# CSE5011 –

# Database Systems and Design

Assessment - 2

(Ex-3 and Ex-4)

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# Exercise: III
# Operators and Functions

1. **Find the employee names whose salary lies in the range between 30000 and 70000.**

```
select FIRST_NAME, MID_NAME, LAST_NAME from employee
where salary between 30000 and 70000
```

Results Explain Describe Saved SQL History

| FIRST_NAME | MID_NAME | LAST_NAME |
|---|---|---|
| Frankin | T | Wong |
| Jennifer | S | Wallace |
| John | B | Smith |
| Ramesh | K | Narayan |
| Joyce | - | PAN |

5 rows returned in 0.01 seconds CSV Export

2. **Find the employees who have no supervisor.**

```
select * from employee where SUPERVISOR_SSN is null
```

Results Explain Describe Saved SQL History

| FIRST_NAME | MID_NAME | LAST_NAME | SSN_NUMBER | BIRTHDAY | ADDRESS | SEX | SALARY | SUPERVISOR_SSN | DEPARTMENT_NUMBER |
|---|---|---|---|---|---|---|---|---|---|
| Tom | - | Hiddleston | 554433221 | 09-FEB-81 | Beverly Hills, USA | M | 88000 | - | 2 |
| Doug | E | Gilbert | 123 | 09-JUN-68 | Chennai | M | 80000 | - | 1 |
| Joyce | - | PAN | 124 | 07-FEB-73 | Vellore | F | 70000 | - | - |

3 rows returned in 0.05 seconds CSV Export

## 3. Display the bdate of all employee s in the format ‘DDthMonthYYYY’.

```
select to_char(BIRTHDAY, 'DDthMonthYYYY') as Bdate from employee
```

Results Explain Describe Saved SQL History

| BDATE |
|---|
| 08THDecember 1972 |
| 20THJune 1983 |
| 09THJanuary 1987 |
| 15THSeptember1985 |
| 13THJune 1981 |
| 11THAugust 1983 |
| 16THFebruary 1989 |
| 22NDNovember 1984 |
| 22NDNovember 1967 |
| 09THFebruary 1981 |
| More than 10 rows available. Increase rows selector to view more rows. |

10 rows returned in 0.00 seconds CSV Export

## 4. Display the employee names whose bdate is on or before 1978.

```
select FIRST_NAME, MID_NAME, LAST_NAME from employee
where BIRTHDAY <= to_date('31-DEC-1978')
```

Results Explain Describe Saved SQL History

| FIRST_NAME | MID_NAME | LAST_NAME |
|---|---|---|
| Frankin | T | Wong |
| Mark | A | Ruffalo |
| Doug | E | Gilbert |
| Joyce | - | PAN |
| Robert | D | Junior |

5 rows returned in 0.00 seconds CSV Export

5. **Display the department name that starts with 'M'.**

```
select DEPARTMENT_NAME from department where DEPARTMENT_NAME like 'M%';
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NAME |
| --- |
| Mental Health |

1 rows returned in 0.00 seconds CSV Export

6. **Display the department names' that ends with 'E'.**

```
select DEPARTMENT_NAME from department where DEPARTMENT_NAME like '%e';
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NAME |
| --- |
| Finance |

1 rows returned in 0.02 seconds CSV Export

7. **Display the names of all the employees having supervisor with any of the following SSN 123, 124.**

```
select FIRST_NAME, MID_NAME, LAST_NAME from employee where SUPERVISOR_SSN in(123, 124)
```

Results Explain Describe Saved SQL History

| FIRST_NAME | MID_NAME | LAST_NAME |
| --- | --- | --- |
| Frankin | T | Wong |
| Jennifer | S | Wallace |
| John | B | Smith |
| Ramesh | K | Narayan |
| Robert | D | Junior |

5 rows returned in 0.02 seconds CSV Export

8. **Display all the department names in upper case and lower case.**

```
select upper(DEPARTMENT_NAME) as upper, lower(DEPARTMENT_NAME) as lower from department
```

