

Sr.	Practical																																																																																																		
Lab-1	<p>Introduction to SQL Server, Management Studio (Editor), DataTypes, Tables, Fields & Records</p> <ol style="list-style-type: none">1. Why Database? Advantages of Database.2. Different types of Databases & tools/editors available for it.3. What is SQL? Components of SQL (DDL, DML, DCL, DQL, TCL)4. Introduction to Editor (SQL Server Management Studio).5. Introduction to Database, Table, Field, Row, Record.6. Introduction to various data types INT, CHAR, VARCHAR, DATETIME, BIT, DECIMAL.																																																																																																		
Lab-2	<p>Implementation of Select in SQL</p> <p>Create Database with Name: BANK_INFO</p> <table><tr><th colspan="2">DEPOSIT</th></tr><tr><th>Column_Name</th><th>DataType</th></tr><tr><td>ACTNO</td><td>INT</td></tr><tr><td>CNAME</td><td>VARCHAR(50)</td></tr><tr><td>BNAME</td><td>VARCHAR(50)</td></tr><tr><td>AMOUNT</td><td>DECIMAL(8,2)</td></tr><tr><td>ADATE</td><td>DATETIME</td></tr></table> <table><tr><th colspan="2">BRANCH</th></tr><tr><th>Column_Name</th><th>DataType</th></tr><tr><td>BNAME</td><td>VARCHAR(50)</td></tr><tr><td>CITY</td><td>VARCHAR(50)</td></tr></table> <table><tr><th colspan="2">CUSTOMERS</th></tr><tr><th>Column_Name</th><th>DataType</th></tr><tr><td>CNAME</td><td>VARCHAR(50)</td></tr><tr><td>CITY</td><td>VARCHAR(50)</td></tr></table> <table><tr><th colspan="2">BORROW</th></tr><tr><th>Column_Name</th><th>DataType</th></tr><tr><td>LOANNO</td><td>INT</td></tr><tr><td>CNAME</td><td>VARCHAR(50)</td></tr><tr><td>BNAME</td><td>VARCHAR(50)</td></tr><tr><td>AMOUNT</td><td>DECIMAL(8,2)</td></tr></table> <p>DEPOSIT</p> <table><tr><th>ACTNO</th><th>CNAME</th><th>BNAME</th><th>AMOUNT</th><th>ADATE</th></tr><tr><td>101</td><td>ANIL</td><td>VRCE</td><td>1000.00</td><td>01-MAR-95</td></tr><tr><td>102</td><td>SUNIL</td><td>AJNI</td><td>5000.00</td><td>04-JAN-96</td></tr><tr><td>103</td><td>MEHUL</td><td>KAROLBAGH</td><td>3500.00</td><td>17-NOV-95</td></tr><tr><td>104</td><td>MADHURI</td><td>CHANDI</td><td>1200.00</td><td>17-DEC-95</td></tr><tr><td>105</td><td>PRMOD</td><td>M.G. ROAD</td><td>3000.00</td><td>27-MAR-96</td></tr><tr><td>106</td><td>SANDIP</td><td>ANDHERI</td><td>2000.00</td><td>31-MAR-96</td></tr><tr><td>107</td><td>SHIVANI</td><td>VIRAR</td><td>1000.00</td><td>05-SEP-95</td></tr><tr><td>108</td><td>KRANTI</td><td>NEHRU PLACE</td><td>5000.00</td><td>02-JUL-95</td></tr><tr><td>109</td><td>MINU</td><td>POWAI</td><td>7000.00</td><td>10-AUG-95</td></tr></table> <p>BRANCH</p> <table><tr><th>BNAME</th><th>CITY</th></tr><tr><td>VRCE</td><td>NAGPUR</td></tr><tr><td>AJNI</td><td>NAGPUR</td></tr></table>	DEPOSIT		Column_Name	DataType	ACTNO	INT	CNAME	VARCHAR(50)	BNAME	VARCHAR(50)	AMOUNT	DECIMAL(8,2)	ADATE	DATETIME	BRANCH		Column_Name	DataType	BNAME	VARCHAR(50)	CITY	VARCHAR(50)	CUSTOMERS		Column_Name	DataType	CNAME	VARCHAR(50)	CITY	VARCHAR(50)	BORROW		Column_Name	DataType	LOANNO	INT	CNAME	VARCHAR(50)	BNAME	VARCHAR(50)	AMOUNT	DECIMAL(8,2)	ACTNO	CNAME	BNAME	AMOUNT	ADATE	101	ANIL	VRCE	1000.00	01-MAR-95	102	SUNIL	AJNI	5000.00	04-JAN-96	103	MEHUL	KAROLBAGH	3500.00	17-NOV-95	104	MADHURI	CHANDI	1200.00	17-DEC-95	105	PRMOD	M.G. ROAD	3000.00	27-MAR-96	106	SANDIP	ANDHERI	2000.00	31-MAR-96	107	SHIVANI	VIRAR	1000.00	05-SEP-95	108	KRANTI	NEHRU PLACE	5000.00	02-JUL-95	109	MINU	POWAI	7000.00	10-AUG-95	BNAME	CITY	VRCE	NAGPUR	AJNI	NAGPUR
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KAROLBAGH	DELHI
CHANDI	DELHI
DHARAMPETH	NAGPUR
M.G. ROAD	BANGLORE
ANDHERI	BOMBAY
VIRAR	BOMBAY
NEHRU PLACE	DELHI
POWAI	BOMBAY

