1. Create a cursor to retrieve all the employee’s SSNs and last names from the EMPLOYEE table
2. For sample Employee DB print out the salaries over 30000 for all personnel use exception handling
3. Write a PL/SQL program that uses an explicit cursor to display the item and the inventory information for each product. The cursor will also calculate the values for each inventory item (qty\_hd \* itemrate), and the total value of all inventory items for that product category.(Use following)
   1. **Field name Data type**
   2. Ship\_id Number -- This is the ID of a particular Ship
   3. Date\_expected Date --The date at which the goods are expected to arrive
   4. Qty\_expected Number --The quantity that is supposed to arrive
   5. Description Varchar2 --The description of the items
   6. Color Varchar2 --The color of the items
   7. Qty\_hand Number –The quantity on hand for these items
   8. Itemrate Number—Price of each item.
   9. Sample data
   10. Ship id Date expected QtyExpected Description Color QtyHand Rate
   11. 212 15-Nov-2001 25 3-SeasonTents forest 3 500
   12. 212 25-Nov-2001 50 3-SeasonTents Red 5 500
   13. 213 15-Mar-2003 75 Caps 10 250
4. Write a PL/SQL program that uses implicit cursor to display the data expected, quantity expected, item description, color and quantity on hand for any particular Ship ID number. Include exception handlers for the cases where no data is returned or where multiple records are returned.
   1. **Field name Data type**
   2. Ship\_id Number -- This is the ID of a particular Ship
   3. Date\_expected Date --The date at which the goods are expected to arrive
   4. Qty\_expected Number --The quantity that is supposed to arrive
   5. Description Varchar2 --The description of the items
   6. Color Varchar2 --The color of the items
   7. Qty\_hand Number –The quantity on hand for these items
   8. Itemrate Number—Price of each item.
   9. Sample data
   10. Ship id Date expected QtyExpected Description Color QtyHand Rate
   11. 212 15-Nov-2001 25 3-SeasonTents forest 3 500
   12. 212 25-Nov-2001 50 3-SeasonTents Red 5 500
   13. 213 15-Mar-2003 75 Caps 10 250
   14. Format the output so that it is displayed as follows (assuming 212 is the Ship ID):
   15. Shipment 212 is expected to
   16. Arrive on 15-Nov-01
   17. And will contain 25
   18. 3-Season Tents, Color forest
5. Write a PL/SQL program that uses an explicit cursor to display the item and the inventory information for each product. The cursor will also calculate the values for each inventory item (qty\_hd \* itemrate), and the total value of all inventory items for that product category. Use following DB  **Field name Data type**
   1. Ship\_id Number -- This is the ID of a particular Ship
   2. Date\_expected Date --The date at which the goods are expected to arrive
   3. Qty\_expected Number --The quantity that is supposed to arrive
   4. Description Varchar2 --The description of the items
   5. Color Varchar2 --The color of the items
   6. Qty\_hand Number –The quantity on hand for these items
   7. Itemrate Number—Price of each item.
   8. Sample data
   9. Ship id Date expected QtyExpected Description Color QtyHand Rate
   10. 212 15-Nov-2001 25 3-SeasonTents forest 3 500
   11. 212 25-Nov-2001 50 3-SeasonTents Red 5 500
   12. 213 15-Mar-2003 75 Caps 10 250
6. Create an explicit cursor that returns and then displays the itemdesc, itemrate, quantity on hand, and total price (qty\_hd \* itemrate) for each individual inventory item. Format each inventory item return values as follows:  
   Description:--This is the item description  
   Price: -- This is the itemrate  
   QOH:--This is the quantity on hand  
   Value:--This is qty\_hd multiplied by itemrate
   1. Create a variable that sums up the total value of all inventory items and then display the total value after all rows are processed. Format the following output as:  
      TOTAL VALUE: 45789.6 – This is just an example
   2. Create a predefined exception handler for the case where no data is returned.
7. Write a function that calculates tax on a personnel member’s salary.

You should then be able to test your function by typing something like:

SELECT surname, first name, salary, tax(35000,500) from dual; (the two parameters being salary and bonus respectively).

Things you need to know and incorporate (read carefully and try to work out the formulae from the information given):

Pass two parameters for salary and bonus

***Taxable salary*** is the salary + bonus – tax allowance

***Tax allowance*** is a constant at £4335

There are two ***tax limits*** at £3999 (lower) and £28999 (upper)

Salary is tested against these tax limits

If salary is less than the lower tax limit then tax is calculated as 10% of taxable salary

If salary is between the two tax limits then tax is calculated as 22% of taxable salary

If salary is higher than the upper tax limit then tax is calculated as:

22% of the upper limit + 40% of the difference between the taxable salary and the upper limit.

