

PROGRAMME: BCA (Bachelor of Computer Applications)

SEMESTER – III

Course Information:

Course Code: **24BCA3C01L**

Course Title: **Database Management Systems LAB**

Credits Units: **01**

Contact Hours: **30**

L-T-P: **0-0-2**

CA Weightage - **100**

Pass Marks (CA) – **40**

Special Examination Fees: **NA**

Course Facilitator (s):

Prerequisite (if any):

1. Students must have the basic knowledge of data and database.

At the end of the programme, students will be able to	
PO 1	Computational Knowledge: Understand and apply mathematical foundation, computing and domain knowledge for the conceptualization of computing models from defined problems.
PO 2	Problem Analysis: Ability to identify, critically analyze and formulate complex computing problems using fundamentals of computer science and application domains.
PO 3	Design / Development of Solutions: Ability to transform complex business scenarios and contemporary issues into problems, investigate, understand, and propose integrated solutions using emerging technologies.
PO 4	Conduct Investigations of Complex Computing Problems: Ability to devise and conduct experiments, interpret data and provide well informed conclusions.
PO 5	Modern Tool Usage: Ability to select modern computing tools, skills and techniques necessary for innovative software solutions.
PO 6	Professional Ethics: Ability to apply and commit professional ethics and cyber regulations in a global economic environment.
PO 7	Life-long Learning: Recognize the need for and develop the ability to engage in continuous learning as a Computing professional.
PO 8	Project Management: Ability to understand management and computing principles with

	computing knowledge to manage projects in multidisciplinary environments.
PO 9	Communication Efficacy: Communicate effectively with the computing community as well as society by being able to comprehend effective documentations and presentations.
PO 10	Societal & Environmental Concern: Ability to recognize economic, environmental, social, health, legal, ethical issues involved in the use of computer technology and other consequential responsibilities relevant to professional practice.
PO11	Individual & Team Work: Ability to work as a member or leader in diverse teams in a multidisciplinary environment.
PO12	Innovation and Entrepreneurship: Identify opportunities, entrepreneurship vision and use of innovative ideas to create value and wealth for the betterment of the individual and society.
Program Specific Outcomes (PSO's)	
PSO1	Pertain current knowledge and adapting to emerging applications of Mathematics, Science fundamentals in the field of Computer Science Applications
PSO2	Exhibit proficiency in identifying, formulating and analysing complex problems in the computer environment.
PSO3	Ability to create, select and apply appropriate modern techniques for solving complex issues.
PSO4	Explore technical knowledge in diverse areas of Computer Applications and experience a conducive environment in nurturing skills for successful career and higher studies.

Course Objectives (COB's)

COB1	Implement knowledge to build database design. Use normalization concepts and Design the relational model
COB2	Apply the knowledge of SQL on real time cases.
COB3	Adopting various SQL queries to operate databases and to handle in different contexts.
COB4	Implement logical structure of the database using SQL
COB5	Implement Database privileges and learn database transactions.

Course Outcomes (CO's)

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

S.No.	Course outcome	Description	Bloom's Taxonomy Level
1.	CO1	Design database using ER diagram and apply normalization.	L6
2.	CO2	Apply SELECT command to formulate and execute queries for data retrieval.	L3
3.	CO3	Analyzing data from the given database (multiple tables) using join with aggregate and built-in functions.	L4
4.	CO4	Write SQL queries to manipulate the data using DML commands	L6
5.	CO5	Create and manage database tables using DDL commands, constraints, views and privileges.	L6

CO-PO/PSO Mapping:

Course Outcome	Bloom's Taxonomy Levels	Programme Outcomes (PO's) Mapped												Program Specific Outcomes (PSO's)			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1 L3	PSO2 L3	PSO3 L2	PSO4 L6
CO1	L6	2	-	2	-	2	-	1	-	-	-	-	-	1	-	-	-
CO2	L3	2	-	-	3	-	-	1	-	-	-	-	-	1	-	-	1
CO3	L4	2	-	-	3	-	-	1	-	-	-	-	-	1	-	-	1
CO4	L6	2	-	-	3	-	-	1	-	-	-	-	-	1	-	-	1
CO5	L6	2	-	2	3	-	-	1	-	-	-	-	-	1	-	-	1
Total		10	-	4	12	2	-	5	-	-	-	-	-	5	-	-	4
Average		2	-	2	3	2	-	1	-	-	-	-	-	1	-	-	1

