

List of Additional Experiments

AC141/AT141

1. Write a program to multiply two matrices using array of pointers.

AC142/AT142

1. Draw an ER diagram for the registrar's office. to capture the requirements as stated below:

A university registrar's office maintains data about the following entities:

- (a) Courses, including number, title, syllabus and prerequisites;
- (b) Branch, including branch code, year of enrollment, semester, section
- (c) Students, including student –id, name, and program;
- (d) Instructors, including identification no, name, department, subjects.

Draw the ER Diagram for the above requirement. Map the ER diagram to the Relational Model.

Create tables identified and insert five appropriate tuples in each of the tables created. The students are required to carefully take care of the constraints on each of the table.

2. Consider the following three tables MEMBERS, BOOKS, RESERVES having the following attributes

MEMBERS(Member-id, Member-name, Designation, Age, Qualification)

BOOKS(Book-id, Title, Author, Price, Publication)

RESERVES(Member-id, Book-id, Date)

Use the above schema and solve the following queries using SQL

- a. Find names of members who are Professors and over 45 years age.
- b. List the titles of books reserved by Assistant Professors.
- c. Find ids of members who have not reserved books costing more than Rs. 600.

- d. Find the author and title of books reserved on 19-dec-2011.
- e. Find the names of members who have reserved all books.

3. Consider the following data base

PATIENT(patient-id, patient-name, type-of-patient, address, date-of-admission, date-of-discharge, doctor-id, ward-no)

DOCTOR(doctor-id, doctor-name, specialization)

TREATMENT(treatment-id, treatment-name, cost-of-treatment)

WARD(ward-no, type-of-ward)

- (a) Find all the names of patients in the data base who are under treatment id 2.
- (b) Find all the names of patients and type of patient treated by Dr. Ramprasad.
- (c) Find all the details of patients who are in ICU and treated by Dr. Chandrakanth.
- (d) Find all the names of doctors who are treating CCU patients.
- (e) Find names of all patients who are under treatment id 49.
- (f) Find the names of patients and names of doctors treating them who are admitted on 20-May-2012.

4. Consider the following employee database:

EMPLOYEE(person-id, person-name, street, city)

WORKS(person-name, company-name, salary)

COMPANY(company-name, city)

MANAGES(person-name, manager-name)

- a. Find the names of all employees who live in the same city and on the same street as do their managers.
- b. Find the names and cities of residence of all employees who work for Infosys.
- c. Find all employees in database who do not work for Syntel.
- d. Find the name, street address, and city of residence of all employees who work for Syntel and earn more than Rs. 30,000.

- e. Assume that the companies may be located in several cities. Find all companies located in every city in which Infosys is located.
 - f. Find those companies whose employees earn a higher salary, on average, than the average salary at Syntel.
5. Consider the employee data base in question 14 and solve the following queries using SQL
- a. Modify the database so that Ranjith now lives in Patna.
 - b. Give all employees of Syntel a 10 percent raise.
 - c. Give all managers of Syntel and IBM 15 percent raise.
 - d. Give all managers of Infosys a 10 percent raise unless the salary becomes greater than Rs. 1,00,000; in such cases, give only a 3 percent raise.

AC143/AT143

1. Print Fibonnaci numbers using recursive procedure.

AC144

1. Write an 8085 assembly language program to convert an ASCII hex character to the equivalent binary. ASCII hex number is at location X. Display the hex number and its binary equivalent in the address field.

AMIETE-IT

AT144

1. Write a Java program to find the distance between two points whose coordinates are given.
The coordinates can be 2-dimensional or 3-dimensional. (For computing the distance between a 2D and a 3D point, the 3D x and y components must be divided by z). Demonstrate method overriding in this program.
2. Write a Java program using swing to demonstrate trees that presents the hierarchical view of data implemented by JTree class, where the user has the ability to expand or collapse individual sub trees in this display.

3. Develop and demonstrate a XHTML file that includes Javascript script for the following problem.
 - a) Input: A number n obtained using prompt.
Output: The first n Fibonacci numbers.
 - b) Input: A number n obtained using prompt
Output: A table of numbers from 1 to n and their squares using alert

AMIETE ET

AE141

1. **Op-Amp RC Phase-Shift Oscillator:** Design and test the performance for the given frequency.
2. **Study of 555 Timer:** Design and test the performance of Monostable multivibrator circuit for a given pulse width.

AE142

1. **Implement Circuits** using basic gates for the given **Boolean expression**.
2. **Perform BCD addition using TWO four Bit parallel adder 7483 IC** and also implement BCD correction.

AE143

1. Write a C program that will read a positive integer and determine and print its binary equivalent.
2. Write a C program that uses a function to sort an array of n integers.
3. Write a C program to extract a portion of a character string and print the extracted string. Assume that m characters are extracted, starting with the n th character.
4. Write a C program using functions to read two matrices A ($M \times N$) and B ($P \times Q$), compute the product of $A \cdot B$ after checking compatibility for multiplication, and print the resultant product matrix.

AE144

1. **PPM**: Generation and detection.
2. **Generation and Detection of FSK**: Study and display of waveforms.

DIPIETE-ET

DE141(SAME)

DE142(SAME)

DE143

1. Implement Circuits using basic gates for the given Boolean expression.

DE144(SAME)

DIPIETE-CS

DC141

1. Write a C program to print the mathematical table of a given integer N.
2. Write a C program to read a four digit integer and print its reverse and also the sum of its individual digits.
3. Write a C program that fills a 5 x 5 matrix as follows:
 - Upper left triangle with +1s
 - Lower right triangle with -1s
 - Right to left diagonal with zeros

Display the contents of the matrix using not more than two printf statements.

DC142(SAME)

DC143

1. Write a Java program to create a class called Complex that defines the attributes (real and imaginary) and behavior (add, mul, sub, comparision) of complex numbers.

DC144

1. Draw an ER diagram for the registrar's office. to capture the requirements as stated below:

A university registrar's office maintains data about the following entities:

- (e) Courses, including number, title, syllabus and prerequisites;
- (f) Branch, including branch code, year of enrollment, semester, section
- (g) Students, including student –id, name, and program;
- (h) Instructors, including identification no, name, department, subjects.

Draw the ER Diagram for the above requirement. Map the ER diagram to the Relational Model.

Create tables identified and insert five appropriate tuples in each of the tables created. The students are required to carefully take care of the constraints on each of the table.

2. Consider the following three tables MEMBERS, BOOKS, RESERVES having the following attributes

MEMBERS(Member-id, Member-name, Designation, Age, Qualification)

BOOKS(Book-id, Title, Author, Price, Publication)

RESERVES(Member-id, Book-id, Date)

Use the above schema and solve the following queries using SQL

- (a) Find names of members who are Professors and over 45 years age.
- (b) List the titles of books reserved by Assistant Professors.
- (c) Find ids of members who have not reserved books costing more than Rs. 600 .
- (d) Find the author and title of books reserved on 19-dec-2011.
- (e) Find the names of members who have reserved all books.