1. Create a database table, which has the following fields:
   1. Field name Data type
   2. Student Name Varchar2
   3. CourseID Number
   4. Course description Varchar2
   5. Course credits Number
   6. Grade varchar2
   7. Enter the following sample data.
   8. Student Name CourseID Course description Course credits Grade
   9. Bordoloi MIS 101 Intro to Info. Systems 3 A
   10. Bock MIS 301 System Analysis 3 A
   11. John MIS 451 Client/Server Systems 3 C
   12. Bordoloi MIS 451 Client/Server Systems 3 A
   13. John MIS 301 System Analysis 3 C
   14. Bock MIS 451 Client/Server Systems 3 B
   15. John MIS 101 Intro to Info. Systems 3 B
2. Calculate the total credits and the overall grade point for each student. Course Grade Points are awarded as follows:
   1. Grade Grade Points
   2. A 4
   3. B 3
   4. C 2
   5. D 1
   6. F 0
   7. Format the output as follows:
   8. Student Name: John
   9. MIS 101 Intro to Info. Systems 3 B
   10. MIS 301 System Analysis 3 C
   11. MIS 451 Client/Server Systems 3 C
   12. Total Credits: 9
   13. Overall GPA:2.33 (i.e. (3+2+2)/3)
   14. Hint: Round the overall GPA using the ROUND function.
3. Write a function that calculates tax on a personnel member’s salary.
4. Perform the map-reduce operation on the orders collection to group by the cust\_id, and calculate the sum of the price for each cust\_id
5. Consider the following relations:

S (S#, SNAME, STATUS, CITY)

SP (S#, P, QTY)

P (P#, PNAME, COLOR, WEIGHT, CITY)

Give an expression in SQL for each of queries below:

Get supplier names for supplier who supply at least one red part

Get supplier names for supplier who do not supply part P2.

1. Construct a view for the above relations which has the information about suppliers and the parts they supply. The view contains the S#, SNAME, P# , PNAME renamed as SNO, NAME, PNO, PNAME.
2. Consider the following relational schemas:

EMPLOYEE (EMPLOYEE\_NAME, STREET, CITY)

WORKS (EMPLOYEE\_NAME, COMPANYNAME, SALARY)

COMPANY (COMPANY\_NAME, CITY)

Find the names of all employees who work for ‘First Bank Corporation’.

Find the names and company names of all employees sorted in ascending order of company.name and descending order of employee names of that company.

Change the city of First Bank Corporation to ‘New Delhi’

1. Write a Function to generate Fibonacci series
2. Write a function to generate n factorial number
3. Write a function to check the given no. is prime or not
4. Write a function which print the sum of all odd numbers between 1 to 100
5. Write a function which accept i/o as number & print Whether it is Even or Odd
6. Write function to calculate income tax , pass basic (per month) as input
   1. DA = 12% of Basic, HRA = 10% of Basic, TA = 15 % of Basic, PF = 8% of Basic. Income tax on Annual Income slabs are as follows upto 1 Lack – Nil , 100000 to 150000 – 10%, 150000 to 250000 – 15%, < 250000 – 20%
7. Write a procedure to set returndate as sysdate. Calculate fine if return date is more than 3 days. Fine will be Rs. 10 par extra day. Use rollno as input to procedure. Create table as (rollno, name, branch, bookno, issuedate, returndate, fine) During data insert returndate and fine should be null.
8. Employee ( emp\_no , ename , job, mgr , date, sal)
   1. Write a PL/SQL block to print the no. of employee joined in month of December
   2. Write a PL/SQL block with curser to print the information of first five highest salary earner Pass emp\_no as an argument to procedure and modify salary of that employee.
9. Write cursor program which display name, bookno, issuedate of the rows where returndate is null.
10. Write a PL/SQL block to find grade of minimum 10 students.
11. Write a PL/SQL block to find even and odd nos from 1 to 50.Write a PL/SQL block to find prime nos from 1 to 50.
12. Employee ( emp\_no , ename , job, mgr , date, sal)
    1. Write a PL/SQL block to Find name of employees having salary grater than 5000.
    2. Write PL/SQL block to give 20 % comm. to only.
13. Emp
    1. Use given database (empno , ename , job, manager, h-date , sal, deptno)
    2. Dept(deptno, name , designation)
    3. Pass a year to procedure and print the information of employee who were joined before this year. Pass the name to a function and function will return the month in which that employee was hired
14. Emp (empno , ename , job, manager, h-date , sal, deptno)
    1. Dept (deptno, name , designation)
    2. Use given database and Write a delete Trigger for dept such that when dept is deleted, then the respective information from other tables is also deleted
15. Write an insert, update & delete triggers for student for student database. Write a trigger which does not allow inserting on Sunday.
16. For an employee database raise the salary by 5 %
    1. For all Manager assume { emp( emp\_no , name , designation , salary) }
17. Write a trigger which will show the total number of entries present in the table before insert is done. Raise error if entries are more than 10. Consider following DB.
    1. Create table title (title varchar2(20) not null, Title\_id varchar2(10) constraint tit\_key primary key, rel\_date date, rent number(5));
    2. insert into title values ('shan','s01','03-march-06',70);
    3. insert into title values ('ddlj','s03','06-march-03',88);
    4. insert into title values ('MPK','s07','06-march-06',100);
    5. insert into title values ('kaal','s02','23-sep-05',100);
    6. insert into title values ('dus','s055','23-sep-05',100);
18. Write a PL/SQL block to find area of circle,trangle,rectangle,circlemsquare take input from user for choice.
19. Implement aggregation and indexing with suitable example using MongoDB Suppose a client needs a database design for his blog website and see the differences between RDBMS and MongoDB schema design. Website has the following requirements.

