

<b>Program</b>	Diploma Engineering (DE)	<b>Semester - 2</b>
<b>Type of Course</b>	Professional Core	
<b>Prerequisite</b>		
<b>Course Objective</b>	This course introduces the core principles and techniques required for the database and the design of database systems. It also covers various types of databases like Distributed databases, Centralized databases, Client/Server databases and Parallel databases. Emphasis is on data dictionaries, data integrity, data modelling, and creation of tables, manipulating a database with the help of queries using SQL in ORACLE/SQL SERVER.	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE	CIA	SEE	CIA	
3	0	2	4	40	30	20	10	100

SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	<b>Introduction to Database System</b> Introduction to database management system, Applications & Advantages of Database Management System, DA-Data Administrator, DBA-Database Administrator, Roles and Responsibilities of DBA, Three Level ANSI SPARC Database Architecture and its advantages	9	20
2	<b>Database System Architecture</b> Instance, Schema & Sub-Schema, Mapping, Data Independence, Database System Architecture, Function and Services of DBMS, Data Model Types, Types of Database Systems	9	20
3	<b>Introduction to SQL</b> Types of SQL Commands, DDL, DML, DQL, DCL and TCL, Datatypes in SQL, CREATE, ALTER, INSERT, UPDATE, DELETE, DROP, TRUNCATE, SELECT, Like Predicate, Aggregate functions, Group By and Having, Order By Clause, Different types of Operators, Conversion Functions, Date Functions, String Functions	9	20
4	<b>Relational Algebra and Its implementation using SQL</b> Introduction of Relational Algebra, Relational Algebra Operations: Selection, Projection, Division, Cartesian Product, Set Operators, Rename, Joins, Sub Queries	9	20
5	<b>Entity Relational Model</b> Database design overview, E-R Model: Entities, types of entities, relationship and types of relationships, attributes, types of attributes. E-R notations, E-R diagram, extended E-R features: specialization, generalization, Disjoint (Disjoint, Non-disjoint), Participation (Total,Partial), Requirements of Key, Super Key, Candidate Key, Primary Key, Alternate Key, Foreign Key, Constraints	9	20
<b>Total</b>		<b>45</b>	<b>100</b>

Suggested Distribution Of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyze	Evaluate	Create
<b>Weightage</b>	30	50	20	0	0	0

NOTE : This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

### Course Outcomes

At the end of this course, students will be able to:

C01	<b>discuss</b> the basic elements of the database.
C02	<b>summarize</b> the database system architecture.
C03	<b>execute</b> the basic and advanced SQL Queries.
C04	<b>apply</b> the concepts of relational algebra operations and joins.
C05	<b>prepare</b> relational database design.

### Reference Books

1.	<b>Database System Concepts</b> By Abraham Silberschatz, Henry F. Korth, S. Sudarshan   McGraw-Hill
2.	<b>Database Management Systems</b> By Ramakrishnan, Gehrke   Tata McGraw-Hill
3.	<b>Fundamentals of Database Systems</b> By Navathe   Pearson Education
4.	<b>Database Systems Concepts, Design and Applications</b> By S.K. Singh   Pearson Education
5.	<b>SQL Queries for Mere Mortals</b> By John L. Viescas, Michael J. Hernandez   4th