Syllabus

Experiment No	Name of the Experiment	Marks	CO
Experiment 1	1. Suppose you are given the following requirements for a simple database for the National Hockey League (NHL): - NHL has many teams, - each team has a name, a city, a coach, a captain, and a set of players, - each player belongs to only one team, - each player has a name, a position (such as left wing or goalie), a skill level, and - a set of injury records, - a team captain is also a player, - a game is played between two teams (referred to as host_team and guest_team) - has a date (such as May 11th, 1999) and a score (such as 4 to 2). - Construct a clean and concise ER diagram for the NHL database Construct a clean and concise ER diagram for the NHL database. 2. A university registrar's office maintains data about the following entities: - courses, including number, title, credits, syllabus, and prerequisites; - course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom; - students, including student- id, name, and program; - instructors, including Identification number, name, department, and title. - Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled. Construct an E- R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints.	25	CO1

Experiment 2	1. Write a query to display the empno, ename, job, hiredate, provide alias for each column, display employees who are working as PRESIDENT or ANALYST, and employees belonging to deptno 10 or 20, and ename should not start with S. 2. WAQ to display ename, salary, comm, calculate total salary and annual salary of all employees whose salary ranges from 1000 and 2500, and employees are belong to department 10 or 30. And who is working as SALESMAN. 3. Write a query to display ENAME, SAL, DEPTNO, display only employees who are not working under any manager. 4. Write a query to display ENAME, SAL, HIRDATE display Details of employees who have been with the company for more than thirty years, who are not drawing salary from 1500 to 3000. 5. WAQ to display ename, deptno, salary, comm and find increment of salary by 10%, and increment of commission by 5% for all employees and sort salary and department number	25	CO2
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Experiment 3	1. WAQ to display the details of all employees whose name is Smith. But you are not sure in which case enames are stored. Which statement will list all the employees whose ename is Smith? 2. WAQ to display ename, mgr, sal and comm where employees are not working under any manager as a value as NO MANAGER and comm as NO COMMISSION where employees are not taking any commission from the deptno 10 Or 20. 3. WAQ to display the sum of the salary of all employees according to department and job whose sum of the salary is more than 5000, sort the deptno column in ascending order. 4. WAQ to display ename and commission,if commission is null then replace with salary and if salary is also null then replace with 1000. 5. Write a query to display the maximum average salary of the employees according to deptno. 6. Write a query to hike the salary of the employees below jobs using CASE Job is CLERK hike by 15% If job is SALESMAN hike by 10% Or if job is ANALYST by 12% 7. Write a query to display the location from the department table as short Eg: NewYork as NY, Dallas DS, Chicago CG, and BOSTON as BT.	25	CO2,CO3
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Experi ment 4	1. Write a query to find the sum of salary by grouping according to job and deptno having cross tabulation. 2. Write a query to find the sum of the salary for the job and find the grand total. 3. Management wants to know the maximum salary of all the employees for each deptno, and display only if maximum salary greater than 2800, sort maximum salary in descending order. 4. WAQ to display employee name sal, comm, department name, location and calculate total salary, annual salary for the department name RESEARCH or OPERATIONS, sort annual salary in ascending order 5. Write a query to display the list of employees working under which manager. 6. Write a query to display ename and salary in dollar and prefix left white space of salary by special character by * and employees belong to deptno 30 and 40, who are working as salesman and clerk. 7. Write a query to find the sum of the salary for each department name and for each location, displaying only if the sum of the salary should not be equal to 10000.	25	CO2,CO3
Experi ment 5	1. WAQ to display ename , hiredate, sal and job where salary should be similar to CLARK's salary. 2. WAQ to display which employee is getting minimum salary from the deptno 30. 3. WAQT to display employee name, job and their department name whose job should be similar to JONES job and deptno similar to empno 7934. 4. WAQ to display empno,ename,job and salary where the salary should be less than CLERK's salary.and job should not be equal to SALESMAN.	25	CO2, CO3

