



SRI KRISHNA INSTITUTE OF TECHNOLOGY

(Accredited by NAAC, Approved by A.I.C.T.E. New Delhi, Recognised by Govt. of Karnataka & Affiliated to V.T U., Belgaum)
#29, Hesaraghatta Main Road, Chimney Hills, Chikkabanavara Post, Bangalore- 560090

Department of Artificial Intelligence and Machine Learning

Academic Year : 2022-23	Semester : V
Course Name: DBMS Lab with Mini Project	Course Code: 18CSL58
Total Contact hours:	Credits:
SEE Marks:60 ; CIE:40	Total Marks: 100
Course Plan Author: Prof.Prema C	Date:

Course Prerequisites: Basic knowledge of Mathematics and Data Structures and Algorithms

Course Objectives:

- Foundation knowledge in database concepts, technology and practice to groom students into
- Well-informed database application developers.
- Strong practice in SQL programming through a variety of database problems.
- Develop database applications using front-end tools and back-end DBMS.

Course Outcomes:

CO Number	Course Outcome At the end of the course, student should be able to . . .	Blooms ' Level
CO1	Create, Update and query on the database.	L5
CO2	Demonstrate the working of different concepts of DBMS	L5
CO3	Implement, analyze and evaluate the project developed for an application.	L6

2. CO – PO Mapping

Course Outcomes	Program Outcomes														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	2	2	1	2	2	1	2	1	1	1
CO2	3	3	3	3	1	1	1		1		1	1	1	1	1
CO3	3	3	3	3	3	2	2	1	1	1	2	2	1	1	1



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Program Outcomes and Program Specific Outcomes

PO1	Engineering Knowledge;
PO2	Problem Analysis;
PO3	Design / Development of Solutions;
PO4	Conduct Investigations of Complex Problems;
PO5	Modern Tool Usage;
PO6	The Engineer and Society;
PO7	Environment and Sustainability;
PO8	Ethics;
PO9	Individual and Teamwork;
PO10	Communication;
PO11	Project Management and Finance;
PO12	Life-long Learning;
PSO1	Adapt, Contribute Innovate ideas in the field of Artificial Intelligence and Machine Learning
PSO2	To provide a concrete foundation and enrich their abilities to qualify for Employment, Higher studies and Research in various domains of Artificial Intelligence and Machine Learning such as Data Science, Computer Vision, Natural Language Processing with ethical values
PSO3	Graduates will acquire the practical proficiency with niche technologies and open source platforms and to become Entrepreneur in the domain of Artificial Intelligence and Machine Learning

LIST OF EXPERIMENTS:

SL. NO.	Experiments
	PART-A
1	<p>Consider the following schema for a Library Database:</p> <p>BOOK(<u>Book_id</u>, Title, Publisher_Name, Pub_Year) BOOK_AUTHORS(<u>Book_id</u>, Author_Name) PUBLISHER(<u>Name</u>, Address, Phone) BOOK_COPIES(<u>Book_id</u>, <u>Branch_id</u>, No-of_Copies) BOOK_LENDING(<u>Book_id</u>, <u>Branch_id</u>, <u>Card_No</u>, Date_Out, Due_Date) LIBRARY_BRANCH(<u>Branch_id</u>, Branch_Name, Address)</p> <p>Write SQL queries to</p> <ol style="list-style-type: none"> 1. Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each branch, etc. 2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017. 3. Delete a book in BOOK table. Update the contents of other tables to reflect this data



