

Problem statement 1. Consider following Bank database schema and solve given queries:

Account(Acc_no, branch_name, balance)
branch(branch_name, branch_city, assets)
customer(cust_name, cust_street, cust_city)
Depositor(cust_name, acc_no)
Loan(loan_no, branch_name, amount)
Borrower(cust_name, loan_no)

- Q.1 Create above tables with appropriate constraints like primary key, foreign key, not null etc. with suitable data
- Q.2. Create synonym for customer table as cust.
- Q.3 Add customer phone number in Customer table.
- Q.4 Delete phone number attribute from Customer table.
- Q.5. Find the names of all branches in loan relation.
- Q.6. Find all customers who have a loan from bank. Find their names, loan_no and loan amount.
- Q.7. List all customers in alphabetical order who have loan from Akurdi branch.
- Q.8. Find all customers who have an account or loan or both at bank.
- Q.9. Find average account balance at Akurdi branch.
- Q.10. Find no. of depositors at each branch.
- Q.11. Delete all tuples at every branch located in Nigdi.

Problem statement 3.

a) Consider following database schema and solve given queries

cust_mstr(cust_no, fname, lname)
add_dets(code_no, add1, add2, state, city, pincode)

1. Create above Tables with suitable data
2. **Retrieve the address of customer Fname as 'xyz' and Lname as 'pqr'**
3. **Create View on add_dets table by selecting any two columns and perform insert update delete operations**

b) Create following Tables

emp_mstr(e_mpno, f_name, l_name, m_name, dept, desg, branch_no)
branch_mstr(name, b_no)

List the employee details along with branch names to which they belong

Problem statement 2. Consider following Bank database schema and solve given queries:

Account(Acc_no, branch_name,balance)
branch(branch_name,branch_city, assets)
customer(cust_name,cust_street,cust_city)
Depositor(cust_name,acc_no)
Loan(loan_no,branch_name,amount)
Borrower(cust_name,loan_no)

- Q.1 Create above tables with appropriate constraints like primary key, foreign key constraints, not null etc. with suitable data
- Q.2. Modify “assets” attribute of branch table to “Property”
- Q.3. Find all loan numbers for loans made at Akurdi Branch with loan amount > 12000.
- Q.4. Find all customers who have both account and loan at bank.
- Q.5. Find all customer who have account but no loan at the bank.
- Q.6. Find the average account balance at each branch
- Q.7. Find the branches where average account balance > 12000.
- Q.8. Find number of tuples in customer relation.
- Q.9. Calculate total loan amount given by bank.
- Q.10. Delete all loans with loan amount between 1300 and 1500.
- Q.11. Create sequence roll_seq and use in student table for roll_no column.

Problem statement 4.

- a) Create following Tables with suitable data and solve following query

cust_mstr(custno,fname,lname)
 acc_fd_cust_dets(codeno,acc_fd_no)
 fd_dets(fd_sr_no,amt)

List the customer holding fixed deposit of amount more than 5000

- b) **Create view on cust_mstr and acc_fd_cust_dets tables by selecting any one column from each table perform insert update delete operations**
- c) Create following Tables with suitable data and solve following query

emp_mstr(emp_no,f_name,l_name,m_name,dept)
 cntc_dets(code_no,cntc_type,cntc_data)

List the employee details along with contact details using left outer join & right join

Problem statement 5.

a) Consider following database schema and solve given queries

cust_mstr(cust_no,fname,lname)

add_dets(code_no,add1,add2,state,city,pincode)

1. Create above Tables with suitable data
2. Retrieve the address of customer Fname as 'xyz' and Lname as 'pqr'
3. Create View on add_dets table by selecting any two columns and perform insert update delete operations

b) Create following Tables

cust_mstr(cust_no,fname,lname)

add_dets(code_no,pincode)

List the customer who do not have bank branches in their vicinity.

Problem statement 6.

Q 1. Consider table Stud(Roll, Att,Status)

Write a PL/SQL block for following requirement and handle the exceptions.

Roll no. of student will be entered by user. Attendance of roll no. entered by user will be checked in Stud table. If attendance is less than 75% then display the message “Term not granted” and set the status in stud table as “D”. Otherwise display message “Term granted” and set the status in stud table as “ND”.

Q 2. The bank manager has decided to activate all those accounts which were previously marked as inactive for performing no transaction in last 365 days. Write a PL/SQ block (using implicit cursor) to update the status of account, display an approximate message based on the no. of rows affected by the update. (Use of %FOUND, %NOTFOUND, %ROWCOUNT)

Problem statement 7.

Q 1. Write an SQL code block these raise a user defined exception where business rule is violated. BR for client_master table specifies when the value of bal_due field is less than 0 handle the exception.