Results Explain Describe Saved SQL History

| UPPER | LOWER |
|---|---|
| FINANCE | finance |
| IT | it |
| MENTAL HEALTH | mental health |
| ADMINISTRATION | administration |
| HEADQUARTER | headquarter |
| PRODUCTION | production |

6 rows returned in 0.02 seconds CSV Export

9. **Display the first four characters and last four of the department names using substring function.**

```
select substr(DEPARTMENT_NAME, 1, 4) as first_four,
substr(DEPARTMENT_NAME, -4) as last_four
from department
```

Results Explain Describe Saved SQL History

| FIRST_FOUR | LAST_FOUR |
|---|---|
| Fina | ance |
| IT | - |
| Ment | alth |
| Admi | tion |
| Head | rter |
| Prod | tion |

6 rows returned in 0.00 seconds CSV Export

**10. Display the substring of the Address (starting from 5th position to 11th position) of all employees.**

```
select substr(ADDRESS, 5, 11) as address_5_11 from employee
```

Results Explain Describe Saved SQL History

| ADDRESS_5_11 |
|---|
| i |
| nai |
| rai |
| alore |
| rly Hills, |
| W Sunset B |
| man Oaks, C |
| attan, New |
| rly Hills, |
| rly Hills, |
| rly Hills, |
| nai |
| ore |
| Burbank CA |

14 rows returned in 0.00 seconds CSV Export

**11. Display the Mgrstartdate on adding three months to it.**

```
select add_months(MANAGER_START_DATE, 3) as new_msrstratdate
from department
```

Results Explain Describe Saved SQL History

| NEW_MSRSTRATDATE |
|---|
| 18-AUG-13 |
| 12-SEP-15 |
| 01-APR-93 |
| 03-APR-12 |
| 16-MAR-15 |
| 01-JAN-89 |

6 rows returned in 0.00 seconds CSV Export

**12. Display the age of all the employees rounded to two digits.**

```
select round((SYSDATE - BIRTHDAY)/365.25, 2) as age from employee
```

Results Explain Describe Saved SQL History

| AGE |
|---|
| 48.83 |
| 38.3 |
| 34.74 |
| 36.06 |
| 40.32 |
| 38.16 |
| 32.64 |
| 36.87 |
| 53.87 |
| 40.66 |
| 25.35 |
| 53.33 |
| 48.66 |
| 56.51 |

14 rows returned in 0.01 seconds CSV Export

**13.Find the last day and next day of the month in which each manager has joined.**

```
select last_day(MANAGER_START_DATE)as lastday,
next_day(MANAGER_START_DATE, 'TUESDAY') as nextday_tuesday
from department
```

Results Explain Describe Saved SQL History

| LASTDAY | NEXTDAY_TUESDAY |
|---|---|
| 31-MAY-13 | 21-MAY-13 |
| 30-JUN-15 | 16-JUN-15 |
| 31-JAN-93 | 05-JAN-93 |
| 31-JAN-12 | 10-JAN-12 |
| 31-DEC-14 | 23-DEC-14 |
| 31-OCT-88 | 04-OCT-88 |

6 rows returned in 0.00 seconds CSV Export

## 14. Print a substring from the string ‘Harini’.

```
select substr('Harini',2, 3) from dual
```

Results Explain Describe Saved SQL History

| SUBSTR('HARINI',2,3) |
| --- |
| ari |

1 rows returned in 0.01 seconds CSV Export

## 15. Replace the string ‘ni’ from ‘Harini’ by ‘sh’.

```
select replace('Harini', 'ni', 'sh') from dual
```

Results Explain Describe Saved SQL History

| REPLACE('HARINI','NI','SH') |
| --- |
| Harish |

1 rows returned in 0.00 seconds CSV Export

## 16. Print the length of all the department names.

```
select DEPARTMENT_NAME, length(DEPARTMENT_NAME) as Dname_length from department
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NAME | DNAME_LENGTH |
| --- | --- |
| Finance | 7 |
| IT | 2 |
| Mental Health | 13 |
| Administration | 14 |
| Headquarter | 11 |
| Production | 10 |

6 rows returned in 0.00 seconds CSV Export

## 17. Display the date after 10 months from current date.

