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SUBMITTED TO:

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SUBJECT: DBMS LAB

SUBJECT CODE: CS212L

TOTAL PAGES SUBMITTED: 9

ASSIGNMENT – 6

ON: SINGLE ROW FUNCTIONS IN SQL

Q1. Write a query to display the current date. Label the column Date.

Ans1.

```
SELECT SYSDATE "Date"
FROM DUAL;
```

Verification table -

Q2. For each employee, display the employee number, last name, salary, and salary increased by 15% and expressed as a whole number. Label the column New Salary. Place your SQL statement in a text file named lab6_2.sql.

Ans2.

```
SELECT EMPLOYEE_ID, LAST_NAME, SALARY,
    ROUND (SALARY*1.15, 0) "New Salary"
FROM EMPLOYEES;
```

Q3. Run your query in the file lab lab6_2.sql.

Ans3.

```
SELECT EMPLOYEE_ID, LAST_NAME, SALARY,
    ROUND (SALARY*1.15, 0) "New Salary"
```

FROM EMPLOYEES;

Verification table -

EMPLOYEE_ID	LAST_NAME	SALARY	New Salary
100	King	2400	2760
101	Kochhar	17000	19550
102	De Haan	17000	19550
103	Hundold	9000	10350
104	Emst	4200	4830
107	Lorenlz	5800	6670
124	Mourgos	3500	4025
141	Rajs	3100	3565
142	Davies	2600	2990
143	Matos	2600	2990
144	Vargas	2500	2875
149	Zlotkey	10500	12075
174	Abel	1100	1265
176	Taylor	8600	9890
EMPLOYEE_ID	LAST_NAME	SALARY	New Salary
178	Grant	7000	8050
200	Whalen	4400	5060
201	Hartstein	13000	14950
202	Fay	6000	6900
205	Higgins	12000	13800
206	Gietz	8300	9545
999	Taylor	5000	5750

21 rows selected.

Q4. Modify your query lab6_2.sql to add a column that subtracts the old salary from the new salary. Label the column Increase. Save the contents of the file as lab6_4.sql. Run the revised query.

Ans4.

```
SELECT EMPLOYEE_ID, LAST_NAME, SALARY,
    ROUND (SALARY*1.15, 0) "New Salary",
    ROUND (SALARY*1.15, 0)-SALARY "Increase"
FROM EMPLOYEES;
```

Verification table -

EMPLOYEE_ID	LAST_NAME	SALARY	New Salary	Increase
100	King	2400	2760	360
101	Kochhar	17000	19550	2550
102	De Haan	17000	19550	2550
103	Hundold	9000	10350	1350
104	Emst	4200	4830	630
107	Lorenlz	5800	6670	870
124	Mourgos	3500	4025	525
141	Rajs	3100	3565	465
142	Davies	2600	2990	390
143	Matos	2600	2990	390
144	Vargas	2500	2875	375
149	Zlotkey	10500	12075	1575
174	Abel	1100	1265	165
176	Taylor	8600	9890	1290
EMPLOYEE_ID	LAST_NAME	SALARY	New Salary	Increase
178	Grant	7000	8050	1050
200	Whalen	4400	5060	660
201	Hartstein	13000	14950	1950
202	Fay	6000	6900	900
205	Higgins	12000	13800	1800
206	Gietz	8300	9545	1245
999	Taylor	5000	5750	750

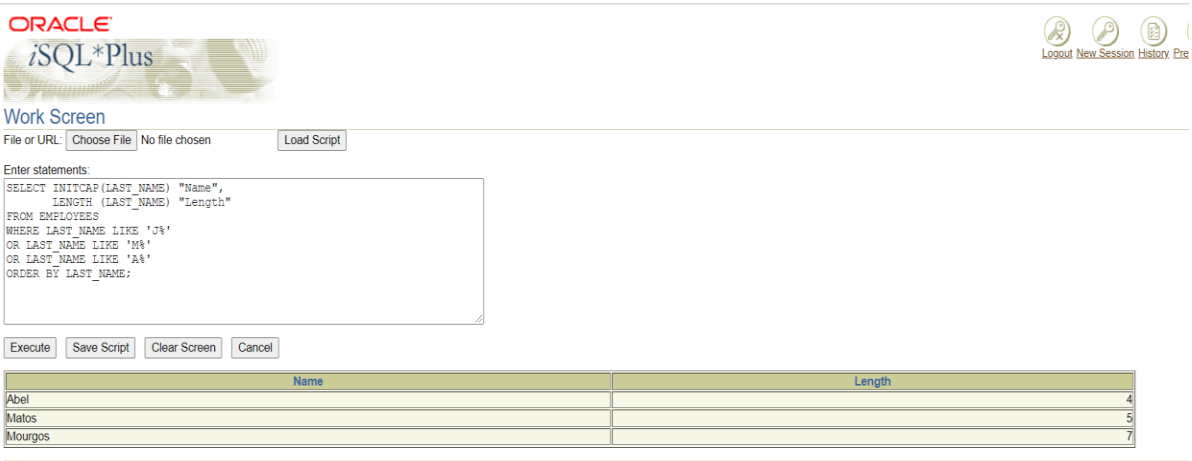
21 rows selected.

