FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)®
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
CSL 333 DATABASE MANAGEMENT SYSTEMS LAB
Model Questions

Academic Year 2022-23

1. **Consider that an Oracle database contains the following tables**

   Candidate (cand_id, cand_name, party)

   Voters (voter_id, voter_name);

   Voted (cand_id, party, voter_id);

a) Write a program to ensure that only valid voters are permitted to vote

b) Write a function which calculates the total number of votes of a particular candidate.

c) Write a procedure that counts the votes and declares the winner

2. Consider an Oracle database for a video store. The database contains a table that stores the information about the videos rented by customers _ call it Rent_Info. It has the following fields: customer name, date out, date due in, date returned (a video may be returned in time, early or late), and fine (customers are charged a fine if the return date is after the date due in). When a video is rented by a customer, a tuple is inserted in Rent_Info; this tuple contains the name of the customer, the date out, and the date due in. When a video is returned, the return date is updated from NULL to the current date. Write a procedure that calculates the fine according to the following algorithm:

for the first 3 days of delay, charge Rs 10/- per day;
for the following 3 days charge Rs 20 /- per day;
after 6 days charge a fine of Rs 30 /- per day.

3. <u>Implement the voting system using the following tables</u>

Tables are as follows

candidates(candidate_name, party)

voter(voter_id(PK), password)

vote_request (voter_id(FK), party, valid_invalid)

Result (party, tot_votes)

Insert appropriate data into tables candidates and voter

a. Read voter_id, password, and party and check the validity of the request

b. Find out the total votes for each party and fill in the result table

c. Find out the elected candidate and the total number of invalid votes

4. A bank has an 'ACCMASTER' table that holds the current status of a client's bank account. Another table called 'ACCTRAN' holds each transaction as it occurs at the bank (ie, Deposits/withdrawals of clients). The 'ACCTRAN' table must hold a flag indicating whether the transaction was credit or debit. Write PL/SQL program to update the 'ACCMASTER' table and set the balance depending on whether the account is debited or credited. The updation should be done only for those records that are processed.

ACCMASTER		**ACCTRAN**	
Accno	Primary key	Accno	Foreign key
Name		Transaction date	
Balance		Deb_cred	debit/Credit
		Amount	
		Processed	Yes/No flag

a) Create a trigger that shows a warning message whenever the Balance amount is less than Rs.500.

5. A bus reservation database system contains the following tables.

Bus(Bus_no (PK), arrival, departure, seats)

Reservation(Bus_no(FK), PassengersName, age, date of travel)

Create the tables and insert values.

a) Write a procedure to display the details when the bus no is specified.

b) Write a procedure to display the details of passengers traveling in a bus on a particular date.

c) Use a trigger to ensure that the reservation procedure will be successful only if seats are available.

6. Implement a library management system.

Student Table

REGNO	NAME	DEPT	CLASS	FINE	BOOKS

Library_books Table

BID	TITLE	AUTHOR	EDITION	COPIES

Status Table

REGNO	BID	STATUS	ISSUE	RETURN

a) Procedure to issue a book
b) Procedure to return a book
c) Raise a trigger when updating a table
d) Raise a trigger when a student tries to take more than 5 books
e) Raise a trigger when the book is returned after due date
f) Raise a trigger when the searched book is not available
g) Raise a trigger when the fine amount is greater than 200

7. Develop a query to create a table named STUDENT(Regno, name, mark1, mark2, total).

a) Insert 5 records with their total as 0.
b) Develop a procedure p1 with Regno, mark1, & mark2 as arguments. Calculate the total(mark1+mark2) and update the values in the STUDENT table.
c) Create a trigger that shows a message when the marks are below 40%.

8. <u>Implement billing system using the following tables</u>

Tables are as follows:
stock(item_code(PK),item_name, qty)
item_price (item_code (FK), price)
order(customer_name,item_name,item_code(FK), qty)
account(bill_no,customer_name,total_amt)

Insert appropriate data into tables stock and item_price
Write PL/SQL code

a. To order an item (read customer_name,item_name, and qty)
b. To generate the bill for a particular customer auto-generate the bill_no field.
c. Insert customer_name and total_amt into the account table. Update the stock table and display the invoice. If the billing amount is greater than Rs.500, give a 10% discount. (use trigger)

9. **Create the following tables**

customer(cname (PK),caddress)
custaccnt(cname (FK),acctno(should start with 'A' – PK))
account(acctno,balance,branchname (FK))
branch(branchname (PK), branchcity)

a) create a trigger to ensure that a customer should not have more than 3 accounts
b) Write a procedure 'branch list' that produces for each branch a list of customers and the total amount of money held in the accounts in that branch.

c) Display the branch name and customer name of an account with the highest balance in the city 'cochin'.

10. Create a DEPT Table with the following fields: DeptNo, DeptName, EmpName, Loc

a) Write a Trigger to ensure that DEPT TABLE does not contain duplicate or null values in the DeptNo column.
b) Create a procedure that
-selects the DeptName containing the alphabet 'c' and changes the loc of the employee to 'Chennai'.
-counts the number of changes made in the table.

11. **Create an ITEM table that contains the following fields:**
ItemNo, ItemName, qty_on_hand, re_level, Date_of_reorder

a) Create a trigger that displays a message when an update occurs. Update the qty_on_hand of the ITEM Table when the quantity falls below the value of 5.
b) Create a procedure that performs the following:
-takes a quantity order for a particular item
-reduces the quantity on hand
-update the new value to table

12.

PERSON (driver-id: string, name: string, address: string)
ACCIDENT (report-number: int, Year: date, location: string)
PARTICIPATED (driver-id: string, Regno: string,report-number: int,damage-amount: int)

a) Create the above tables by properly specifying the primary keys and the foreign keys. Enter at least five tuples for each relation
b) Create a procedure to
-Find the total number of people who owned cars that were involved in accidents in 2006.
-Also display the names of the driver involved.
c) Create a view to display all driver and report_number with damage amount greater than Rs.1000
d) Create a function to display the latest 3 driver names involved in accidents.

13.

BRANCH (branch_name: string, branch_city: string, assets: real)
ACCOUNT (acc_no: int, branch_name: string, balance: real)
CUSTOMER (customer_name: string, customer_street: string, city: string)
DEPOSITOR (customer_name: string, acc_no: int)
LOAN (loan_number: int, branch_name: string, amount: real)

a) Create the above tables by properly specifying the primary keys and the foreign keys. Enter at least five tuples for each relation.
b) Create a function to find all the customers who have at least two accounts at the MAIN branch.

c) Create a procedure to find all the customers who have an account at all branches located in a specific city.
d) Create a function to display the top 3 depositor names.

14. **Create an EMPLOYEE table with the following fields:**
EMP_NO, EMP_NAME, EMP_ HIREDATE, Basic, Commission, Deduction, DEPT_ NO
Department Table
DEPT_NO, DEPT_NAME, DEPT_LOCATION

a) Write a procedure to list the employees who earn less than the average salary.
b) Write a procedure to
- find all employees of the department='CSE'
- find all the employees who are not "Smith" or "Jones".
c) Create a trigger that issues a message once the table is updated.

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