```
select ADD_MONTHS(SYSDATE, 10) from dual
```

Results Explain Describe Saved SQL History

| ADD_MONTHS(SYSDATE,10) |
|---|
| 13-AUG-22 |

1 rows returned in 0.00 seconds CSV Export

## 18. Display the next occurrence of Friday in this month.

```
select NEXT_DAY(SYSDATE, 'FRIDAY') from dual
```

Results Explain Describe Saved SQL History

| NEXT_DAY(SYSDATE,'FRIDAY') |
|---|
| 15-OCT-21 |

1 rows returned in 0.00 seconds CSV Export

## 19. Display the project location padded with **** on left side.

```
select LPAD(PROJECT_LOCATION, length(PROJECT_LOCATION)+4,'*') from project
```

Results Explain Describe Saved SQL History

| LPAD(PROJECT_LOCATION,LENGTH(PROJECT_LOCATION)+4,'*') |
|---|
| ****Delhi |
| ****Hyderabad |
| ****Chennai |
| ****Chennai |
| ****Bangalore |
| ****Mumbai |
| ****Sikkim |
| ****Pune |
| ****Patna |
| ****Chandigarh |

10 rows returned in 0.02 seconds CSV Export

# Exercise: IV
# Group Functions

## 1. How many different departments are there in the 'employee' table

```
select DEPARTMENT_NUMBER, count(*) as TOTAL_COUNT from employee group by DEPARTMENT_NUMBER
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NUMBER | TOTAL_COUNT |
|---|---|
| 1 | 5 |
| - | 1 |
| 2 | 4 |
| 5 | 2 |
| 3 | 2 |

5 rows returned in 0.02 seconds CSV Export

## 2. For each department display the minimum and maximum employee salaries

```
select DEPARTMENT_NUMBER, min(SALARY) as MIN_SALARY, max(SALARY) as MAX_SALARY from employee group by DEPARTMENT_NUMBER
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NUMBER | MIN_SALARY | MAX_SALARY |
|---|---|---|
| 1 | 30000 | 94000 |
| - | 70000 | 70000 |
| 2 | 40000 | 89000 |
| 5 | 90000 | 91000 |
| 3 | 38000 | 87000 |

5 rows returned in 0.03 seconds CSV Export

## 3. Print the average annual salary.

```
select ROUND(AVG(SALARY), 2) as Average_Annual_Salary from employee
```

Results Explain Describe Saved SQL History

| AVERAGE_ANNUAL_SALARY |
|---|
| 73214.29 |

1 rows returned in 0.01 seconds CSV Export

## 4. Count the number of employees over 30 age.

```
select COUNT(*) as employee_over_30 from employee where TRUNC((SYSDATE - BIRTHDAY)/365.35) > 30
```

Results Explain Describe Saved SQL History

| EMPLOYEE_OVER_30 |
|---|
| 13 |

1 rows returned in 0.00 seconds CSV Export

## 5. Print the Department name and average salary of each department.