Q5. Write a query that displays the employee's last names with the first letter capitalized and all other letters lowercase and the length of the name for all employees whose name starts with J, A, or M. Give each column an appropriate label. Sort the results by the employees' last names.

Ans5.

```
SELECT INITCAP (LAST_NAME) "Name",
    LENGTH (LAST_NAME) "Length"
FROM EMPLOYEES
WHERE LAST_NAME LIKE 'J%'
OR LAST_NAME LIKE 'M%'
OR LAST_NAME LIKE 'A%'
ORDER BY LAST_NAME;
```

<u>Verification table</u> -



Q6. For each employee, display the employee's last name, and calculate the number of month between today and the date the employee was hired. Label the column MONTHS_WORKED. Order your results by the number of months employed. Round the number of months up to the closest whole number.

Note: Your results will differ.

Ans6.

```
SELECT LAST_NAME, ROUND (MONTHS_BETWEEN (SYSDATE, HIRE_DATE)) MONTHS_WORKED
```

FROM EMPLOYEES

ORDER BY MONTHS_BETWEEN (SYSDATE, HIRE_DATE);

Verification table -

LAST_NAME	MONTHS_WORKED
Zlotkey	260
Mourgos	262
Taylor	268
Grant	268
Lorentz	272
Vargas	279
Taylor	282
Matos	282
Fay	289
Davies	296
Abel	305
Hartstein	307
Rajs	311
Higgins	328
LAST_NAME	MONTHS_WORKED
Gietz	328
De Haan	344
Ernst	364
Hundold	381
Kochhar	384
Whalen	408
King	411

21 rows selected.

Q7. Write a query that produces the following for each employee: <employee last name> earns <salary> monthly but wants <3 times salary>. Label the column Dream Salaries.

Ans7.

```
SELECT LAST_NAME || ' earns '
    || TO_CHAR (SALARY, 'fm$99,999.00')
    || ' monthly but wants '
    || TO_CHAR (SALARY * 3, 'fm$99,999.00')
    || '.' "Dream Salaries"
FROM EMPLOYEES;
```

Verification table -

Dream Salaries
King earns $2,400.00 monthly but wants $7,200.00.
Kochhar earns $17,000.00 monthly but wants $51,000.00.
De Haan earns $17,000.00 monthly but wants $51,000.00.
Hundold earns $9,000.00 monthly but wants $27,000.00.
Emst earns $4,200.00 monthly but wants $12,600.00.
Lorenlz earns $5,800.00 monthly but wants $17,400.00.
Mourgos earns $3,500.00 monthly but wants $10,500.00.
Rajs earns $3,100.00 monthly but wants $9,300.00.
Davies earns $2,600.00 monthly but wants $7,800.00.
Matos earns $2,600.00 monthly but wants $7,800.00.
Vargas earns $2,500.00 monthly but wants $7,500.00.
Zlotkey earns $10,500.00 monthly but wants $31,500.00.
Abel earns $1,100.00 monthly but wants $3,300.00.
Taylor earns $8,600.00 monthly but wants $25,800.00.
Dream Salaries
Grant earns $7,000.00 monthly but wants $21,000.00.
Whalen earns $4,400.00 monthly but wants $13,200.00.
Hartstein earns $13,000.00 monthly but wants $39,000.00.
Fay earns $6,000.00 monthly but wants $18,000.00.
Higgins earns $12,000.00 monthly but wants $36,000.00.
Gietz earns $8,300.00 monthly but wants $24,900.00.
Taylor earns $5,000.00 monthly but wants $15,000.00.

21 rows selected.

Q8. Create a query to display the last name and salary for all employees. Format the salary to be 15 characters long, left-padded with $. Label the column SALARY.