### List of Practical

1.	<b>Introduction to SQL Server, Management Studio (Editor), Data Types, Tables, Fields &amp; Records</b> <ol style="list-style-type: none"> <li>Why Database? Advantages of Database.</li> <li>What is SQL? Components of SQL (DDL, DML, DQL)</li> <li>Introduction to Editor (SQL Server Management Studio).</li> <li>Introduction to Database, Table, Field, Row, Record.</li> <li>Introduction to various data types INT, BIGINT, CHAR, VARCHAR, FLOAT, DATETIME.</li> </ol>
2.	<b>DDL Commands</b> <ol style="list-style-type: none"> <li><b>Create Database:</b> Hospital_System_RollNo</li> <li><b>Create following tables;</b> <ol style="list-style-type: none"> <li><b>Table Name: Hospital_Detail and Display structure of table</b> Sr. No. Column Name Datatype(size) 1 H_ID int 2 H_Name varchar(50) 3 H_ContactNo bigint 4 H_Address varchar(100) 5 H_City varchar(50) 6 H_Type varchar(50) 7 H_Fire_Safety int 8 H_Canteen_Facility Int</li> <li><b>Table Name: Room_Detail and display structure of table</b> Sr. No. Column Name Datatype(size) 1 R_ID int 2 R_Number int 3 R_Availability int 4 R_Type varchar(50) 5 R_Charge float</li> <li><b>Table Name: Doctor_Detail and display structure of table</b> Sr. No. Column Name Datatype(size) 1 D_ID int 2 D_Name varchar(50) 3 D_Designation varchar(50) 4 D_Gender varchar(50) 5 D_Salary Varchar(50) 6 D_EmailID varchar(50) 7 D_ContactNo bigint 8 D_Address varchar(100) 9 D_City varchar(50) 10 H_ID int</li> <li><b>Table Name: Appointment_Detail and display structure of table</b> Sr. No. Column Name Datatype(size) 1 A_ID int 2 A_Number int 3 A_Date dateTime 4 A_Time time 5 D_ID int 6 H_ID Int</li> <li><b>Table Name: Patient_Detail and display structure of table</b> Sr. No. Column Name Datatype(size) 1 P_ID int 2 P_FirstName varchar(50) 3 P_MiddleName varchar(50) 4 P_LastName varchar(50) 5 P_ContactNo bigint 6 P_Age int 7 P_Weight float 8 P_Address varchar(100) 9 P_City varchar(50) 10 P_Gender varchar(50) 11 P_Disease varchar(100) 12 P_Disease_Remarks varchar(100) 13 P_Guardian_ContactNo bigint 14 A_ID int 15 R_ID Int 16 D_ID Int 17 H_ID Int</li> <li><b>Table Name: Bill_Detail and display structure of table</b> Sr. No. Column Name Datatype(size) 1 B_ID int 2 P_ID Int 3 R_ID Int 4 H_ID Int 5 P_AdmitDateTime dateTime 6</li> </ol> </li> </ol>

P\_DischargeDateTime dateTime 7 P\_Medicine\_Charge float 8 P\_TotalDays\_Charge float 9 P\_Doctor\_Charge float 10 P\_Total\_Amount float 11 P\_Pending\_Amount float

### 7.) Table Name: Transaction\_Detail and display structure of table

Sr. No. Column Name Datatype(size) 1 Tr\_ID int 2 Tr\_Amount\_ID varchar(50) 3 Tr\_B\_Amount float 4 Tr\_DateTime dateTime 5 Tr\_Type varchar(50) 6 B\_ID int 7 P\_ID int 8 H\_ID Int

### 3. DML Command

Insert the following records in tables which are created during the Practical No. 2

#### 1. Hospital\_Detail

H\_ID H\_Name H\_ContactNo H\_Address H\_City H\_Type H\_Fire\_Safety H\_Canteen\_Facility 101 Samarpan Hospital 7895420548 Rajkot-Morbi Highway, Rajkot Rajkot Private Hospital 1 102 Nakshatra Hospital 9856247130 Jam Tower Road, Jamnagar Jamnagar Private Hospital 0 103 Civil Hospital 7695302145 Limda Chowk, Morbi 2 Morbi Govt. Hospital 1 0 104 Amity Multispecialist Hospital 9012345678 Ravapar Road, Morbi Morbi Private Hospital 0 0 105 General Hospital 7215698430 Rajkot-Jamnagar Highway, Rajkot Rajkot Govt. Hospital 1 1