CUSTOMERS

CNAME	CITY
ANIL	CALCUTTA
SUNIL	DELHI
MEHUL	BARODA
MANDAR	PATNA
MADHURI	NAGPUR
PRAMOD	NAGPUR
SANDIP	SURAT
SHIVANI	BOMBAY
KRANTI	BOMBAY
NAREN	BOMBAY

BORROW

LOANNO	CNAME	BNAME	AMOUNT
201	ANIL	VRCE	1000.00
206	MEHUL	AJNI	5000.00
311	SUNIL	DHARAMPETH	3000.00
321	MADHURI	ANDHERI	2000.00
375	PRMOD	VIRAR	8000.00
481	KRANTI	NEHRU PLACE	3000.00

From the above given tables perform the following queries using SELECT statement:

Part - A

1. Retrieve all data from table DEPOSIT.
2. Retrieve all data from table BORROW.
3. Retrieve all data from table CUSTOMERS.
4. Display Account No, Customer Name & Amount from DEPOSIT.
5. Display Loan No, Amount from BORROW.
6. Display loan details of all customers who belongs to 'ANDHERI' branch.
7. Give account no and amount of depositor, whose account no is equals to 106.
8. Give name of borrowers having amount greater than 5000.
9. Give name of customers who opened account after date '1-12-96'.
10. Display name of customers whose account no is less than 105.
11. Display name of customer who belongs to either 'NAGPUR' Or 'DELHI'. **(OR & IN)**
12. Display name of customers with branch whose amount is greater than 4000 and account no is less than 105.
13. Find all borrowers whose amount is greater than equals to 3000 & less than equals to 8000.
(AND & BETWEEN)
14. Find all depositors who do not belongs to 'ANDHERI' branch.

	<p>15. Display the name of borrowers whose amount is <i>NULL</i>.</p> <p>Part - B</p> <p>16. Display Account No, Customer Name & Amount of such customers who belongs to 'AJNI', 'KAROLBAGH' Or 'M.G. ROAD' and Account No is less than 104.</p> <p>17. Display all the details of first five customers.</p> <p>18. Display all the details of first three depositors whose amount is greater than 1000.</p> <p>19. Display Loan No, Customer Name of first five borrowers whose branch name does not belongs to 'ANDHERI'.</p> <p>20. Retrieve all unique cities using DISTINCT. (Use Customers Table)</p> <p>Part - C</p> <p>21. Retrieve all unique branches using DISTINCT. (Use Branch Table)</p> <p>22. Retrieve all the records of customer table as per their city name in ascending order.</p> <p>23. Retrieve all the records of deposit table as per their amount column in descending order.</p> <p>24. Retrieve all the details of customers in descending order of their city name.</p> <p>25. Show all unique borrowers & label the column Unique_Borrowers. (Display only Names)</p>
<p>Lab-3</p>	<p>Implementation of Update in SQL</p> <p>From the above given tables perform the following queries using UPDATE statement:</p> <p>(Use Lab-2 BANK_INFO Database)</p> <p>Part - A</p> <ol style="list-style-type: none"> 1. Update deposit amount of all customers from 3000 to 5000. 2. Change branch name of ANIL from VRCE to C.G. ROAD. (Use Borrow Table) 3. Update Account No of SANDIP to 111 & Amount to 5000. 4. Give 10% Increment in Loan Amount. 5. Update deposit amount of all depositors to 5000 whose account no between 103 & 107. <p>Part - B</p> <ol style="list-style-type: none"> 6. Update amount of loan no 321 to <i>NULL</i>. 7. Change Loan number from 201 to 401 & also change branch name from VRCE to AJNI. 8. Modify customer name ANIL to ANIL JAIN. 9. Give 1000 Rs Increment in Loan Amount. 10. Update customer name MINU to SINU and amount 10000. <p>Part - C</p> <ol style="list-style-type: none"> 11. Change Name to Ramesh, Branch Name VRCE & Amount 5500, Whose Account Number is 102. 12. Make Branch Name & Amount <i>NULL</i>, Whose Loan Number is 481 & Name is KRANTI. 13. Give 5% Increment in Loan Amount whose loan no less then 321. 14. Update the customer city BOMBAY to MUMBAI. 15. Update the branch name VRCE where Loan number 375.
<p>Lab-4</p>	<p>Implementation of Delete, Truncate and Drop in SQL</p> <p>From the above given tables perform the following queries using DELETE/DROP/TRUNCATE statement:</p> <p>(Use Lab-2 BANK_INFO Database)</p> <p>Part - A</p> <ol style="list-style-type: none"> 1. Delete records of Customer table that belongs to BOMBAY City. 2. Delete all account numbers whose amount less than equals to 1000. 3. Delete borrowers whose branch name is 'AJNI'. 4. Delete all the borrowers whose loan number between 201 to 210. 5. Delete customers who opened account after date '01-DEC-96'. (Use DEPOSIT table) <p>Part - B</p> <ol style="list-style-type: none"> 6. Delete all the records of Customers table. (Use TRUNCATE)

7. Remove all customers whose name is ANIL & Account Number is 101.
8. Delete all the depositors who do not belongs to 'ANDHERI' branch.
9. Delete loan details of customers whose amount is less than 3000.
10. Delete customers who opened account before date '1-JAN-96'. (Use **DEPOSIT** table)

Part - C

11. Delete all the borrowers whose loan amount is less than 2000 and does not belong to VRCE branch.
12. Delete all the records of Deposit table. (Use **TRUNCATE**)
13. Delete all the records of Branch table. (Use **TRUNCATE**)
14. Remove Deposit table. (Use **DROP**)
15. Remove Branch table. (Use **DROP**)

Lab-5

Implementation of LIKE Operator in SQL

Create following table using query according to the definition.