Ans8.

```
SELECT LAST_NAME,
    LPAD (SALARY, 15, '$') SALARY
FROM EMPLOYEES;
```

<u>Verification table</u> -

LAST_NAME	SALARY
King	$$$$$$$$$$2400
Kochhar	$$$$$$$$$17000
De Haan	$$$$$$$$$17000
Hundold	$$$$$$$$$$9000
Emst	$$$$$$$$$$4200
Lorenlz	$$$$$$$$$$5800
Mourgos	$$$$$$$$$$3500
Rajs	$$$$$$$$$$3100
Davies	$$$$$$$$$$2600
Matos	$$$$$$$$$$2600
Vargas	$$$$$$$$$$2500
Zlotkey	$$$$$$$$$10500
Abel	$$$$$$$$$$1100
Taylor	$$$$$$$$$$8600
LAST_NAME	SALARY
Grant	$$$$$$$$$$7000
Whalen	$$$$$$$$$$4400
Hartstein	$$$$$$$$$13000
Fay	$$$$$$$$$$6000
Higgins	$$$$$$$$$12000
Gietz	$$$$$$$$$$8300
Taylor	$$$$$$$$$$5000

21 rows selected.

Q9. Display each employee's last name, hire date, and salary review date, which is the first Monday after six months of service. Label the column REVIEW. Format the dates to appear in the format similar to "Monday, the Thirty-First of July, 2000."

Ans9.

```
SELECT LAST_NAME, HIRE_DATE,
```

```
    TO_CHAR (NEXT_DAY (ADD_MONTHS (HIRE_DATE, 6),'MONDAY'),
    ' fmDay, "the" Ddspth "of" Month, YYYY"." ') REVIEW
FROM EMPLOYEES;
```

Verification table -

LAST_NAME	HIRE_DATE	REVIEW
King	17-JUN-87	Monday, the Twenty-First of December, 1987.
Kochhar	21-SEP-89	Monday, the Twenty-Sixth of March, 1990.
De Haan	13-JAN-93	Monday, the Nineteenth of July, 1993.
Hundold	03-JAN-90	Monday, the Ninth of July, 1990.
Emst	21-MAY-91	Monday, the Twenty-Fifth of November, 1991.
Lorenlz	07-FEB-99	Monday, the Ninth of August, 1999.
Mourgos	16-NOV-99	Monday, the Twenty-Second of May, 2000.
Rajs	17-OCT-95	Monday, the Twenty-Second of April, 1996.
Davies	29-JAN-97	Monday, the Fourth of August, 1997.
Matos	15-MAR-98	Monday, the Twenty-First of September, 1998.
Vargas	09-JUL-98	Monday, the Eleventh of January, 1999.
Zlotkey	29-JAN-00	Monday, the Thirty-First of July, 2000.
Abel	11-MAY-96	Monday, the Eighteenth of November, 1996.
Taylor	24-MAR-98	Monday, the Twenty-Eighth of September, 1998.
LAST_NAME	**HIRE_DATE**	**REVIEW**
Grant	24-MAY-99	Monday, the Twenty-Ninth of November, 1999.
Whalen	14-SEP-87	Monday, the Twenty-First of March, 1988.
Hartstein	17-FEB-96	Monday, the Nineteenth of August, 1996.
Fay	17-AUG-97	Monday, the Twenty-Third of February, 1998.
Higgins	07-JUN-94	Monday, the Twelfth of December, 1994.
Gietz	07-JUN-94	Monday, the Twelfth of December, 1994.
Taylor	07-JUN-99	Monday, the Thirteenth of December, 1999.

21 rows selected.

Q10. Display the last name, hire date, and day of the week on which the employee started. Label the column DAY. Order the results by the day of the week starting with Monday.

Ans10.

```
SELECT LAST_NAME, HIRE_DATE,
    TO_CHAR (HIRE_DATE, 'DAY') DAY
FROM EMPLOYEES
ORDER BY TO_CHAR (HIRE_DATE - 1, 'd');
```

Verification table -

LAST_NAME	HIRE_DATE	DAY
Grant	24-MAY-99	MONDAY
Whalen	14-SEP-87	MONDAY
Taylor	07-JUN-99	MONDAY
Emst	21-MAY-91	TUESDAY
Mourgos	16-NOV-99	TUESDAY
Taylor	24-MAR-98	TUESDAY
Gietz	07-JUN-94	TUESDAY
Higgins	07-JUN-94	TUESDAY
Rajs	17-OCT-95	TUESDAY
King	17-JUN-87	WEDNESDAY
De Haan	13-JAN-93	WEDNESDAY
Davies	29-JAN-97	WEDNESDAY
Hundold	03-JAN-90	WEDNESDAY
Kochhar	21-SEP-89	THURSDAY
LAST_NAME	**HIRE_DATE**	**DAY**
Vargas	09-JUL-98	THURSDAY
Zlotkey	29-JAN-00	SATURDAY
Hartstein	17-FEB-96	SATURDAY
Abel	11-MAY-96	SATURDAY
Lorenlz	07-FEB-99	SUNDAY
Fay	17-AUG-97	SUNDAY
Matos	15-MAR-98	SUNDAY

21 rows selected.

