

Branch Name:	BCA (Bachelor of Computer Applications)
Program Code:	CS101
Course Title:	Advance Database Management System
Course Code:	24-CAM205-2C
Pre-requisite Course:	Fundamentals of Database Management System.

Course Objective:

This course is intended to make the students:

- This course is intended to make the students familiar with advance concepts of Database Management Systems (DBMS).
- It aims to make students understand the role of DBMS in organization and understand the advance database concept, structure and operation using relational data model.
- This course explains the role of the database administrator (DBA) in an organization.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)								Total
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory				Practical				
				University Assessment		Continuous Assessment		University Assessment		Continuous Assessment		
				Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	
3	-	4	5	18	50	09	25	09	25	09	25	125

Course Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1.	Introduction of RDBMS/ADBMS: • Introduction to RDBMS/ADBMS, Introduction of oracle, E. F. Codd's rules of RDBMS, Advantages and Disadvantages of RDBMS, Features of RDBMS, DBMS Vs. RDBMS, Data Types.	10	25
2.	Introduction of SQL, Features of SQL, Rules of SQL Components of SQL:- • DDL Commands – Create, Alter, Drop, Rename, Truncate, • DML Commands- Insert, Update, Delete, Select • DCL Commands – Grant, Revoke • TCL Commands- Commit, • Rollback, Save point Select Clause, Order By and Group By Clause.	12	25
3.	Data Constraints, Functions: • Data Constraints – I/O Constraints, Business(Domain) Rules Constraints • Functions: Aggregate functions, Numeric Functions, Date Functions, String Function	14	25
4.	Joins, Set operators, Sub query: • Joins and its Types, Set operators, Sub query. Indexes, Views, Sequences PL/SQL: Introduction to PL/SQL: • Structure of PL/SQL Block, Data Types, Variables, Control Structure, Stored Procedure and Function, Basic concept of Cursor and Trigger	16	25

Course Learning Outcomes (CLO):

At the end of this course, the student would be able

1. **CLO1:** To understand event driven programming concept.
2. **CLO2:** To understand and implement client side designing.
3. **CLO3:** To understand and implement types of tools for Graphic User Interface (GUI).
4. **CLO4:** To understand the major tools, tools types with its properties, method and events.
5. **CLO5:** To understand and implement Desktop Application Development environment software.
6. **CLO6:** To understand with concept of Project development as Client level.

List Text Book:

1. SQL, PL/SQL: Evan Bayross.
2. Database Management System (SQL).

List of Reference Book:

1. Introduction to Database System: C. J. Date (7th edition) Low Price Edition.
2. SQL, PL/SQL: Evan Bayross (2nd edition) BPB.
3. Database Management System A C Shah & A R Patel, MacMillan Publication.
4. Database system concepts Henry F. Korth (3rd edition) TMH Publications.

E-Resource / Web Links:

1. <https://www.w3schools.com/sql>
2. <http://www.tutorialspoint.com/listtutorials/oracle/1>
3. <https://www.javatpoint.com/oracle-tutorial>
4. <http://www.studytonight.com/dbms/>
5. <http://www.plsqltutorial.com/>

List of Experiments:

Note: The experiment list provided beneath is for reference only. The course teacher may change/formulate it as per his/her methodology and requirement.

Create following Three Tables.

1. Salesman

SNUM	SNAME	CITY	COMMISSION
1001	PINAL	LONDON	12%
1002	JINAL	SURAT	13%
1003	KINJAL	LONDON	11%
1004	PRIYANK	BARODA	15%
1005	AMI	NEW DELHI	10%
1006	ANY	PATAN	10%
1007	VRAJ	BOMBAY	09%

SNUM: A Unique number assign to each salesman.

SNAME: The name of salesman.

CITY: The location of salesman.

COMMISSION: The salesman commission on order.

2. Customer

CNUM	CNAME	CITY	RATING	SNUM
2001	HARSH	LONDON	100	1001
2002	NIRALI	ROME	200	1003
2003	LAX	SURAT	200	1002
2004	PRIT	BOMBAY	300	1002
2005	SAHIL	LONDON	100	1001
2006	PRIYA	SURAT	300	1007
2007	BHOOMI	ROME	100	1004

CNUM: A Unique number assign to each customer.

CNAME: The name of customer.

CITY: The location of customer.

RATING: A level of preference indicator given to this customer.