#### 2. Room Detail

R\_ID R\_Number R\_Availability R\_Type R\_Charge 2001 201 Yes AC 2000 2002 201 No Non-AC 1500 2003 501 Yes ICU 4500 2004 302 No ICU 3000 2005 505 Yes Genral 1500 2006 307 Yes ICU 4500 2007 205 No AC 2500 2008 211 Yes Non-AC 2000 2009 406 No Non-AC 1200 2010 801 Yes Genral 500

#### 3. Doctor\_Detail

D\_ID D\_Name D\_Designation D\_Gender D\_Salary D\_EmailID 3001 Mayur Ortho M 72000 [mayur@gmail.com](mailto:mayur@gmail.com) 3002 Krishna Dentist F 50000 [krishna@gmail.com](mailto:krishna@gmail.com) 3003 Ekta MD F 45300 [ekta@gov.in](mailto:ekta@gov.in) 3004 Nikhil Neurologist M 32500 [nikhil@gov.in](mailto:nikhil@gov.in) 3005 Shrey Cardiologist M 180000 [shrey@gmail.com](mailto:shrey@gmail.com) 3006 Rahul Surgeon M 70800 [rahul@gov.in](mailto:rahul@gov.in) 3007 Shyam MD M 50000 [shyam@yahoo.in](mailto:shyam@yahoo.in) 3008 Mukesh Dentist M 62000 [mukesh@gmail.com](mailto:mukesh@gmail.com) 3009 Anil Ortho M 55000 [anil@yahoo.in](mailto:anil@yahoo.in) 3010 Milan MD M 45500 [milan@gov.in](mailto:milan@gov.in)

D\_ContactNo D\_Address D\_City H\_ID 9045781540 Kothariya road, Block 11 Rajkot 102 9012345679 Ravapar road, Block 701 Morbi 101 6012345787 150 ft ring road, Block 301 Rajkot 103 8102365479 Sanala road, Block 501 Morbi 103 9154786230 Bhaktinagar street 3, Block 251 Jamnagar 104 4487552201 Near KKV Hall, Block A-101 Bhavnagar 105 6524879560 Housing Same Kanthe, Block 100 Morbi 102 7784562139 Near ST Street 2, Block 203 Jamnagar 104 8765123490 Lal Darwaja, Block 555 Rajkot 101 9874563210 Near Green garden, Block 350 Rajkot 105

#### 4. Appointment\_Detail

A\_ID A\_Number A\_Date A\_Time D\_ID H\_ID 4001 100 2023-12-10 12:25:50:000 3002 101 4002 40 2023-11-15 17:02:10:002 3001 102 4003 200 2024-01-11 16:30:30:030 3005 104 4004 120 2023-12-23 10:30:45:001 3004 103 4005 45 2024-02-03 09:45:00:000 3003 103 4006 30 2023-04-20 12:30:45:001 3007 102 4007 120 2022-08-04 10:35:20:004 3009 101 4008 100 2024-02-03 16:45:00:000 3002 101

#### 5. Patient\_Detail

P\_ID P\_FirstName P\_MiddleName P\_LastName P\_ContactNo P\_Age P\_Weight 5001 Khushbu G Patel 9043781540 38 55.25 5002 Amit R Parmar 9022345679 45 62.30 5003 Priti A Ambani 2012365787 7 56.23 5004 Payal S Vora 8302325477 36 90.50 5005 Nikhil D Patel 9125476230 72 60.00 5006 Bhavya A Jani 4480552201 22 45.28 5007 Het J Varotariya 3562479560 18 50.67 5008 Jay T Patel 7284562019 69 62.15 5009 Mehul M Joshi 7765124490 20 50.00 5010 Priya H Parmar 2597891999 49 76.25  
P\_Address P\_City P\_Gender P\_Disease P\_Disease\_Remarks Chokidhani road Rajkot G Shoulder Pain Ice Therapy Bhaktinagar bypass Surat M Brain Tumor Brain Surgery Hill station road Surat G Brain Tumor Brain Surgery Near madhappar chowk Ahmedabad G Knee joint Ice Therapy Gokul krishn hospital road Jamnagar M Tooth Break NULL SP road Ahmedabad M Back Pain Do Exercise Meera road Morbi M Heart Attack Need Heart Surgery Chandani chowk Morbi M Migraine NULL Taj road Ahmedabad M Tooth Break Extraction Alap villa Morbi G Migraine Improve sleep habit

