NULL, 10);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (101, 'Payam', 'Reza', 7500, NULL, 20);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (102, 'Alice', 'Smith', 6000, 163, 10);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (103, 'Bob', 'Johnson', 9000, 163, 20);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (104, 'Charlie', 'Williams', 4000, 101, 30);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (105, 'David', 'Brown', 5500, 101, 30);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (106, 'Eve', 'Davis', 8000, 102, 10);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (107, 'Frank', 'Miller', 9500, 101, 20);

INSERT INTO employees (employee_id, first_name, last_name, salary, manager_id, department_id)
VALUES (108, 'Grace', 'Wilson', 4200, 103, 30);


select * from employees;



SELECT first_name, last_name
FROM employees
WHERE salary > (SELECT salary FROM employees WHERE employee_id = 163);


CREATE TABLE department (
    department_id INTEGER PRIMARY KEY,
    department_name VARCHAR2(50)
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);

INSERT INTO department (department_id, department_name) VALUES (10, 'Sales');
INSERT INTO department (department_id, department_name) VALUES (20, 'Marketing');
INSERT INTO department (department_id, department_name) VALUES (30, 'HR');

select * from department;

SELECT first_name, last_name, department_id
FROM employees e
WHERE salary = (
   SELECT MIN(salary)
   FROM employees
   WHERE department_id = e.department_id
);

SELECT first_name, last_name, employee_id, salary
FROM employees
WHERE manager_id = (
   SELECT employee_id
   FROM employees
   WHERE first_name = 'Payam'
);


-- Question 3
CREATE TABLE Book (
   Bookid VARCHAR2(5) PRIMARY KEY,
   Bookname VARCHAR2(20),
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    Category VARCHAR2(30)
);


INSERT INTO Book VALUES ('8101', 'Science Revolution', 'Journal');
INSERT INTO Book VALUES ('8102', 'Brain Teasers', 'Aptitude');
INSERT INTO Book VALUES ('8103', 'India Today', 'Magazine');
INSERT INTO Book VALUES ('8184', 'Tech World', 'Journal');
INSERT INTO Book VALUES ('8105', 'Bizz World', 'Magazine');
INSERT INTO Book VALUES ('8106', 'The Quests', 'Aptitude');

select * from Book;

CREATE TABLE customer (
    custid VARCHAR2(5) PRIMARY KEY,
    custname VARCHAR2(10)
);

INSERT INTO customer VALUES ('C101', 'Jack');
INSERT INTO customer VALUES ('C102', 'Anne');
INSERT INTO customer VALUES ('C103', 'Jane');
INSERT INTO customer VALUES ('C104', 'Maria');

select * from customer;

CREATE TABLE purchase (
    purchaseid VARCHAR2(5) PRIMARY KEY,
    custid VARCHAR2(5) REFERENCES customer(custid),
    bookid VARCHAR2(5) REFERENCES book(Bookid),
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    purchasedate DATE
);

INSERT INTO purchase VALUES ('P201', 'C101', '8102', TO_DATE('12-Dec-19', 'DD-Mon-YY'));
INSERT INTO purchase VALUES ('P202', 'C102', '8103', TO_DATE('25-Nov-19', 'DD-Mon-YY'));
INSERT INTO purchase VALUES ('P203', 'C103', '8184', TO_DATE('12-Dec-19', 'DD-Mon-YY'));
INSERT INTO purchase VALUES ('P204', 'C104', '8105', TO_DATE('25-Nov-19', 'DD-Mon-YY'));
INSERT INTO purchase VALUES ('P205', 'C101', '8101', TO_DATE('11-Dec-19', 'DD-Mon-YY'));
INSERT INTO purchase VALUES ('P206', 'C101', '8106', TO_DATE('12-Dec-19', 'DD-Mon-YY'));

select * from purchase;



SELECT custid, COUNT(DISTINCT purchasedate) AS BOOKS
FROM purchase
GROUP BY custid
HAVING COUNT(DISTINCT purchasedate) > 1;