Q 2. Organization has decided to increase the salary of employees by 10% of existing salary, who are having salary less than average salary of organization, Whenever such salary updates takes place, a record for the same is maintained in the increment_salary table.

EMP (E_no , Salary)

increment_salary(E_no , Salary)

Problem statement 8.

Q 1. Borrower(Roll_no, Name, DateofIssue, NameofBook, Status)

Fine(Roll_no,Date,Amt)

1. Accept roll_no & name of book from user.
2. Check the number of days (from date of issue), if days are between 15 to 30 then fine amount will be Rs 5per day.
3. If no. of days>30, per day fine will be Rs 50 per day & for days less than 30, Rs. 5 per day.
After submitting the book, status will change from I to R
4. If condition of fine is true, then details will be stored into fine table.
5. Also handles the exception by named exception handler or user define exception handler.

Problem statement 9.

Q 1. Write PL/SQL block using explicit cursor for following requirements:

College has decided to mark all those students detained (D) who are having attendance less than 75%.

Whenever such update takes place, a record for the same is maintained in the D_Stud table.

create table stud21(roll number(4), att number(4), status varchar(1));

create table d_stud(roll number(4), att number(4));

Problem statement 10.

Q 1. Consider table Stud(Roll, Att,Status)

Write a PL/SQL block for following requirement and handle the exceptions.

Roll no. of student will be entered by user. Attendance of roll no. entered by user will be checked in Stud table. If attendance is less than 75% then display the message “Term not granted” and set the status in stud table as “D”. Otherwise display message “Term granted” and set the status in stud table as “ND”.

Q 2. Write a update, delete trigger on clientmstr table. The System should keep track of the records that ARE BEING updated or deleted. The old value of updated or deleted records should be added in audit_trade table. (separate implementation using both row and statement triggers)

Problem statement 13.

Q 1. Write a stored function in PL/SQL for given requirement and use the same in PL/SQL block.

Account no. and branch name will be accepted from user. The same will be searched in table acct_details. If status of account is active then display appropriate message and also store the account details in active_acc_details table, otherwise display message on screen “account is inactive”.

Problem statement 11.

Q 1. Write an SQL code block these raise a user defined exception where business rule is violated. BR for client_master table specifies when the value of bal_due field is less than 0 handle the exception.

Q 2. Write a before trigger for Insert, update event considering following requirement:

Emp(e_no, e_name, salary)

I) Trigger action should be initiated when salary is tried to be inserted is less than Rs. 50,000/-

II) Trigger action should be initiated when salary is tried to be updated for value less than Rs. 50,000/-

Action should be rejection of update or Insert operation by displaying appropriate error message. Also the new values expected to be inserted will be stored in new table.

Tracking(e_no, salary).

Problem statement 12.

Q 1. . Write a PL/SQL stored Procedure for following requirements and call the procedure in appropriate PL/SQL block.

Borrower(Rollin, Name, DateofIssue, NameofBook, Status)

Fine(Roll_no,Date,Amt)

Accept roll_no & name of book from user.

1. Check the number of days (from date of issue), if days are between 15 to 30 then fine amount will be Rs 5per day.
2. If no. of days>30, per day fine will be Rs 50 per day & for days less than 30, Rs. 5 per day.
3. After submitting the book, status will change from I to R.
4. If condition of fine is true, then details will be stored into fine table.

Problem statement 14.

Q 1. Write a Stored Procedure namely proc_Grade for the categorization of student. If marks scored by students in examination is <=1500 and marks>=990 then student will be placed in distinction category if marks scored are between 989 and900 category is first class, if marks 899 and 825 category is Higher Second Class.

Write a PL/SQL block for using procedure created with above requirement.

Stud_Marks(name, total_marks)

Result(Roll,Name, Class)

Problem statement 15.

Create Database PCCOE

Create following Collections

Teachers(Tname,dno,dname,experience,salary,date_of_joining)

Students(Sname,roll_no,class)

- Q1. Find the information about all teachers
- Q2. Find the information about all teachers of computer department
- Q3. Find the information about all teachers of computer,IT,and e&TC department
- Q4. Find the information about all teachers of computer,IT,and E&TC department having salary greater than or equal to 10000/-
- Q5. Find the student information having roll_no = 2 or Sname=xyz
- Q6. Update the experience of teacher-praveen to 10years, if the entry is not available in database consider the entry as new entry.
- Q7. Update the department of all the teachers working in IT department to COMP
- Q8. Find the teachers name and their experience from teachers collection
- Q9. Using Save() method insert one entry in department collection
- Q10. Using Save() method change the dept of teacher praveen to IT
- Q11. Delete all the documents from teachers collection having IT dept.
- Q12. Display with pretty() method, the first 3 documents in teachers collection in ascending order.