```
select DEPARTMENT_NAME, ROUND(AVG(SALARY), 2) from employee E, department D where E.DEPARTMENT_NUMBER = D.DEPARTMENT_NUMBER group by DEPARTMENT_NAME
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NAME | ROUND(AVG(SALARY),2) |
|---|---|
| Administration | 65000 |
| Headquarter | 77800 |
| Finance | 62500 |
| Production | 90500 |

4 rows returned in 0.00 seconds CSV Export

## 6. Display the department name which contains more than 2 employees.

```
select DEPARTMENT_NAME, COUNT(E.DEPARTMENT_NUMBER) as NO_OF_EMPLOYEE from employee E, department D where E.DEPARTMENT_NUMBER = D.DEPARTMENT_NUMBER group by
DEPARTMENT_NAME having COUNT(E.DEPARTMENT_NUMBER) > 2
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NAME | NO_OF_EMPLOYEE |
|---|---|
| Administration | 4 |
| Headquarter | 5 |

2 rows returned in 0.03 seconds CSV Export

## 7. Calculate the average salary of employees by department and age

```
select DEPARTMENT_NUMBER, TRUNC((SYSDATE - BIRTHDAY)/365.35) as AGE, ROUND(AVG(SALARY), 2) as AVG_SALARY from employee group by DEPARTMENT_NUMBER, TRUNC((SYSDATE -
BIRTHDAY)/365.35) order by DEPARTMENT_NUMBER
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NUMBER | AGE | AVG_SALARY |
|---|---|---|
| 1 | 32 | 93000 |
| 1 | 34 | 30000 |
| 1 | 36 | 94000 |
| 1 | 38 | 92000 |
| 1 | 53 | 80000 |
| 2 | 38 | 43000 |
| 2 | 40 | 88000 |
| 2 | 48 | 40000 |
| 2 | 53 | 89000 |
| 3 | 25 | 87000 |
| 3 | 36 | 38000 |
| 5 | 40 | 91000 |
| 5 | 56 | 90000 |
| - | 48 | 70000 |

14 rows returned in 0.00 seconds CSV Export

## 8. Count separately the number of employees in the finance and administration department.

```
select DEPARTMENT_NAME, COUNT(E.DEPARTMENT_NUMBER) from employee e, department d
where DEPARTMENT_NAME in('Finance', 'Administration') and E.DEPARTMENT_NUMBER = D.DEPARTMENT_NUMBER group by DEPARTMENT_NAME
```

Results Explain Describe Saved SQL History

| DEPARTMENT_NAME | COUNT(E.DEPARTMENT_NUMBER) |
|---|---|
| Administration | 4 |
| Finance | 2 |

2 rows returned in 0.18 seconds CSV Export

## 9. List out the employees based on their seniority.

```
select * from employee order by BIRTHDAY
```

Results Explain Describe Saved SQL History

| FIRST_NAME | MID_NAME | LAST_NAME | SSN_NUMBER | BIRTHDAY | ADDRESS | SEX | SALARY | SUPERVISOR_SSN | DEPARTMENT_NUMBER |
|---|---|---|---|---|---|---|---|---|---|
| George | R | Martin | 981380392 | 10-DEC-62 | Baltimore | M | 56000 | 123456789 | 7 |
| Robert | D | Junior | 123456789 | 04-APR-65 | West Burbank CA 91506, USA | M | 90000 | 123 | 5 |
| Mark | A | Ruffalo | 543216789 | 22-NOV-67 | Beverly Hills, USA | M | 89000 | 453453453 | 2 |
| Doug | E | Gilbert | 123 | 09-JUN-68 | Chennai | M | 80000 | - | 1 |
| Frankin | T | Wong | 125 | 08-DEC-72 | Delhi | M | 40000 | 123 | 2 |
| Joyce | - | PAN | 124 | 07-FEB-73 | Vellore | F | 70000 | - | - |
| Tom | - | Hiddleston | 554433221 | 09-FEB-81 | Beverly Hills, USA | M | 88000 | - | 2 |
| Chris | - | Evans | 666884444 | 13-JUN-81 | Beverly Hills, CA 90212, USA | M | 91000 | 123456789 | 5 |
| Kit | R | Harrington | 981380393 | 10-NOV-82 | Barcelona | M | 73000 | 981380392 | 7 |
| Jennifer | S | Wallace | 564 | 20-JUN-83 | Chennai | F | 43000 | 123 | 2 |

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.03 seconds CSV Export