Q11. Create a query that displays the employees' last names and commission amounts. If an employee does not earn commission, put "No Commission". Label the column COMM.

Ans11.

```
SELECT LAST_NAME,
    NVL (TO_CHAR (COMMISSION_PCT), 'No Commission') COMM
FROM EMPLOYEES;
```

Verification table -

LAST_NAME	COMM
King	No Commission
Kochhar	No Commission
De Haan	No Commission
Hundold	No Commission
Emst	No Commission
Lorenlz	No Commission
Mourgos	No Commission
Rajs	No Commission
Davies	No Commission
Matos	No Commission
Vargas	No Commission
Zlotkey	2
Abel	3
Taylor	2
LAST_NAME	COMM
Grant	15
Whalen	No Commission
Hartstein	No Commission
Fay	No Commission
Higgins	No Commission
Gietz	No Commission
Taylor	No Commission

21 rows selected.

Q12. Create a query that displays the employees' last names and indicates the amounts of their annual salaries with asterisks. Each asterisk signifies a thousand dollars. Sort the data in descending order of salary. Label the column EMPLOYEES_AND THEIR_SALAIES.

Ans12.

```
SELECT RPAD (LAST_NAME, 8) || ' ' || RPAD (' ', SALARY/1000+1, '*')
    EMPLOYEES_AND_THEIR_SALARIES
FROM EMPLOYEES
ORDER BY SALARY DESC;
```

Verification table -

EMPLOYEES_AND_THEIR_SALARIES
Kochhar *****************
De Haan *****************
Hartstei **********
Higgins **********
Zlotkey **********
Hundold *********
Taylor ********
Gietz ********
Grant *******
Fay ******
Lorenlz *****
Taylor *****
Whalen ****
Emst ****
EMPLOYEES_AND_THEIR_SALARIES
Mourgos ***
Rajs ***
Davies **
Matos **
Vargas **
King **
Abel *

21 rows selected.

Q13. Using the DECODE function, write a query that displays the grade of all employees based on the value of the column JOB_ID, as per the following data:

JOB	GRADE
AD_PRES	**A**
ST_MAN	**B**
IT_PROG	**C**
SA_REP	**D**
ST_CLERK	**E**
None of the above	**0**

Ans13.

```
SELECT JOB_ID, DECODE (JOB_ID,
                'ST_CLERK', 'E',
                'SA_REP', 'D',
                'IT_PROG', 'C',
                'ST_MAN', 'B',
                'AD_PRES', 'A',
                        '0') GRADE
FROM EMPLOYEES;
```

Verification table -

JOB_ID	G
AD_PRES	A
AD_VP	0
AD_VP	0
IT_PROG	C
IT_PROG	C
IT_PROG	C
ST_MAN	B
ST_CLERK	E
ST_CLERK	E
ST_CLERK	E
ST_CLERK	E
SA_MAN	0
SA_REP	D
SA_REP	D
JOB_ID	G
SA_REP	D
AD_ASST	0
MK_MAN	0
MK_REP	0
AC_MGR	0
AC_ACCOUNT	0
ST_CLERK	E

21 rows selected.

Q14. Rewrite the statement in the preceding question using the CASE syntax.

Ans14.

```
SELECT JOB_ID, CASE JOB_ID
    WHEN 'ST_CLERK' THEN 'E'
    WHEN 'SA_REP' THEN 'D'
    WHEN 'IT_PROG' THEN 'C'
    WHEN 'ST_MAN' THEN 'B'
    WHEN 'AD_PRES' THEN 'A'
    ELSE '0' END GRADE
FROM EMPLOYEES;
```

Verification table -

JOB_ID	G
AD_PRES	A
AD_VP	0
AD_VP	0
IT_PROG	C
IT_PROG	C
IT_PROG	C
ST_MAN	B
ST_CLERK	E
ST_CLERK	E
ST_CLERK	E
ST_CLERK	E
SA_MAN	0
SA_REP	D
SA_REP	D
JOB_ID	G
SA_REP	D
AD_ASST	0
MK_MAN	0
MK_REP	0
AC_MGR	0
AC_ACCOUNT	0
ST_CLERK	E

21 rows selected.