P\_Guardian\_ContactNo A\_ID R\_ID D\_ID H\_ID 9043468140 4002 2005 3007 102 9022344679 4001 2001 3009 101 2012365777 NULL 2002 3004 103 8302225477 4005 2004 3003 103 9995476230 4004 2001 3002 101 4480552200 NULL 2001 3009 101 3562789560 4006 2006 3005 104 7009562019 NULL 2010 3002 101 7765554490 4003 2003 3008 104 9090891999 4007 2002 3004 103

#### 6. Bill\_Detail

B\_ID P\_ID R\_ID H\_ID P\_AdmitDateTime P\_DischargeDateTime 6001 5001 102 10-12-2023 12:25:50:000 11-12-2023

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12:25:50:000 6002 5002 2001 101 17-11-2023 17:02:10:002 20-11-2023 17:02:10:002 6003 5003 2002 103 15-01-2024
17:30:30:030 25-01-2024 17:30:30:030 6004 5004 2004 103 10-01-2022 11:11:00:020 16-01-2022 11:11:00:020 6005 5005 2001
101 25-12-2023 11:30:45:001 30-12-2023 11:30:45:001 6006 5006 2001 101 22-02-2021 14:15:20:004 24-02-2021 14:15:20:004
6007 5007 2006 104 07-02-2024 10:45:00:000 10-02-2024 10:45:00:000 6008 5008 2010 101 21-04-2023 13:30:20:000 27-04-
2023 13:30:20:000 6009 5009 2003 104 04-08-2022 10:45:20:004 13-08-2022 10:45:20:004 6010 5010 2002 103 04-02-2024
18:25:10:001 06-02-2024 18:25:10:001
P_Medicine_Charge P_TotalDays_Charge P_Doctor_Charge P_Total_Amount P_Pending_Amount 3255.25 1500 500.25 5255.5 2500
5600 6000 1050 12650 1000 100.56 15000 820 15920.56 0 1005.2 18000 720.56 19725.76 2500.25 754 10000 1500 12254 4000.6
6000 4000 320 10320 0 4570 13500 600.35 18670.35 6000 1600.45 3000 250 4850.45 1500.71 2600 40500 2000 45100 5000
3500 3000 400 6900 3500
```

#### 7. Transaction\_Detail