Experi ment 6	1. WAQT display empno, ename, deptno and location of employee KING and salary between 1000\$ to 2000\$. 2. WAQ to find average salary for each job,deptno and loc and display only details if average salary greater than 5000\$. (Use natural join) 3. Write a query to display all matching and non-matching details from emp . 4. Write a query to display all matching and non-matching records from emp as left table and dept table as right. 5. Write a query to display all matching and non matching records from dept as the right table.	25	CO2, CO3
Experi ment 7	1. Write a query to insert the three records to the emp table at run time. 2. Write a query to update the salary of the employee by 15%, where the employee should work under the deptno of SMITH 3. Write a query to delete the record from the emp table where the employee should be working as similar to JONES. 4. Write a query to delete deptno 10 from the dept table. Mention the error if there is any error. 5. Write a query to insert single record to emp table	25	CO4
Experi ment 8	Create the table called product with attributes pno, pname, pprice, qty and total add the constraint not null for the required columns and add check constraint to price >0 1. Add the constraint primary key to pno by modifying the table. 2. Insert five records to the product table at run time. 3. Then add new column special_offer 4. Delete first three records. 5. Truncate the table product	25	CO4,CO5

Experiment 9	1. Create a view empvu20 which has all employees details work for the deptno 20. 2. Write a query to create a view on emp and dept table which has details like ename, deptno, sal, dname and loc for deptno 10, and salary should be between 1000 to 2000 and who are not drawing commission. 3. Write a query to create view as EMPDETAILS from the tables EMP, DEPT and SALGRADE which contains empno, ename, job, sal, deptno, name, loc and grade, where employees working as ANALYST and are not belongs to deptno 10 and 20. 4. Modify the EMPDETAILS view by using required clauses. Add an alias for each column name 5. Create a complex view dept_sum_view, store dname, minimum salary, maximum salary and average salary department wise.	25	CO4,CO5
Experiment 10	1. Create table job_history By Copying the structure data from emp table. 2. Insert three records to the emp table. 3. WAQ to display unique records from both table emp and job_history 4. WAQ to display the employees work for the company from since from beginning to till date from both the table emp and job_history 5. WAQ to display employees who joined recently leaving those who have joined since the beginning. 6. Create the new user called JAINBCAIIISEM with the password jain. 7. Change the password jain as BCA for the user JAINBCAIIISEM. 8. Provide the permission to the user JAINBCAIIISEM for create session, creating table, view. 9. Take the permission create view from the user JAINBCAIIISEM 10. Take back all the DML permission from the user JAINBCAIIISEM 11. Create the role called HR and provide the privileges create table, create view to HR. 12. Provide the HR role to ram and shyam. 13. Remove the created role HR and remove ram and shyam.	25	CO4,CO5

Bloom's Taxonomy-Revised

LEVEL	DESCRIPTION	MEANING	ACTION VERBS
6	Creating	Can the student create a new product or POV?	Assemble, construct, create, change, combine, compose, design, develop, formulate, invent, modify, organize, propose, theorize, write
5	Evaluating	Can the student justify a stand or decision?	Appraise, agree, assess, argue, conclude, decide, defend, judge, prioritize, prove, rate, recommend, select, support, value
4	Analyzing	Can the student distinguish between different parts?	Contrast, compare, criticize, differentiate, discriminate, dissect, distinguish, examine, experiment, operate, question, simplify, test
3	Applying	Can the student use information in a new way?	Choose, demonstrate, dramatize, employ, illustrate, interpret, schedule, sketch, solve, use
2	Understanding	Can the student explain ideas and concepts?	Classify, describe, discuss, explain, identify, infer, locate, outline, paraphrase, recognize, report, summarize, select, translate
1	Remembering	Can the student recall or remember information?	Define, duplicate, find, list, label, match, memorize, name, omit, recall, repeat, state, spell, tell

Signature of the Faculty

Signature of the HoD