Sanjivani College of Engineering, Kopargaon

Department of Electronics & Computer Engineering

Database Management System & SQL Laboratory (Practical Exam)

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1) With the help of customer and order database, implement all types of joins.

2)

Sample table: orders

order_id	customer_id	order_date	total_amount	order_status	enrollment_date	major
1	101	11/15/2024	250.75	Shipped	8/20/2022	Computer Science
2	102	11/16/2024	100.5	Processing	9/15/2021	Mechanical Engineering
3	103	11/17/2024	450.3	Delivered	1/10/2023	Electrical Engineering
4	104	11/18/2024	320.6	Cancelled	6/25/2020	Civil Engineering
5	105	11/19/2024	125.9	Shipped	2/18/2022	Physics

Q. Create a view that displays all orders placed in the last 30 days, along with the customer_id, order_date, and order status.

Sanjivani College of Engineering, Kopargaon

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Database Management System & SQL Laboratory (Practical Exam)

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1) With the help of appropriate employee table, implement all types of Views.

2)

Sample table name: item_table

ITEM_ID	PRODUCT	PRICE	QUANTITY	QUANTITY_SHIPPED
10011	135	500	500	500
10013	380	400	400	400
10021	582	14	36	20
10023	40010	6	8	8
10026	30326	8	16	8
10033	40	450	250	450
10039	20	400	400	400
10041	15	500	600	500

Q. Create a function get_avg_shipped_quantity that takes a price range (min and max price) as input and returns the average quantity shipped (QUANTITY_SHIPPED) for items in that price range.

Sanjivani College of Engineering, Kopargaon
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Database Management System & SQL Laboratory (Practical Exam)

1) For student and library database, implement all types of Cursor with all possible operations on it.

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT	SALARY	JOIN_DATE
1	John Doe	Sales	50000	1/10/2020
2	Jane Smith	Marketing	60000	7/15/2019
3	Emily Johnson	Sales	45000	4/22/2021
4	Michael Brown	HR	55000	6/1/2020
5	Lisa White	Sales	70000	2/25/2018

Sample table: sales

SALE_ID	EMPLOYEE_ID	SALE_AMOUNT	SALE_DATE
1	1	1200	12/1/2024
2	1	3000	12/2/2024
3	2	5000	11/20/2024
4	3	4500	12/5/2024
5	4	2500	11/18/2024
6	5	8000	12/4/2024

Q. Create a trigger that prevents the insertion of a sale in the sales table if the SALE_AMOUNT is negative. The trigger should raise an error.

Sanjivani College of Engineering, Kopargaon

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Database Management System & SQL Laboratory (Practical Exam)

==========

1) Implement a PL/SQL code to print odd numbers from 1 to 50.

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Q. Write a PL/SQL anonymous block that handles an exception when an employee is not found by EMPLOYEE_ID.

Sanjivani College of Engineering, Kopargaon

Department of Electronics & Computer Engineering

Database Management System & SQL Laboratory (Practical Exam)

==========

1) Implement a PL/SQL code to print Fibonacci series till 50

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Q. Write a PL/SQL function to check whether an employee's salary is above a given threshold and return a message indicating whether they are "High Paid" or "Low Paid."

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Department of Electronics & Computer Engineering

Database Management System & SQL Laboratory (Practical Exam)

==========

1) Write a code to implement any two types of Triggers

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT	SALARY	JOIN_DATE
1	John Doe	Sales	50000	1/10/2020
2	Jane Smith	Marketing	60000	7/15/2019
3	Emily Johnson	Sales	45000	4/22/2021
4	Michael Brown	HR	55000	6/1/2020
5	Lisa White	Sales	70000	2/25/2018

Sample table: sales

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4	3	4500	12/5/2024
5	4	2500	11/18/2024
6	5	8000	12/4/2024

Q. Create a trigger that prevents the insertion of a sale in the sales table if the SALE_AMOUNT is negative. The trigger should raise an error.

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Department of Electronics & Computer Engineering

Database Management System & SQL Laboratory (Practical Exam)

1) Write a code to implement Stored Procedures on DB.

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT	SALARY	JOIN_DATE
1	John Doe	Sales	50000	1/10/2020
2	Jane Smith	Marketing	60000	7/15/2019
3	Emily Johnson	Sales	45000	4/22/2021
4	Michael Brown	HR	55000	6/1/2020
5	Lisa White	Sales	70000	2/25/2018

Sample table: sales

SALE_ID	EMPLOYEE_ID	SALE_AMOUNT	SALE_DATE
1	1	1200	12/1/2024
2	1	3000	12/2/2024
3	2	5000	11/20/2024
4	3	4500	12/5/2024
5	4	2500	11/18/2024
6	5	8000	12/4/2024

Q Create a trigger that automatically updates the SALARY of an employee in the employees table whenever a sale is recorded in the sales table. The new salary should be increased by 5% of the SALE_AMOUNT.

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Database Management System & SQL Laboratory (Practical Exam)

1) Write a code to implement any two types of Triggers

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT	SALARY	JOIN_DATE
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3	2	5000	11/20/2024
4	3	4500	12/5/2024
5	4	2500	11/18/2024
6	5	8000	12/4/2024

Q. Create a cursor that retrieves the total sales (SALE_AMOUNT) made by each employee in the sales table. The cursor should calculate the total sales per employee and display the EMPLOYEE_NAME and the corresponding total sales amount.

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Department of Electronics & Computer Engineering

Database Management System & SQL Laboratory (Practical Exam)

==========

1) Write a PL/SQL program using looping statements to insert ten rows into a database table.

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Q. Write a PL/SQL function to check whether an employee's salary is above a given threshold and return a message indicating whether they are "High Paid" or "Low Paid."