Students	
Column_Name	Data Type
StuID	INT
FirstName	VARCHAR(25)
LastName	VARCHAR(25)
Website	VARCHAR(50)
City	VARCHAR(25)
Division	VARCHAR(20)

Insert the following records in the students table.

StuID	FirstName	LastName	Website	City	Division
1011	Keyur	Patel	techonthenet.com	Rajkot	II-BCX
1022	Hardik	Shah	digminecraft.com	Ahmedabad	I-BCY
1033	Kajal	Trivedi	bigactivities.com	Baroda	IV-DCX
1044	Bhoomi	Gajera	checkyourmath.com	Ahmedabad	III-DCW
1055	Harmit	Mitel	NULL	Rajkot	II-BCY
1066	Ashok	Jani	NULL	Baroda	II-BCZ

From the above given tables perform the following queries:

Part - A

1. Display the name of students whose first name starts with 'k'.
2. Display the name of students whose first name consists of five characters.
3. Retrieve the first name & last name of students whose city name ends with a & contains six characters.
4. Display all the students whose last name ends with 'tel'.
5. Display all the students whose first name starts with 'ha' & ends with 't'.
6. Display all the students whose first name starts with 'k' and third character is 'y'.
7. Display the name of students having no website and name consists of five characters.
8. Display all the students whose last name consists of 'jer'.
9. Display all the students whose city name starts with either 'r' or 'b'.
10. Display all the students name having websites.

Part - B

11. Display all the students whose name starts from alphabet A to H.
12. Display all the students whose name's second character is vowel.
13. Display student's name whose city name consist of 'rod'.
14. Retrieve the First & Last Name of students whose website name starts with 'bi'.
15. Display student's city whose last name consists of six characters.

Part - C

16. Display all the students whose city name consist of five characters & not start with 'ba'.
17. Show all the student's whose division starts with 'II'.
18. Find out student's first name whose division contains 'bc' anywhere in division name.
19. Show student id and city name in which division consist of six characters and having website name.
20. Display all the students whose name's third character is consonant.

Lab-6

Implementation of LIKE Operator in SQL

CUSTOMER

CID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkista	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitucion 2222	Mexico D.F.	05021	Mexico
3	Latonio Morenor Taqueria	Antonio Moreno	Mataderos 2312	Mexico D.F.	05023	Mexico
4	bround the Hors	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Brglunds snabbkop	Christina Berglund	Berguvsvagen 8	Lulea	S-958 22	Sweden

From the above given tables perform the following SQL queries (LIKE Operation):

Part - A

1. Return all customers from a city that starts with 'L'.
2. Return all customers from a city that contains the letter 'L'.
3. Return all customers from a city that do not contains the letter 'L'.
4. Return all customers that name starts with 'La'.
5. Return all customers that name does not starts with 'La'.
6. Return all customers that name starts with 'a' or starts with 'b'.
7. Return all customers that name starts with 'a' or starts with 'c' or starts with 't'.
8. Return all customers from a city that starts with 'a' to 'd'.
9. Return all customers that name ends with 'a'.
10. Return all customers that name does not ends with 'a'.

Part - B

11. Return all customers that name starts with 'b' and ends with 's'.
12. Return all customers that name contains 'or'.
13. Return all customers that name starts with 'a' and are at least 3 characters in length.
14. Return all customers that name has 'r' in the second position.
15. Return all customers from a city that starts with 'L' and contains 'q'.

Part - C

16. Return all customers that name starts vowels.
17. Return all customers that name contains vowels.
18. Return all customers that name starts with vowels and are at least 3 characters in length.
19. Return all customers that name has vowels in the second position.
20. Return all customers from a city that end with vowels.

Lab-7

Implementation of ALTER Command in SQL

Create following table using query according to the definition.

Student	
Column_Name	Data Type
Enrollment_No	VARCHAR(20)
Name	VARCHAR(25)
CPI	DECIMAL(5,2)
Birthdate	DATETIME

From the above given table perform the following queries:

Part - A

1. Add two more columns City VARCHAR (20) NULL and Backlog INT NOT NULL.
2. Change the size of NAME column of student from VARCHAR (25) to VARCHAR (35).
3. Change the data type DECIMAL to INT in CPI Column.
4. Rename Column Enrollment No to ENO.
5. Delete Column City from the STUDENT table.
6. Change name of table STUDENT to STUDENT_MASTER.

Part - B

7. Remove Column Backlog from the table.
8. Change Constraint of Name Column from NULL to NOT NULL.

Part - C

9. Rename Column Birthdate to BDate.
10. Change the datatype of ENO Column from VARCHAR (20) to VARCHAR (12)

Lab-8

Implementation of Integrity Constraints in SQL

Create following table using query according to the definition.