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	<p>manipulation operation.</p> <ol style="list-style-type: none"> Partition the BOOK table based on year of publication. Demonstrate its working with a simple query. Create a view of all books and its number of copies that are currently available in the Library.
2	<p>Consider the following schema for Order Database: SALESMAN(Salesman_id, Name, City, Commission) CUSTOMER(Customer_id, Cust_Name, City, Grade, Salesman_id) ORDERS(Ord_No, Purchase_Amt, Ord_Date, Customer_id, Salesman_id) Write SQL queries to</p> <ol style="list-style-type: none"> Count the customers with grades above Bangalore's average. Find the name and numbers of all salesman who had more than one customer. List all the salesman and indicate those who have and don't have customers in their cities (Use UNION operation.) Create a view that finds the salesman who has the customer with the highest order of a day. Demonstrate the DELETE operation by removing salesman with id 1000. All his orders must also be deleted.
3	<p>Consider the schema for Movie Database: ACTOR(Act_id, Act_Name, Act_Gender) DIRECTOR(Dir_id, Dir_Name, Dir_Phone) MOVIES(Mov_id, Mov_Title, Mov_Year, Mov_Lang, Dir_id) MOVIE_CAST(Act_id, Mov_id, Role) RATING(Mov_id, Rev_Stars) Write SQL queries to</p> <ol style="list-style-type: none"> List the titles of all movies directed by 'Hitchcock'. Find the movie names where one or more actors acted in two or more movies. List all actors who acted in a movie before 2000 and also in a movie after 2015 (use JOIN operation). Find the title of movies and number of stars for each movie that has at least one rating and find the highest number of stars that movie received. Sort the result by movie title. Update rating of all movies directed by 'Steven Spielberg' to 5.
4	<p>Consider the schema for College Database: STUDENT(USN, SName, Address, Phone, Gender) SEMSEC(SSID, Sem, Sec) CLASS(USN, SSID) SUBJECT(Subcode, Title, Sem, Credits) IAMARKS(USN, Subcode, SSID, Test1, Test2, Test3, FinalIA) Write SQL queries to</p> <ol style="list-style-type: none"> List all the student details studying in fourth semester 'C' section. Compute the total number of male and female students in each semester and in each section. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects. Calculate the FinalIA (average of best two test marks) and update the corresponding table for all students. Categorize students based on the following criterion: If FinalIA = 17 to 20 then CAT = 'Outstanding' If FinalIA = 12 to 16 then CAT = 'Average' If FinalIA < 12 then CAT = 'Weak' Give these details only for 8th semester A, B, and C section students.



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5	<p>Consider the schema for Company Database: EMPLOYEE(<u>SSN</u>, Name, Address, Sex, Salary, SuperSSN, DNo) DEPARTMENT(<u>DNo</u>, DName, MgrSSN, MgrStartDate) DLOCATION(<u>DNo</u>, <u>DLoc</u>) PROJECT(<u>PNo</u>, PName, PLocation, DNo) WORKS_ON(<u>SSN</u>, <u>PNo</u>, Hours)</p> <p>Write SQL queries to</p> <ol style="list-style-type: none"> 1. Make a list of all project numbers for projects that involve an employee whose last name is 'Scott', either as a worker or as a manager of the department that controls the project. 2. Show the resulting salaries if every employee working on the 'IoT' project is given a 10 percent raise. 3. Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary, the minimum salary, and the average salary in this department 4. Retrieve the name of each employee who works on all the projects controlled by department number 5 (use NOT EXISTS operator). 5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000.
PART-B Mini Project	

Schedule of Instruction

Expts.no	Experiments Name	Aim of the Experiment	Course Outcome	Delivery mode
1	Order Database	To Create Order Database and access by SQL queries	CO2	Demonstrating in Lab
2	Library Database	To Create Library Database and access by SQL queries	CO2	Demonstrating in Lab
3	Movie Database	To Create Movie Database and access by SQL queries	CO2	Demonstrating in Lab
4	College Database	To Create College Database and access by SQL queries	CO2	Demonstrating in Lab
5	Company Database	To Create Company Database and access by SQL queries	CO2	Demonstrating in Lab
6	Mini Project	To do a mini project by using the domain of health care	CO3	-

Textbooks & Reference books

1	Fundamentals of Database Systems, RamezElmasri and Shamkant B. Navathe, 7th Edition, 2017, Pearson.
2	Database management systems, Ramakrishnan, and Gehrke, 3 rd Edition, 2014, McGraw Hill
3	SilberschatzKorth and Sudharshan, Database System Concepts, 6 th Edition, McGrawHill, 2013.
4	Coronel, Morris, and Rob, Database Principles Fundamentals of Design, Implementation and Management, Cengage Learning 2012.



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Web links and Video Lectures (e-Resources):	
1	https://sites.google.com/skit.org.in/prema-c-dept-of-aiml/home
2	
3	
4	
5	

Sl.No.	Assessment type	CO	Duration In Hours	Marks
1	Internal	CO2		10
2	Record	CO1		15
3	Conduction & Execution	CO3		10
4	Viva	CO2		5

****The sum of total marks of CIE + SEE = 40 + 60 = 100 marks**

Faculty In-charge

DAC Chairman

HOD

**** As per the applicable scheme**