```
Tr_ID Tr_Number Tr_B_Amount Tr_DateTime Tr_Type B_ID P_ID H_ID 7001 100021 2755.5 11-12-2023 12:25:50:000 Cheque 6001
5001 102 7002 NULL 11650 NULL Cash 6002 5002 101 7003 F1402RD 15920.56 25-01-2024 17:30:30:030 Online 6003 5003 103
7004 250001 17225.51 15-01-2022 11:11:00:020 Cheque 6004 5004 103 7005 100001 8253.4 27-12-2023 11:30:45:001 Cheque
6005 5005 101 7006 eQ632aB 10320 24-02-2021 14:15:20:004 Online 6006 5006 101 7007 NULL 12670.35 NULL Cash 6007 5007
104 7008 KHT98AJ 3349.74 27-04-2023 10:30:20:000 Online 6008 5008 101 7009 500006 40100 12-08-2022 10:45:20:004 Cheque
6009 5009 104 7010 Xze57CK 3400 07-02-2024 18:25:10:001 Online 6010 5010 103
```

#### 4. CRUD operation using DDL and DML Commands

1. Add a column in Hospital\_Detail --> H\_EmailID varchar(50)
2. Write an update query for Hostel\_Detail and update tuples as follows;  
H\_ID-->H\_EmailID  
101--> samarpan@gmail.com  
102--> nakshatra@yahoo.in  
103--> civilmorbi@gov.in  
104--> amity@gmail.com  
105--> generalrajkot@gov.in
3. Add a column in Room\_Detail --> H\_ID int
4. Write an update query for Room\_Detail and update tuples as follows;  
R\_ID-->H\_ID  
2001-->101  
2002-->103  
2003-->104  
2004-->103  
2005-->102  
2006-->104  
2007-->102  
2008-->101  
2009-->105  
2010-->105
5. Update Patient Address from 'Taj road' to 'Green city main Road' whose P\_ID = 5009.
6. Delete record/s from Doctor\_Detail where D\_ID=3010.
7. Delete record/s from Appointment\_Detail where A\_ID = 4008.
8. Change the datatype from varchar to nvarchar for all tables and keep the size of 50.
9. Change datatype from datetime to date for; Appointment\_Detail --> A\_Date
10. Drop column 'P\_MiddleName' from Patient\_Detail.
11. Drop column 'D\_Gender' from Doctor\_Detail.
12. Rename column from Tr\_B\_Amount to Tr\_Bill\_Amount in Transaction\_Detail.
13. Display all Hospital\_Detail and Room\_Detail.
14. Display all R\_ID, R\_Number, R\_Availability from Room\_Detail.
15. Display all Hospital Names and contact numbers which are private hospitals from Hospital\_Detail.
16. Display the patient name, LastName, ContactNo, Disease and City who are from 'Ahmedabad'.

	<p>17. Display the Patient ID, Name, ContactNo and City from Patient_Detail who suffers from 'Tooth Break' disease.</p> <p>18. Display all details of Non-AC type Room from Room_Detail.</p> <p>19. Display all details of Doctors whose Designation is 'Ortho' from Doctor_Detail.</p> <p>20. Rename Table from Transaction_Detail to Transaction_Master.</p>
<b>5.</b>	<p><b>Aggregate Function</b></p> <ol style="list-style-type: none"> <li>Find the total number of doctors from Doctor_Detail.</li> <li>Count the patient's disease from Patient_Detail.</li> <li>Count the patient disease remarks from Patient_Detail.</li> <li>Find the sum of all pending amounts from Bill_Detail.</li> <li>Find the average of room charges from Room_Detail.</li> <li>Display max salary, min salary and average salary from Doctor_Detail.</li> </ol>
<b>6.</b>	<p><b>Aggregate Function with Group By, Having and Order by Clause</b></p> <ol style="list-style-type: none"> <li>Count the number of Room Type wise from Room_Detail.</li> <li>Count the number of Patients City wise from Student_Detail.</li> <li>Count the number of hospitals that provide canteen facilities from Hospital_Detail.</li> <li>Count the number of Patients with Diseases wise from Patient_Detail.</li> <li>Count the number of Doctor whose Designation is 'Dentist' from Doctor_Detail.</li> <li>Count the number of Transaction type wise from Transaction_Master.</li> <li>Display the Hospital name in descending order.</li> <li>Display the Doctor's name in ascending order.</li> <li>Display the Doctor's name, Mail ID, and H_ID as per salary wise (Highest at top and Lowest at bottom).</li> <li>Display Room as per charge Wise (Lowest at Top and Highest at bottom).</li> <li>Display the Patient as per age Wise (Highest at top and Lowest at bottom).</li> </ol>