Part A

Student		
Column_Name	Data Type	Remarks
StudentID	Int	Primary Key, Auto Increment, Not Null
Enrollment_No	VARCHAR(20)	Unique Key, Not Null
Name	VARCHAR(25)	Not Null
CPI	DECIMAL(5,2)	Do not allow SPI more than 10, Null
JoiningDate	DATETIME	Set Default value getdate(), Not Null
Bklog	Int	Do not allow Bklog less than 0, Not Null
StateName	VARCHAR(50)	Default value as 'Gujarat' in StateName to all new records If no other value is Specified

Create following table using query according to the definition.

Part B

State		
Column_Name	Data Type	Remarks
StateID	Int	Primary Key, Auto Increment, Not Null
StateName	VARCHAR(20)	Unique Key, Not Null

City		
Column_Name	Data Type	Remarks
CityID	Int	Primary Key, Auto Increment, Not Null
CityName	VARCHAR(20)	Unique Key, Not Null

	<table><tr><td>PinCode</td><td>VARCHAR(10)</td><td>Null</td></tr><tr><td>StateID</td><td>Int</td><td>Foreign key</td></tr></table>	PinCode	VARCHAR(10)	Null	StateID	Int	Foreign key
PinCode	VARCHAR(10)	Null					
StateID	Int	Foreign key					
	<p>Part C</p> <p>Create following table using Design mode according to the definition. (Use Part A table)</p>						
Lab-9	<p>Implementation of Math Functions in SQL</p> <p>Math functions</p> <p>Part - A</p> <ol style="list-style-type: none">1. Display the result of 5 multiply by 30.2. Find out the absolute value of -25, 25, -50 and 50.3. Find smallest integer value that is greater than or equal to 25.2, 25.7 and -25.2.4. Find largest integer value that is smaller than or equal to 25.2, 25.7 and -25.2.5. Find out remainder of 5 divided 2 and 5 divided by 3. <p>Part - B</p> <ol style="list-style-type: none">6. Find out value of 3 raised to 2nd power and 4 raised 3rd power.7. Find out the square root of 25, 30 and 50.8. Find out the square of 5, 15, and 25.9. Find out the value of PI.10. Find out round value of 157.732 for 2, 0 and -2 decimal points. <p>Part - C</p> <ol style="list-style-type: none">11. Find out exponential value of 2 and 3.12. Find out logarithm having base b having value 10 of 5 and 100.13. Find sine, cosine and tangent of 3.1415.14. Find sign of -25, 0 and 25.15. Generate random number using function.						
Lab-10	<p>Implementation of String Functions in SQL</p> <p>String functions</p> <p>Part - A</p> <ol style="list-style-type: none">1. Find the length of following. (I) NULL (II) ' hello ' (III) Blank2. Display your name in lower & upper case.3. Display first three characters of your name.4. Display 3rd to 10th character of your name.5. Write a query to convert 'abc123efg' to 'abcXYZefg' & 'abcabcabc' to 'ab5ab5ab5' using REPLACE.6. Write a query to display ASCII code for 'a','A','z','Z', 0, 9.7. Write a query to display character based on number 97, 65,122,90,48,57. <p>Part - B</p> <ol style="list-style-type: none">8. Write a query to remove spaces from left of a given string 'hello world '.9. Write a query to remove spaces from right of a given string ' hello world '.10. Write a query to display first 4 & Last 5 characters of 'SQL Server'.11. Write a query to convert a string '1234.56' to number (Use CAST()).12. Write a query to convert a float 10.58 to integer (UseCONVERT()).13. Put 10 space before your name using function.14. Combine two strings (Your name & Surname) using + sign as well as CONCAT (). <p>Part - C</p> <ol style="list-style-type: none">15. Find reverse of "Darshan".						

	<div>16. Repeat your name 3 times.</div> <div>17. Write a query to display first 3 & Last 3 characters of 'your name'.</div> <div>18. From Data, returns the first non-null value in a list. (Use COALESCE())</div> <div>19. Tests whether the expression is numeric. (Use ISNUMERIC())</div> <div>20. Search for "t" in string "Customer", and return its position. (Use CHARINDEX())</div>																								
Lab-11	<div>Implementation of DATE Functions in SQL</div> <div>Date Functions</div> <div>Part - A</div> <div><div>1. Write a query to display the current date & time. Label the column Today_Date.</div><div>2. Write a query to find new date after 365 day with reference to today.</div><div>3. Display the current date in a format that appears as may 5 1994 12:00AM.</div><div>4. Display the current date in a format that appears as 03 Jan 1995.</div><div>5. Display the current date in a format that appears as Jan 04, 96.</div></div> <div>Part - B</div> <div><div>6. Write a query to find out total number of months between 31-Dec-08 and 31-Mar-09.</div><div>7. Write a query to find out total number of years between 25-Jan-12 and 14-Sep-10.</div><div>8. Write a query to find out total number of hours between 25-Jan-12 7:00 and 26-Jan-12 10:30.</div><div>9. Write a query to extract Day, Month, Year from given date 12-May-16.</div><div>10. Write a query that adds 5 years to current date.</div></div> <div>Part - C</div> <div><div>11. Write a query to subtract 2 months from current date.</div><div>12. Extract month from current date using datename () and datepart () function.</div><div>13. Write a query to find out last date of current month.</div><div>14. Write a query to display date & time after 30 days from today.</div><div>15. Calculate your age in years and months.</div></div>																								
Lab-12	<div>Implementation of Aggregate Functions in SQL</div> <div>Create following table using query according to the definition.</div> <div>Insert records as given below.</div> <div><table><tr><th colspan="3">Student_Marks</th></tr><tr><th>Sid</th><th>SName</th><th>Marks</th></tr><tr><td>1</td><td>John</td><td>90</td></tr><tr><td>2</td><td>Martin</td><td>80</td></tr><tr><td>3</td><td>Carol</td><td>89</td></tr><tr><td>4</td><td>Jack</td><td>99</td></tr><tr><td>5</td><td>Rose</td><td>88</td></tr><tr><td>6</td><td>Mary</td><td>90</td></tr></table></div> <div>Part - A</div> <div><div>1. Find total number of students.</div><div>2. Find total of marks scored by all students.</div><div>3. Find average marks of all students.</div><div>4. Find minimum marks scored from all students.</div><div>5. Find maximum marks scored from all students.</div></div>	Student_Marks			Sid	SName	Marks	1	John	90	2	Martin	80	3	Carol	89	4	Jack	99	5	Rose	88	6	Mary	90
Student_Marks																									
Sid	SName	Marks																							
1	John	90																							
2	Martin	80																							
3	Carol	89																							
4	Jack	99																							
5	Rose	88																							
6	Mary	90																							