· Every post has the unique title, description and url.

· Every post can have one or more tags.

· Every post has the name of its publisher and total number of likes

· Every Post has comments given by users along with their name, message, data-time and likes.

· On each post there can be zero or more comments.

**1. Display Total number of post by specific Publisher**

**2. Get the maximum number of likes for specific post**

**3. Get the minimum number of tags for specific post**

**4. Find out average number of likes for a specific author**

**5. Set unique index on the post title**

1. Design and Develop MongoDB Queries using CRUD operations. (Use CRUD operations, SAVE method, logical operators)

**Consider the collection of students containing their project details like** { project title, group no, guide name, team details {student name, mobile no, email id}, number of students, remarks by guide}

1. Create the collection and add at least 3 documents in it using save method

2. Write a query to find out a project with more than 2 students in it

3. Write a query to find out number of projects under ‘xyz’ guide.

4. Write a query to find out the email ids and name of all students.

5. Find out students who have either email ID or Mobile number

6. Show 3-4 queries using logical operators

1. Implement Map reduces operation with suitable example using MongoDB. Use blog database for map reduce query
2. Design and Implement any 5 query using MongoDB Create Database for Blog application and do queries.

**1. Display Blog updated before given date (specify some date)**

**2. Display information in sorted order on date of creation**

**3. Display documents having number of shares less than 10**

**4. Display documents whose likes greater than 100**

**5. Post handle by specific author**

**6. Update a name of page handler from xyz to pqr**

**7. Display document updated today**

**8. Remove document with like less than 1**

**9. Document with views less than 100 and greater than 50**

**10. Display document number 5 to 8.**

1. Write a program to implement MogoDB database connectivity with PYTHON Implement Database navigation operations (add, delete, edit etc. ) using ODBC/JDBC.
2. Implement MYSQL/Oracle database connectivity with JAVA. Implement Database navigation operations (add, delete, edit,) using ODBC/JDBC.i Project)

SQL> desc emp;

Name Null? Type

----------------------------------------- -------- ---------------------------

EMPNO NOT NULL NUMBER(4)

ENAME VARCHAR2(10)

JOB VARCHAR2(9)

MGR NUMBER(4)

HIREDATE DATE

SAL NUMBER(7,2)

COMM NUMBER(7,2)

DEPTNO NUMBER(2)

SQL> desc dept;

Name Null? Type

----------------------------------------- -------- --------------------------

DEPTNO NOT NULL NUMBER(2)

DNAME VARCHAR2(14)

LOC VARCHAR2(13)

SQL> select \* from emp;

EMPNO ENAME JOB MGR HIREDATE SAL COMM DEPTNO

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7369 SMITH CLERK 7902 17-DEC-80 800 20

7499 ALLEN SALESMAN 7698 20-FEB-81 1600 300 30

7521 WARD SALESMAN 7698 22-FEB-81 1250 500 30

7566 JONES MANAGER 7839 02-APR-81 2975 20

7654 MARTIN SALESMAN 7698 28-SEP-81 1250 1400 30

7698 BLAKE MANAGER 7839 01-MAY-81 2850 30

7782 CLARK MANAGER 7839 09-JUN-81 2450 10

7788 SCOTT ANALYST 7566 19-APR-87 3000 20

7839 KING PRESIDENT 17-NOV-81 5000 10

7844 TURNER SALESMAN 7698 08-SEP-81 1500 0 30

7876 ADAMS CLERK 7788 23-MAY-87 1100 20

7900 JAMES CLERK 7698 03-DEC-81 950 30

7902 FORD ANALYST 7566 03-DEC-81 3000 20

7934 MILLER CLERK 7782 23-JAN-82 1300 10

14 rows selected.

SQL> select \* from dept;

DEPTNO DNAME LOC

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10 ACCOUNTING NEW YORK

20 RESEARCH DALLAS

30 SALES CHICAGO

40 OPERATIONS BOSTON