SELECT DISTINCT p.custid, b.Bookname
FROM purchase p
JOIN book b ON p.bookid = b.Bookid
WHERE EXISTS (
    SELECT 1
    FROM purchase p2
    JOIN book b2 ON p2.bookid = b2.Bookid
    WHERE b.Category = b2.Category
    AND p2.custid != p.custid
    AND p2.purchasedate != p.purchasedate
);
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SELECT c.custname, b.Bookname
FROM purchase p
JOIN customer c ON p.custid = c.custid
JOIN book b ON p.bookid = b.Bookid
WHERE p.purchasedate = (
   SELECT purchasedate
   FROM purchase
   WHERE custid = 'C102'
)
AND c.custid != 'C102';



---Question 4
-- Create the course table
CREATE TABLE course (
   courseid VARCHAR2(6) PRIMARY KEY CHECK (courseid LIKE 'C%'),
   coursename VARCHAR2(40),
   duration NUMBER,
   coursefee NUMBER
);

-- Create the courseregistration table
CREATE TABLE courseregistration (
   registrationid VARCHAR2(6) PRIMARY KEY CHECK (registrationid LIKE 'R%'),
   studentid VARCHAR2(6),
   courseid VARCHAR2(6) REFERENCES course(courseid),
   registrationdate DATE DEFAULT SYSDATE
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);

-- Insert sample data into the course table
INSERT INTO course VALUES ('C201', 'Advanced SQL', 5, 1200);
INSERT INTO course VALUES ('C202', 'Networking Fundamentals', 4, 1600);
INSERT INTO course VALUES ('C203', 'Cloud Computing', 7, 3500);
INSERT INTO course VALUES ('C284', 'Software Testing', 4, 2500);

-- Insert sample data into the courseregistration table
INSERT INTO courseregistration VALUES ('R501', 'S301', 'C201', TO_DATE('22-Sep-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R502', 'S302', 'C202', TO_DATE('20-Nov-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R503', 'S303', 'C202', TO_DATE('12-Oct-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R504', 'S302', 'C201', TO_DATE('27-Nov-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R505', 'S304', 'C284', TO_DATE('10-Nov-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R506', 'S305', 'C203', TO_DATE('17-Oct-17', 'DD-Mon-YY'));

-- Display the data from course and courseregistration
SELECT * FROM course;
SELECT * FROM courseregistration;


---question 5
-- Drop existing tables if they exist
DROP TABLE employee CASCADE CONSTRAINTS;
DROP TABLE doctor CASCADE CONSTRAINTS;

-- Create the employee table
CREATE TABLE employee (
    empno NUMBER PRIMARY KEY,
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    empname VARCHAR2(15) NOT NULL,
    emptype VARCHAR2(10),
    salary NUMBER,
    gender VARCHAR2(1) CHECK (gender IN ('M', 'F')),
    emailid VARCHAR2(30) UNIQUE,
    dateofjoining DATE
);

-- Create the doctor table
CREATE TABLE doctor (
    doctorid NUMBER PRIMARY KEY REFERENCES employee(empno),
    qualification VARCHAR2(15),
    specialization VARCHAR2(30),
    inpatientfee NUMBER,
    outpatientfee NUMBER
);

-- Insert sample data into the employee table
INSERT INTO employee VALUES (1002, 'Alice', 'Doctor', 95000, 'F', NULL, TO_DATE('9-Jun-15', 'DD-Mon-YY'));
INSERT INTO employee VALUES (2001, 'Henry', 'Admin', 25000, 'M', '2001henry@xyz.com', TO_DATE('10-Jun-15', 'DD-Mon-YY'));
INSERT INTO employee VALUES (1003, 'Gabrielle', 'Doctor', 110000, 'F', '1004gabrielle@xyz.com', TO_DATE('14-Aug-15', 'DD-Mon-YY'));
INSERT INTO employee VALUES (9201, 'Thomas', 'Attendant', 20000, 'M', '9201thomas@xyz.com', TO_DATE('22-Nov-15', 'DD-Mon-YY'));
INSERT INTO employee VALUES (1004, 'Tom', 'Doctor', 100000, 'M', NULL, TO_DATE('25-Dec-15', 'DD-Mon-YY'));
INSERT INTO employee VALUES (1005, 'Aldan', 'Doctor', 150000, 'M', '1002aldan@xyz.com', TO_DATE('24-Jan-16', 'DD-Mon-YY'));
```

```
INSERT INTO employee VALUES (1006, 'Nicole', 'Doctor', 90000, 'F', '1006nicole@xyz.com', TO_DATE('12-Oct-16', 'DD-Mon-YY'));