Aggregate Functions with GROUP BY

Employee					
EID	ENAME	Department	Salary	JoiningDate	City
101	Rahul	Admin	56000	01-Jan-90	Rajkot
102	Hardik	IT	18000	25-Sep-90	Ahmedabad
103	Bhavin	HR	25000	14-May-91	Baroda
104	Bhoomi	Admin	39000	08-Feb-91	Rajkot
105	Rohit	IT	17000	23-Jul-90	Jamnagar
106	Priya	IT	9000	18-Oct-90	Ahmedabad
107	Neha	HR	34000	25-Dec-91	Rajkot

Part - B

1. Display the Highest, Lowest, Total, and Average salary of all employees & label the columns Maximum, Minimum, Total_Sal and Average_Sal, respectively.
2. Find total number of employees of EMPLOYEE table.
3. Retrieve maximum salary from IT department.
4. Count total number of cities of employee without duplication.
5. Display city with the total number of employees belonging to each city.

Part - C

6. Display city having more than one employee.
7. Give total salary of each department of EMPLOYEE table.
8. Give average salary of each department of EMPLOYEE table without displaying the respective department name.
9. Give minimum salary of employee who belongs to Ahmedabad.
10. List the departments having total salaries more than 50000 and located in city Rajkot.

Lab-13

Implementation of Aggregate Functions in SQL

Student				
SID	SName	Department	SPI	City
101	Jay	MCA	8.8	Rajkot
102	Deep	BCA	5.6	Ahmedabad
103	Bhavin	BBA	8.3	Baroda
104	Dharmik	BCA	9.9	Rajkot
105	Jeet	MCA	10.0	Jamnagar
106	Priya	MBA	5.5	Ahmedabad
107	Neha	BSCIT	6.5	Rajkot

Part - A

1. Display the Highest, Lowest SPI of all students & label the columns Maximum, Minimum respectively.
2. Find total number of students of student table.
3. Retrieve maximum SPI from BCA department.
4. Count total number of cities of students without duplication.
5. Display city with the total number of students belonging to each city.

Part - B

6. Display city having more than one student.
7. Give total SPI of each department of student table.

8. Give average SPI of each department of student table without displaying the respective department name.

9. Give minimum SPI of student who belongs to Ahmedabad.

10. List the departments having total SPI more than 15.

Part - C

11. Display department having more than one student.

12. Find total number of students from MCA department.

13. Retrieve maximum SPI from BBA department.

14. Count total number of department of students table without duplication.

15. List the departments having total number of students more than one.

Lab-14

Implementation of SET Operators in SQL

Create below two tables and perform the following queries:

Computer	
RollNo	Name
101	Ajay
109	Hareesh
115	Manish

Electrical	
RollNo	Name
105	Ajay
107	Mahesh
115	Manish

Part - A

1. Display name of students who is either in Computer or in Electrical.

2. Display name of students who is either in Computer or in Electrical including duplicate data.

Part - B

3. Display name of students who is in both Computer and Electrical.

4. Display name of students who are in Computer but not in Electrical.

5. Display name of students who are in Electrical but not in Computer.

Part - C

6. Display all the details of students who are either in Computer or in Electrical.

7. Display all the details of students who are in both Computer and Electrical.

Lab-15

Implementation of Select * Into command in SQL

Create the following table and perform the following queries:

Cricket		
Name	City	Age
Sachin Tendulkar	Mumbai	30
Rahul Dravid	Bombay	35
M. S. Dhoni	Jharkhand	31
Suresh Raina	Gujarat	30

Part - A

1. Create table World cup from cricket with all the columns.

2. Create table T20 from cricket with first two columns with no data.

3. Create table IPL From Cricket with No Data

Part - B

4. Insert the Data into IPL from Cricket Whose Second Character Should Be 'A' And String Should Have At least 7 Characters in Cricket Name Field.