<b>7.</b>	<p><b>Arithmetic and Relational Operator</b></p> <ol style="list-style-type: none"> <li>Write a query to calculate the new salary of MD after the decrement of 10% and display it with their name and Doctor ID.</li> <li>Write a query to calculate the new room charges after the increment of 7% and display it with R_Number and R_Type.</li> <li>Display a Patient name whose age is less than 40.</li> <li>Display Room type and charge where fees are &gt; 2000.</li> <li>Display D_ID, D_Name, D_EmailID from Doctor_Detail whose Designation is not 'Ortho'.</li> <li>Display P_ID, P_Name, P_ContactNo, P_City whose disease are either 'Brain Tumor' or 'Tooth Break'.</li> <li>Display Hospital Details which hospital is Private and provides a canteen facility.</li> <li>Display the doctor's name, city and Designation whose D_City is not from 'Rajkot' and 'Jamnagar'.</li> <li>Display B_ID, P_ID whose pending bill amount is greater than or equal to 3000.</li> <li>Display the doctor ID, name, city, and salary whose salary &lt;= 50000 and belongs to 'Rajkot'.</li> </ol>
<b>8.</b>	<p><b>Logical and Character Operators</b></p> <ol style="list-style-type: none"> <li>Display Room ID, availability and Fees where R_Charges is between 2000 to 5000.</li> <li>Display the Doctor ID, Name and Designation whose salary is between 40000 to 80000.</li> <li>Display patient ID, Name, ContactNo, and Disease who are either from 'Rajkot' or 'Morbi' or 'Bhavnagar' using IN Operator.</li> <li>Display Appointment ID, Appointment number, H_ID which A_Date is between 01-05-2023 to 31-12-2023.</li> <li>Display the Hospital Name where the Hostel Address starts with 'R'.</li> <li>Display the Doctor's name, city and Designation whose name ends with 'a'.</li> <li>Display patient Name, age and Disease whose Disease_remarks second last character is 'r'.</li> <li>Display the name of a doctor whose name consists 'i' in their name.</li> <li>Display Patient name, Address and ContactNo who are neither from Rajkot nor Morbi using the NOT IN operator.</li> <li>Display Bill details who admit between 01-10-2023 00:00:00:000 to 31-01-2024 00:00:00:000.</li> </ol>
<b>9.</b>	<p><b>Conversion and Date Function</b></p> <ol style="list-style-type: none"> <li>Write a query to convert a string '1234.56' to a number (Use CAST()).</li> <li>Write a query to convert a float 10.58 to an integer (Use CONVERT()).</li> </ol>

	<ol style="list-style-type: none"> <li>Display current DateTime.</li> <li>Display the P_AdmitDateTime into Date (in mm-dd-yyyy format).</li> <li>Display the P_DischargeDateTime into Date (in mm/dd/yy hh:mm:ss format).</li> <li>Display B_ID and P_AdmitDateTime (in dd Mon yyyy hh:mm:ss:nnn format).</li> <li>Calculate the number of months between '2023-08-20' and '2024-06-11'.</li> <li>Calculate the number of days between '2023-05-22' and '2023-05-31'.</li> <li>Display the number of days between P_AdmitDateTime and P_DischargeDateTime from Bill_Detail.</li> <li>Display the next date after 10 months. (Take today's date as a reference).</li> <li>Display the next date after 5 days. (Take today's date as a reference).</li> <li>Display the next date after 3 years. (Take today's date as a reference).</li> <li>Calculate your age on the basis of your DOB using the DATEDIFF Function.</li> <li>Display the name of the Patient whose age is &gt; 30.</li> </ol>