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Database Management System & SQL Laboratory (Practical Exam)

==========

1) Implement the concept of Cursors: (Implicit,Explicit, Parameterized Cursor) with suitable example

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT	SALARY	JOIN_DATE
1	John Doe	Sales	50000	1/10/2020
2	Jane Smith	Marketing	60000	7/15/2019
3	Emily Johnson	Sales	45000	4/22/2021
4	Michael Brown	HR	55000	6/1/2020
5	Lisa White	Sales	70000	2/25/2018

Sample table: sales

SALE_ID	EMPLOYEE_ID	SALE_AMOUNT	SALE_DATE
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4	3	4500	12/5/2024
5	4	2500	11/18/2024
6	5	8000	12/4/2024

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Database Management System & SQL Laboratory (Practical Exam)

==========

1) Write a PL/SQL program using looping statements to insert ten rows into a database table.

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Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Q. Write a PL/SQL function to check whether an employee's salary is above a given threshold and return a message indicating whether they are "High Paid" or "Low Paid."

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Database Management System & SQL Laboratory (Practical Exam)

==========

1) Implement a PL/SQL code to print odd numbers from 1 to 50.

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Q. Write a PL/SQL anonymous block that handles an exception when an employee is not found by EMPLOYEE_ID.

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Database Management System & SQL Laboratory (Practical Exam)

1) Write a PLSQL code to implement exception handling with control structures.

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Q. Write a PL/SQL block to loop through all the rows in the employees table and print the EMPLOYEE_NAME for each employee (Using Cursor).

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Database Management System & SQL Laboratory (Practical Exam)

1) Implement the concept of Procedures and its types with suitable example

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Sample table: departments

DEPARTMENT_ID	DEPARTMENT_NAME	LOCATION
101	HR	New York
102	IT	San Francisco
103	Sales	Chicago

Q. Write an SQL query to list all departments and their employees. If a department has more than one employee, return multiple rows for that department. Include departments that do not have employees and show NULL for the employee names. Use a RIGHT JOIN.

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Database Management System & SQL Laboratory (Practical Exam)

==========

1) Implement the concept of Functions with suitable example

2)

Sample table: employees

EMPLOYEE_ID	EMPLOYEE_NAME	DEPARTMENT_ID	SALARY
1	Alice	101	50000
2	Bob	102	55000
3	Charlie	103	60000
4	David	101	45000
5	Eve	102	48000

Sample table: departments

DEPARTMENT_ID	DEPARTMENT_NAME	LOCATION
101	HR	New York
102	IT	San Francisco
103	Sales	Chicago

Q. Write an SQL query to retrieve the EMPLOYEE_NAME, SALARY, and DEPARTMENT_NAME for all employees who have not been assigned a department, using a LEFT JOIN. Ensure that the employees without departments show NULL for the DEPARTMENT_NAME.

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Database Management System & SQL Laboratory (Practical Exam)

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1) Implement the concept of Indexes with suitable example

2)

Sample table: student

student_id	first_name	last_name	date_of_birth	email	enrollment_date	major
1	John	Doe	5/15/2000	john.doe@example.com	8/20/2022	Computer Science
2	Jane	Smith	11/22/1999	jane.smith@example.com	9/15/2021	Mechanical Engineering
3	Alice	Johnson	3/9/2001	alice.johnson@example.com	1/10/2023	Electrical Engineering
4	Bob	Brown	7/30/2000	bob.brown@example.com	6/25/2020	Civil Engineering
5	Charlie	White	12/11/1998	charlie.white@example.com	2/18/2022	Physics

Q. Create a stored procedure that takes a start_date and end_date, and returns the total number of employees who were hired within that date range.

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Database Management System & SQL Laboratory (Practical Exam)

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Problem 1:
Develop a cursor that retrieves and displays all customers who have pending dues greater than ₹5000.

Problem 2:
Write a PL/SQL block to insert employee data. Handle exceptions like DUP_VAL_ON_INDEX if an employee ID already exists.

Sanjivani College of Engineering, Kopargaon
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Database Management System & SQL Laboratory (Practical Exam)

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Problem 1:
Design a trigger on the Product table to prevent insertion of a product if its quantity is less than zero. Verify the trigger by performing INSERT and UPDATE operations.

Problem 2:
Create two tables — Customer and Orders. Write queries to display all customers with their orders using a JOIN, show customers with no orders using a LEFT JOIN, and calculate total and average order amount per customer using aggregate functions.

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Database Management System & SQL Laboratory (Practical Exam)

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Problem 1:
Develop a cursor to retrieve product details from the Product table and calculate the new price by adding 5% GST. Display the final updated prices for all products.

Problem 2:
Create a view Top_Students to show students who scored above 80%. Perform SELECT, UPDATE, and DROP VIEW operations to test it.

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Database Management System & SQL Laboratory (Practical Exam)

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Problem 1:
Create tables Student, Course, and Enrollment. Perform JOIN operations to list students with their enrolled courses and calculate the total number of students per course using aggregate functions.

Problem 2:
Write a user-defined function Tax_Calculator() that calculates tax based on employee salary slabs and display results using a SELECT statement.

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Database Management System & SQL Laboratory (Practical Exam)

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Problem 1:
Write a PL/SQL block to calculate the square root of a number entered by the user. Handle VALUE_ERROR if negative input is given.

Problem 2:
Create a view Active_Customers showing customers who have placed at least one order in the last 30 days. Perform SELECT and DELETE operations on the view.

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Database Management System & SQL Laboratory (Practical Exam)

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Problem 1:
Create a trigger on the Account table that prevents a withdrawal if the balance becomes negative. Test it using INSERT and UPDATE.

Problem 2:
Write a stored procedure Update_Salary() that increases employee salary by 15% for a given department name passed as a parameter.