5. Delete All the Rows From IPL.

6. Delete the Detail of Cricketer Whose City is Jharkhand.

Part - C

- Rename the Table IPL to IPL2018.
- Destroy table T20 with All the Data.

Lab-16

Implementation of Joins in SQL

Create below tables and perform the following queries:

Student		
Rno	Name	Branch
101	Raju	CE
102	Amit	CE
103	Sanjay	ME
104	Neha	EC
105	Meera	EE
106	Mahesh	ME

Result	
Rno	SPI
101	8.8
102	9.2
103	7.6
104	8.2
105	7.0
107	8.9

Employee		
EmployeeNo	Name	ManagerNo
E01	Tarun	NULL
E02	Rohan	E02
E03	Priya	E01
E04	Milan	E03
E05	Jay	E01
E06	Anjana	E04

Part - A

- Combine information from student and result table using cross join or Cartesian product.
- Display Rno, Name, Branch and SPI of CE branch's student only.
- Display Rno, Name, Branch and SPI of other than EC branch's student only.
- Display average result of each branch.
- Display average result of each branch and sort them in ascending order by SPI.

Part - B

- Display average result of CE and ME branch.
- Perform the left outer join on Student and Result tables.
- Perform the right outer join on Student and Result tables.
- Perform the full outer join on Student and Result tables.
- Retrieve the names of employee along with their manager's name from the Employee table.

Part - C

- Display maximum result of each branch.
- Display minimum result of each branch.
- Display name of student whose result is not generated.
- Display overall average result.
- Display Rno, Name, Branch and SPI of those student whose SPI greater than.

Lab-17

Implementation of Joins in SQL

City			
CityID (Primary Key)	City Name (Unique Key)	Pincode	Remakrs
1	Rajkot	360005	Good
2	Surat	335009	Good
3	Baroda	390001	Awesome
4	Jamnagar	361003	Smart
5	Junagadh	362229	Historic
6	Morvi	363641	Ceramic

Village		
VillageID (Primary Key)	Village Name	CityID (Foreign Key)
101	Raiya	1
102	Madhapar	1
103	Dodka	3
104	Falla	4
105	Bhesan	5
106	Dhoraji	5

Part – A

- Display all the villages of Rajkot city.
- Display city along with their villages & pin code.
- Display the city having more than one village.
- Display the city having no village.
- Count the total number of villages in each city.

Part - B

1. Display number of villages of Rajkot city.
2. Display Rajkot city along with their villages & pin code.
3. Display villages of Rajkot & Junagadh city.

Part - C

1. Display number of villages of Surat city.
2. Display city along with their villages & pin code whose Remarks is Good.
3. Display the city name of Falla village.

Lab-18

Implementation of Sub Queries in SQL

Create below tables and perform the following queries:

Student			
Rno	Name	City	DID
101	Raju	Rajkot	10
102	Amit	Ahmedabad	20
103	Sanjay	Baroda	40
104	Neha	Rajkot	20
105	Meera	Ahmedabad	30
106	Mahesh	Baroda	10

Academic		
Rno	SPI	Bklog
101	8.8	0
102	9.2	2
103	7.6	1
104	8.2	4
105	7.0	2
106	8.9	3

Department	
DID	DName
10	Computer
20	Electrical
30	Mechanical
40	Civil

Part - A

1. Display details of students who are from computer department.
2. Display name of students whose SPI is more than 8.
3. Display details of students of computer department who belongs to Rajkot city.
4. Find total number of students of electrical department.
5. Display name of student who is having maximum SPI.

Part - B

6. Display details of students having more than 1 backlog.
7. Display name of student who is having second highest SPI.
8. Display name of students who are either from computer department or from mechanical department.

Part - C

9. Display name of students who are in same department as 102 studying in.
10. Display name of students whose SPI is more than 9 and who is from electrical department.

Lab-19

Design E-R Diagram for enterprise level databases

1. Prepare E-R Diagram for Bank Management System.
2. Prepare E-R Diagram for Library Management System.
3. Prepare E-R Diagram for Hospital Management System.
4. Prepare E-R Diagram for College Management System.

Lab-20

Implementation of Select, Update, Delete in SQL

Student	
Column_Name	Data Type
StuID	INT
Name	VARCHAR(20)
EnrollmentNo	INT
Division	VARCHAR(10)
Sem	VARCHAR(100)

BirthDate	DATETIME
Email	VARCHAR(100)
ContactNo	VARCHAR(10)

Student						
StuID	Name	EnrollmentNo	Division	Sem	Email	ContactNo
101	Naimish Patel	090200107051	BCX-3	3	naimishp49@gmail.com	8866205253
102	Firoz A. S.	090200107090	BCY-3	3	Firoz.me@gmail.com	8885999922
103	Krunal Vyas	090243107101	BCZ-5	5	Krunal.vyas@gmail.com	9990888877
104	Vijay Patel	090200107102	BCX-5	5	vijay.patel123@gmail.com	8787878787
105	Vimal Trivedi	090200107103	BCY-3	3	Maulik123@gmail.com	8789564512

Part – A

1. Display all records.
2. Display students studying in BCY-3.
3. Display 5th semester students.
4. Display contact no of all students.
5. Display name and division of all students.
6. Display Name of Student who belongs to either Semester 3 or 5. (Use IN & OR)
7. Find Student Name & Enrollment No in which Student Id between 103 to 105.
8. Find Student Name & Enrollment No with their Email Who belongs to 5th Semester.
9. Display All the Details of first three students.
10. Update Division BCX-3 to BCX-4.