<b>10.</b>	<b>String Functions</b> <ol style="list-style-type: none"> <li>Display D_ID, D_Name and D_Address length from Doctor_Detail.</li> <li>Display Hospital name, type, city and Hospital name's length from Hospital_Detail.</li> <li>Display the Doctor's name in Upper Case and Doctor Designation in Lower Case.</li> <li>Display the first 5 digits of the Patient's Contact Number.</li> <li>Display the last 3 characters of the hospital city.</li> <li>Display 'Computer' from 'Diploma Computer, DIETDS'.</li> <li>Display 'Rajkot' from 'Darshan University, Rajkot'.</li> <li>Display 'Darshan University' instead of 'Darshan College'.</li> <li>Display Hospital Name, type and replace 'Govt.' for 'Government' for hospital type.</li> <li>Display Hospital Name and Hospital Address till ' , ' Samarpan Hospital Rajkot-Morbi Highway</li> <li>Display the Reverse of Patient Address.</li> <li>Display only Doctor's Name and Block number from Doctor's Address for example Mayur Block 11</li> </ol>
<b>11.</b>	<b>Joins</b> <ol style="list-style-type: none"> <li>Display the Hospital Name and Room type.</li> <li>Display the Hospital Name and Doctor Name.</li> <li>Display which patient stays in which Room number.</li> <li>Display the Hospital Name, Patient Name and Doctor Name.</li> <li>Display Patient Name, Appointment number and Hospital_Name.</li> <li>Display Patient Name, Bill Amount and Hospital Name.</li> <li>Display Patient Name, Disease Name, P_Total_Amount, Bill_ID whose P_Pending_Amount &gt; 3000.</li> <li>Display Room Number and Patient Name which room is not allocated to any patient using LEFT OUTER JOIN.</li> <li>Display Doctor ID, Name, P_ID using LEFT OUTER JOIN.</li> <li>Display the Appointment number, Patient ID, and Name using RIGHT OUTER JOIN.</li> <li>Display Room Number and Patient Name using FULL OUTER JOIN.</li> </ol>
<b>12.</b>	<b>Integrity Constraints</b> <ol style="list-style-type: none"> <li>Apply a Unique key to the following attributes; Hospital_Detail -&gt; H_EmailID, Doctor_Detail -&gt; D_EmailID, Transaction_Master -&gt; Tr_Amount_ID</li> <li>Apply the Primary key to the following attributes; Hospital_Detail H_ID, Room_Detail R_ID, Doctor_Detail D_ID, Appointment_Detail A_ID, Patient_Detail P_ID, Bill_Detail B_ID, Transaction_Master Tr_ID</li> <li>Apply Foreign key;</li> </ol> <p><b>Sr No. Reference key</b></p> <p><b>table Reference key</b></p> <p><b>attribute name Primary key</b></p> <p><b>table Primary key</b></p> <p><b>attribute name</b> 1. Room_Detail H_ID Hospital_Detail H_ID 2. Doctor_Detail H_ID Hospital_Detail H_ID 3. Appointment_Detail D_ID Doctor_Detail D_ID 4. Appointment_Detail H_ID Hospital_Detail H_ID 5. Patient_Detail A_ID Appointment_Detail A_ID 6. Patient_Detail R_ID Room_Detail R_ID 7. Patient_Detail D_ID Doctor_Detail D_ID 8. Patient_Detail H_ID Hospital_Detail H_ID 9.</p>

	Bill_Detail P_ID Patient_Detail P_ID 10. Bill_Detail R_ID Room_Detail R_ID 11. Bill_Detail H_ID Hospital_Detail H_ID 12. Transaction_Master B_ID Bill_Detail B_ID 13. Transaction_Master P_ID Patient_Detail P_ID 14. Transaction_Master H_ID Hospital_Detail H_ID
<b>13.</b>	<b>Sub Query</b> <ol style="list-style-type: none"> <li>1. Display the Name of Doctor who has Lowest Salary.</li> <li>2. Display the Patient ID and Name who has Highest total bill amount.</li> <li>3. Display the Name of the Doctor, contact number and city who has experience &gt; 5 years and designation is 'Dentist'.</li> <li>4. Display patient name who having appoint between 15-11-2023 to 25-02-2024.</li> <li>5. Display Doctor Name and Patient Name who are from the same city.</li> <li>6. Display Name of patient whose bill pending amount is 0.</li> </ol>
<b>14.</b>	<b>E-R Diagram</b> <ol style="list-style-type: none"> <li>1. Draw and Practice E-R Diagram on specific system.</li> </ol>