INSERT INTO employee VALUES (9204, 'Kate', 'Attendant', 20000, 'F', '9204kate@xyz.com', TO_DATE('30-Nov-16', 'DD-Mon-YY'));


-- Insert sample data into the doctor table

INSERT INTO doctor VALUES (1002, 'MS', 'Nephrology', 600, 400);

INSERT INTO doctor VALUES (1003, 'MD', 'Nephrology', 700, 500);

INSERT INTO doctor VALUES (1004, 'MS', 'Neurology', 750, 550);

INSERT INTO doctor VALUES (1005, 'MS', 'Cardiology', 800, 600);

INSERT INTO doctor VALUES (1006, 'MS', 'Gynaecology', 550, 350);


-- Display the data from doctor and employee tables

SELECT * FROM doctor;

SELECT * FROM employee;



---question 6

CREATE TABLE Book (

   book_id VARCHAR2(6) PRIMARY KEY CHECK (book_id LIKE 'B%' AND LENGTH(book_id) = 6),

   book_title VARCHAR2(50) NOT NULL,

   author_name VARCHAR2(20) NOT NULL,

   genre VARCHAR2(10) CHECK (genre IN ('Mystery', 'Thriller')),

   year_of_publication NUMBER(4) CHECK (year_of_publication BETWEEN 1000 AND 9999);



INSERT INTO Book (book_id, book_title, author_name, genre, year_of_publication)

VALUES ('B12345', 'The Silent Witness', 'John Doe', 'Mystery', 2015);
```

```
INSERT INTO Book (book_id, book_title, author_name, genre, year_of_publication)
VALUES ('B67890', 'The Dark Side', 'Jane Smith', 'Thriller', 2018);

INSERT INTO Book (book_id, book_title, author_name, genre, year_of_publication)
VALUES ('B11223', 'Crime and Punishment', 'Fyodor Dostoevsky', 'Mystery', 1866);



select * from Book;


CREATE TABLE item (
   itemcode VARCHAR2(6) PRIMARY KEY,
   itemtype VARCHAR2(30),
   description VARCHAR2(50) NOT NULL,
   price NUMBER(5,2),
   category CHAR(1)
);
INSERT INTO item (itemcode, itemtype, description, price, category) VALUES ('I1001', 'Apparel', 'T-Shirt', 499.99, 'A');
INSERT INTO item (itemcode, itemtype, description, price, category) VALUES ('I1002', 'FMCG', 'Shampoo', 249.50, 'B');
INSERT INTO item (itemcode, itemtype, description, price, category) VALUES ('I1003', 'Electronics', 'Headphones', 1999.00, 'C');
INSERT INTO item (itemcode, itemtype, description, price, category) VALUES ('I1004', 'Apparel', 'Jeans', 1499.75, 'A');
INSERT INTO item (itemcode, itemtype, description, price, category) VALUES ('I1005', 'FMCG', 'Toothpaste', 99.00, 'B');
-- 1. Add a new column 'discount' with data type NUMBER
ALTER TABLE item ADD discount NUMBER;
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```
-- 2. Modify the data type of 'description' to VARCHAR2(45) and 'category' to VARCHAR2(5)
ALTER TABLE item MODIFY description VARCHAR2(45);
ALTER TABLE item MODIFY category VARCHAR2(5);

-- 3. Rename the column 'description' to 'itemdescription'
ALTER TABLE item RENAME COLUMN description TO itemdescription;

-- 4. Remove the column 'itemtype' and drop the primary key constraint
ALTER TABLE item DROP COLUMN itemtype;

-- Since PRIMARY KEY constraint name is not given, we need to find it first before dropping:
ALTER TABLE item DROP PRIMARY KEY;
```

---question 7

Problem Statement 3:

```
DROP TABLE courseregistration CASCADE CONSTRAINTS;
DROP TABLE course CASCADE CONSTRAINTS;

CREATE TABLE course (
    courseid VARCHAR2(6) PRIMARY KEY CHECK (courseid LIKE 'C%'),
    coursename VARCHAR2(40),
    duration NUMBER,
    coursefee NUMBER
);