Part – B

11. Update semester to 5 and contactNo to 98984477 whose id is 101.
12. Display Name & Enrollment no of first 30% Students.
13. Display Unique Semesters.
14. Display semester 5 student division and Enrollment No.
15. Retrieve All the Students who have no Enrollment No.

Part – C

16. Find Students who born after date 01-01-1990.
17. Update Division to BCX-5 & Semester 5 whose Student Id Is 102.
18. Add one more Column City Varchar (50) in Student Table.
19. Remove All BCX-3 Division Students.
20. Remove table Student.

Lab-21 Implementation of Select, Update, Delete in SQL

Hospital	
Column_Name	Data Type
PatientID	INT
PatientName	VARCHAR(20)
Age	INT
Gender	VARCHAR(10)
DoctorName	VARCHAR(100)

AppointmentDate	DATETIME
-----------------	----------

Hospital					
PatientID	PatientName	Age	Gender	DoctorName	AppointmentDate
1001	John Doe	45	Male	Dr. Alice Johnson	2024-11-30
1002	Jane Smith	30	Female	Dr. Robert Brown	2024-11-30
1003	Sara Williams	28	Female	Dr. Emily Davis	2024-12-01
1004	Tom Hardy	40	Male	Dr. Alice Johnson	2024-12-01
1005	Eva Green	35	Female	Dr. Robert Brown	2024-12-02

Part – A

1. Select all patients and their appointment details.
2. Select all appointments scheduled with 'Dr. Alice Johnson'.
3. Select the details of a specific patient by their PatientID.
4. Select all patients older than 30.
5. Select all appointments scheduled on '2024-11-30'.
6. Select the names of patients with an appointment with 'Dr. Robert Brown'.
7. Select the number of patients with appointments on a specific date.
8. Select the patients with the earliest appointment.
9. Select the patients with the latest appointment.
10. Select all female patients.

Part – B

11. Update the appointment date for a 'Eva Green' to today.
12. Change the doctor for a 'Tom Hardy' to Dr. Robert Brown.
13. Update the age of a Sara Williams to 56.
14. Change the gender of an Eva Green to Male.
15. Update the appointment date for all patients of 'Dr. Robert Brown' to '2024-12-12'.

Part – C

16. Delete a patient, Eva Green.
17. Delete all appointments on '2024-12-01'.
18. Delete appointments whose doctor name is Dr. Emily Davis.
19. Delete all appointments whose age greater than 30.
20. Delete all appointments for female patients.

Lab-22 Implementation of LIKE Operator in SQL

Employee	
Column_Name	DataType
EmployeeID	INT
FirstName	VARCHAR(20)
LastName	VARCHAR(20)
Department	VARCHAR(20)
Salary	INT

Employee				
EmployeeID	FirstName	LastName	Department	Salary
1001	Meet	Patel	HR	50000
1002	Jay	Shah	Admin	60000

1003	Raj	Patel	Production	55000
1004	Mayank	Purohit	HR	70000
1005	Jeet	Santoki	Transport	45000
1006	Vishal	Rathod	Admin	65000

Part – A

1. Display all the employees whose name starts with 'm'
2. Write a query to display name of employees whose name starts with 'j' and contains 'e' in their name.
3. Display name of the employees whose **LastName** ends with 'hit' & contains seven characters.
4. Display all the employees whose name ends with either 'k' or 'y'.
5. Display all the employees whose name starts with vowels.
6. Display all the employees whose name not starts with vowels.
7. Display all the employees whose name contains vowels.
8. Display all the employees whose name not contains vowels.
9. Display all the employees whose name contains 5 letters.
10. Display all the employees whose name contains 5 letters and start with a.

Part – B

11. Display all the employees whose name contains 4 letters and end with t.
12. Display all the employees whose name contains a or c or d or k.
13. Display all the employees whose name contains tel.

Part – C

14. Display all the employees whose name starts with 'm' and end with 'k'.
15. Display all the employees whose name starts with 'v' and contains 6 letters.

Lab-23 Implementation of Aggregate Functions in SQL

Student	
Column_Name	Data Type
StudentID	INT
StudentName	VARCHAR(20)
Age	INT
Department	VARCHAR(30)
Semester	INT
Subject	VARCHAR(50)
Marks	INT

Student						
StudentID	StudentName	Age	Department	Semester	Subject	Marks
1001	Alice	30	Computer Science	1	Mathematics	99
1002	Bob	28	Electronics	1	Physics	58
1003	Charlie	35	Mechanical	2	Chemistry	65
1004	Diana	40	Electronics	3	Mathematics	88
1005	Eve	25	Mechanical	5	Chemistry	75
1006	Frank	32	Computer Science	5	Mathematics	97
1007	Gvak	23	Electronics	1	Mathematics	89
1008	Wynk	52	Computer Science	3	Physics	75

Part – A

1. Find the average marks in each subject.
2. Calculate the total marks obtained in physics.
3. Find the highest marks scored in each subject.
4. Find the lowest marks scored in each subject.
5. Count the number of students who scored greater than 80 marks in Mathematics.