Problem statement 16.

Consider each document in the zipcode collection has the following form:

```
{  
  "_id": "10280",  
  "city": "NEW YORK",  
  "state": "NY",  
  "pop": 5574,  
}
```

}1. Return States with Populations above 10 Million

- 2. Display the department wise average salary
- 3. Display the no. Of employees working in each department
- 4. Display the department wise total salary of departments having total salary greater than or equals to 50000/-
- 5. Write the queries using the different operators like max, min. Etc.
- 6. Create the simple index on roll_no field
- 7. create unique index on any field for above given collections
- 8. create compound index on any fields for above given collections
- 9. Show all the indexes created in the database PCCOE
- 10. Show all the indexes created in above collections.

Problem statement 17.

Q 1. Using Map-Reduce function comply the following requirements

1. Display the salary of employees department wise
2. Display the count of employees department wise
3. Consider the collection “Orders “ with the following types of documents

```
{  
  _id: ObjectId("50a8240b927d5d8b5891743c"),  
  cust_id: "abc123",  
  status: 'A',  
  price: 25,  
}
```

Return the Total Price Per Customer

4. Display the total salary of employees working in computer department.
5. Consider each document in the zipcode collection has the following form:

```
{  
  "_id": "10280",  
  "city": "NEW YORK",  
  "state": "NY",  
  "pop": 5574,  
}
```

Return the city wise population of the cities in the NY state.

Problem statement 18.

Implement Mysql database connectivity with Java Implement Database navigation operations (add, delete, edit,) using JDBC

Problem statement 19.

Write a program to implement MogoDB database connectivity with Java.

Implement Database navigation operations (add, delete, edit etc.) using JDBC.

Problem statements 20

Consider the relational database

Supplier(Sid,Sname,address)

Parts(Pid, Pname, Color)

Catalog(sid,pid,cost)

Q. Find name of all parts whose color is green.

Q. Find names of suppliers who supply some red parts.

Q. Find names of all parts whose cost is more than Rs25.

Consider the relational database

Person(pname,street city)

Company(cname,city)

Manages(pname,mname)

Q. Find the street and city of all employees who work for “Idea”, live in Pune and earn more than 3000.

Consider the relational database

Student(Rollno,name,address)

Subject(sub_code,sub_name)

Marks(Rollno,sub_code, marks)

Q. Find out average marks of each student along with the name of student.

Q. Find how many students have failed in the subject “DBMS”

Problem statements 21

Write PL/SQL code block that will accept account number from user , check if the users balance is less than the minimum balance , only deduct Rs.100/- from the balance .

Problem statements 22

Write PL/SQL code block for inverting number 1234 to 4321.

Problem statements 23

The bank manager has decided to mark all those accounts as inactive (I) on which there are no transactions performed in last 365 days. Whenever any such update takes place a record for the same is maintained in the INACT_MASTER_TABLE comprising of the account number, the opening date and type of account. Write PL/SQL code block to do the same(cursor for loop)

Problem statements 24

Write PL/SQL code block that will merge the data available in the newly created table NEW_BRANCHES with the data available in the table BRANCH_MASTER. If the data in the first table already exists in the second table then data should be skipped.(parameterized cursor)

Problem statements 25

Write PL/SQL code block such that depending upon user supplied account number, the customer to whom account belongs , the introducer of that account are inserted into ACCOUNT_MASTER_INFO table .If the user enters an account number that is not in the ACCOUNT_MASTER table, then the PL/SQL block must display appropriate error message(Exception Handling)

Problem statements 26

A stored function is created to perform the ACCOUNT_NO check operation .F_checkAccNO() is the name of function which accept a variable ACCOUNT_NO and returns the value to host environment The value changes from 0(if ACCOUNT_NO does not exist) to 1(if ACCOUNT_NO exist) depending on the records retrieved.

Problem statements 27

create a row level trigger for the CUSTOMERS table that would fire for INSERT or UPDATE or DELETE operations performed on the CUSTOMERS table. This trigger will display the salary difference between the old values and new values

Problem statements 28

Write PL/SQL block to update the Customer table and increase the salary of each customer by 500 and use the **SQL%ROWCOUNT** attribute to determine the number of rows affected.

Problem statements 29

Let's consider the product table and order_items table from sql joins. Here product_id is a primary key in product table and a foreign key in order_items table.

If user try to delete a product_id from the product table when it has child records in order_id table an exception will be thrown with oracle code number -2292.

Problem statements 30

Let's consider the product table and order_items table from sql joins to explain user-defined exception.

Let's create a business rule that if the total no of units of any particular product sold is more than 20, then it is a huge quantity and a special discount should be provided.