CREATE TABLE courseregistration (
```

```
    registrationid VARCHAR2(6) PRIMARY KEY CHECK (registrationid LIKE 'R%'),
    studentid VARCHAR2(6),
    courseid VARCHAR2(6) REFERENCES course(courseid),
    registrationdate DATE DEFAULT SYSDATE
);

INSERT INTO course VALUES ('C201', 'Advanced SQL', 5, 1200);
INSERT INTO course VALUES ('C202', 'Networking Fundamentals', 4, 1600);
INSERT INTO course VALUES ('C203', 'Cloud Computing', 7, 3500);
INSERT INTO course VALUES ('C204', 'Software Testing', 4, 2500);

INSERT INTO courseregistration VALUES ('R501', 'S301', 'C201', TO_DATE('22-Sep-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R502', 'S302', 'C202', TO_DATE('20-Nov-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R503', 'S303', 'C202', TO_DATE('12-Oct-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R504', 'S302', 'C201', TO_DATE('27-Nov-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R505', 'S304', 'C204', TO_DATE('10-Nov-17', 'DD-Mon-YY'));
INSERT INTO courseregistration VALUES ('R506', 'S305', 'C203', TO_DATE('17-Oct-17', 'DD-Mon-YY'));

SELECT * FROM course;
SELECT * FROM courseregistration;

Requirement 1:
INSERT INTO course VALUES ('C208', 'Software Engineering', 3, 1200);

Requirement 2:
INSERT INTO courseregistration (registrationid, studentid, courseid)
VALUES ('R507', 'S306', 'C204');
```

Problem Statement 4:

```
DROP TABLE employee CASCADE CONSTRAINTS;
DROP TABLE doctor CASCADE CONSTRAINTS;

CREATE TABLE employee
(
empno NUMBER PRIMARY KEY,
empname VARCHAR2(15) NOT NULL,
emptype VARCHAR2(10),
salary NUMBER,
gender VARCHAR2(1) CHECK(gender in ('M','F')),
emailid VARCHAR2(30) UNIQUE,
dateofjoining DATE);

CREATE TABLE doctor(
doctorid NUMBER PRIMARY KEY REFERENCES employee(empno),
qualification VARCHAR2(15),
specialization VARCHAR2(30),
inpatientfee NUMBER,
outpatientfee NUMBER
);

delete from doctor;
delete from employee;

Insert into employee values(1002,'Alice','Doctor',95000,'F',NULL,'9-Jun-15');
Insert into employee values(2001,'Henry','Admin',25000,'M','2001henry@xyz.com','10-Jun-15');
Insert into employee values(1003,'Gabrielle','Doctor',110000,'F','1004gabrielle@xyz.com','14-Aug-15');
```

```
Insert into employee values(9201,'Thomas','Attendant',20000,'M','9201thomas@xyz.com','22-Nov-15');
Insert into employee values(1004,'Tom','Doctor',100000,'M',NULL,'25-Dec-15');
Insert into employee values(1005,'Aldan','Doctor',150000,'M','1002aldan@xyz.com','24-Jan-16');
Insert into employee values(1006,'Nicole','Doctor',90000,'F','1006nicole@xyz.com','12-Oct-16');
Insert into employee values(9204,'Kate','Attendant',20000,'F','9204kate@xyz.com','30-Nov-16');

Insert into doctor values(1002,'MS','Nephrology',600,400);
Insert into doctor values(1003,'MD','Nephrology',700,500);
Insert into doctor values(1004,'MS','Neurology',750,550);
Insert into doctor values(1005,'MS','Cardiology',800,600);
Insert into doctor values(1006,'MS','Gynaecology',550,350);

select * from doctor;
select * from employee;

Requirement 1:
SELECT doctorid, qualification
FROM doctor
WHERE specialization IN ('Cardiology', 'Nephrology')
AND outpatientfee BETWEEN 400 AND 600
AND inpatientfee > 650;


Requirement 2:
SELECT specialization, outpatientfee
FROM doctor
WHERE outpatientfee < 500;
```

Requirement 3:

```
SELECT empno, empname, emptype
FROM employee
WHERE gender = 'F'
AND (empname LIKE '%i%' OR empname LIKE '_a%')
AND salary <= 90000;
```

Requirement 4:

```
SELECT empname, gender
FROM employee
WHERE emailid IS NOT NULL
AND TO_CHAR(dateofjoining, 'MM-YYYY') = '11-2016';
```