Part - B

6. Find the average age of students in each department.
7. List the total marks scored by students in each department.
8. Find the student who scored the highest marks in Mathematics marks.
9. Find the subject with the highest average marks.
10. Calculate the average marks for each semester.

Part - C

11. Find the total marks scored in all subjects for each semester.
12. Find the department with the highest total marks.
13. Find the number of student age greater than 25.
14. Find the subject wise of students.
15. Find the average marks in Mathematics for each department.

Lab-24

Implementation of Joins in SQL

Students		
Column_Name	DataType	Remarks
StudentID	INT	Primary Key
StudentName	VARCHAR(20)	

IssuedBooks		
Column_Name	DataType	Remarks
IssueID	INT	Primary Key
StudentID	VARCHAR(20)	
BookName	INT	Foreign Key

Students	
StudentID	StudentName
1	Alice
2	Bob
3	Charlie
4	Diana

IssuedBooks		
IssueID	StudentID	BookName
1001	1	Mathematics
1002	2	Physics
1003	3	Chemistry
1004	1	Biology
1005	Null	Computer

Part - A

1. Retrieve the names of students and the books they have issued.
2. Find all students who issued books, along with their StudentIDs.
3. Retrieve the list of books issued by a student named "Alice".
4. Find student name with number of books issued.
5. Retrieve the student's name and the books they issued.

Part - B

6. Find the total number of books issued by 'Alice'.
7. List all books that have been issued by students.
8. Retrieve the names of students who issued a book titled "Physics".
9. Find student name and books issued by them with StudentID greater than 2.
10. Retrieve the names of students who issued multiple books.

Part - C

11. List all students who have issued at least one book.
12. Retrieve the names of students who have not issued any book.
13. Find the books issued by a student whose StudentID is 3.
14. Retrieve the number of books issued by "Diana".
15. List all students and the books they issued, sorted by StudentName.

Lab-25

Implementation of Sub Queries in SQL

Department		
Column_Name	Data Type	Remarks
DepartmentID	INT	Primary Key
DepartmentName	VARCHAR(20)	

Employee		
Column_Name	Data Type	Remarks
EmployeeID	INT	Primary Key
EmployeeName	VARCHAR(20)	
Age	INT	
DepartmentID	INT	Foreign Key
Salary	INT	

Department	
DepartmentID	DepartmentName
1	HR
2	IT
3	Finance

Employee				
EmployeeID	EmployeeName	Age	DepartmentID	Salary
1001	Alice	30	1	50000
1002	Bob	28	2	60000
1003	Charlie	35	3	55000
1004	Diana	40	2	70000
1005	Eve	25	1	45000
1006	Frank	32	3	65000

Part - A

1. Find the employee who works in the IT department.
2. Find employees who earn more than Bob.
3. Find the employee with the highest salary in the HR department.
4. Find employees who are older than Bob.
5. Find employees who work in the 'Finance' department.
6. Find employees who earn more than the average salary of all employees.
7. Find employees who work in the same department as 'Alice'.
8. Find employees who earn less than 'Diana'.
9. Find the department where 'Frank' works.

10. Find the employee whose age is less than 'Alice'.
- Part - B**
11. Find the employee who not works in the IT department.
12. Find the department where 'Frank' not works.
13. Find employees who earn less than 'Bob'.
- Part - C**
14. Find employees who earn less than 'Alice'.
15. Find employees who are younger than 'Bob'.

Lab-26 Implementation of Select, Update, Delete, Like, Alter in SQL

Restaurant		
Column_Name	DataType	Remarks
OrderID	INT	Primary Key
CustomerName	VARCHAR(20)	
DishName	VARCHAR(10)	Unique
Quantity	Int	
Price	DECIMAL(10,2)	
OrderDate	DATETIME	

Restaurant					
OrderID	CustomerName	DishName	Quantity	Price	OrderDate
1001	John Doe	Pizza	2	12.50	2024-11-30
1002	Jane Smith	Burger	1	8.0	2024-11-30
1003	Sara Williams	Pasta	3	10.00	2024-12-01
1004	Tom Hardy	Pizza	1	12.50	2024-12-01
1005	Eva Green	Salad	2	6.50	2024-12-02

- Part - A**
- Select all orders from the Restaurant table.
 - Select all orders made by 'John Doe'.
 - Select the total number of orders in the Restaurant.
 - Select the details of orders where the quantity is more than 1.
 - Select all orders for 'Pizza'.
 - Select the customer's name and the total price for each order (Quantity * Price).
 - Select all orders that were placed on '2024-11-30'.
 - Select the customer's name and their dish name where the dish contains 'a'.
 - Select the dish name end with ger.
 - Select the name of person who ordered pizza.
- Part - B**
- Update the price of 'Pizza' to 13.00.
 - Change the quantity of 'Pasta' ordered by 'Sara Williams' to 5.
 - Update the dish name from 'Salad' to 'Caesar Salad' for 'Eva Green'.
 - Update the customer's name from 'Tom Hardy' to 'Thomas Hardy' for all orders.
 - Update the order date for 'John Doe' to 2024-12-03.
- Part - C**
- Delete the order with OrderID = 1.
 - Delete all orders for 'Pizza'.
 - Delete all orders placed on '2024-12-01'.
 - Delete all orders where the quantity is less than 2.
 - Delete all orders for customers with the name 'Sara Williams'.