SNUM: A salesman number assign to this customer.

3. Order1

ONUM	AMOUNT	ODATE	CNUM	SNUM
3001	18.69	03/05/25	2007	1007
3002	767.19	03/05/25	2001	1001
3003	1900.10	03/05/25	2007	1004
3004	5160.45	03/05/25	2003	1002
3005	1098.25	04/05/25	2007	1007
3006	1713.12	04/05/25	2002	1003
3007	75.75	05/05/25	2004	1002
3008	4723.00	05/05/25	2006	1001
3009	1309.95	05/05/25	2004	1002
3010	9898.87	06/05/25	2006	1001

ONUM: A Unique number assign to each Order.

AMOUNT: Amount of order in Rs.

ODATE: The date of order.

CNUM: The number of customer making the order.

SNUM: The number of salesman credited with the sale.

Note: "date must be insert in **dd-mon-yyyy** EX:- **03/MAY/2025**" Solve following request with the help of SQL query.

1. Produce the order no, a mount and date of all orders.
2. Give all the information about all the customers with salesman number 1001.
3. Display the information in the sequence of city, sname, snum, and Commission.
4. List of rating followed by the name of each customer in Surat.
5. List of snum of all salesmen with orders in order table without duplicates.
6. List of all orders for more than Rs. 1000.
7. List out names and cities of all salesmen in London with commission above 10%.
8. List all customers whose names begins with letter 'A' to 'B'.
9. List all orders with zero or NULL amount.
10. Find out the largest orders of salesman 1002 and 1007.
11. Count all orders of 03-May-25.
12. Calculate the total amount ordered.
13. Calculate the average amount ordered.
14. Find the largest order taken by each salesman on each date.
15. Count the no. of salesmen registering orders for each day.
16. Display the no. of order for each day in the following format. DD-MON-YY.
17. List all customers in descending order of rating.
18. Calculate the total of orders for each day.
19. Show the name of all customers with their salesman's name.
20. List all customers and salesmen who shared a same city.
21. List all customers serviced by salesman with commission above 12%.
22. Find all orders of the salesman who services 'HARSH'.
23. Find all orders attributed to salesmen in 'London'.
24. List the commission of all salesmen serving customers in 'London'.
25. List all orders of the customer 'Nirali'.
26. List the name and number of all salesmen who has more than Zero customer.
27. Select the name and number of all salesmen who have customers their cities.
28. Find all customers having rating greater than any customer in 'Rome'.
29. Find out which salesman produce largest and smallest orders on each date.
30. Create another table London staff having same structure as salesman table.
31. Insert all the rows of salesmen table with city London in the London staff table.
32. Create another table Day totals with two attributes date and total and insert rows into this table from order table.
33. Create a duplicate of the salesmen table with a name Multicust. Now delete all the rows from the salesmen table.

34. Double the commission of all salesmen of London.
35. Set ratings for all customers in London to NULL.
36. New Delhi office has closed. Remove all customer assigned to salesman in New Delhi.
37. Delete the salesmen who produce the lowest order for each day.
38. Create a view called Big orders which stores all orders larger than Rs.4000.
39. Create a view Rate count that gives the count of no. of customers at each rating.
40. Create a view that shows all the customers who have the highest ratings.
41. Create a view that shows all the number of salesmen in each city.
42. Create a view that shows all the number of salesmen in each city.
43. Create a view that shows all the salesmen with multiple customers.
44. Create a view Show name that for each order the order no, amount, salesman name and the customer's name.
45. Create a view same city that shows the no and name and city of the customers along with the city of the salesman serving them.

PL/SQL BLOCK: -

1. Write a PL/SQL Block to Display Student No, Name and Address on the Screen.
2. Write a PL/SQL Block to Perform Arithmetic Operation.
3. Write a PL/SQL Block to Find Maximum Number from Given two Numbers.
4. Write a PL/SQL Block to Find out Odd and Even no from given no.
5. Write a PL/SQL Block to Display first 25 numbers.
6. Write a PL/SQL Block to make Sum of first 100 natural numbers.

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO1	M	M		L	H		L		L					L	
CLO2	L		M		M	M		H						M	
CLO3	H	M	L				M	L							M
CLO4	M			M	L	L			M					M	
CLO5	L		M		M		M		L				L	M	
CLO6	L	M	H		L	L	M	M	H				M	H	

H:High, M:Medium, L:Low