**CENG316 – Database Systems Assignment 2**

**191180005 – Selin Cansu Akbaş**

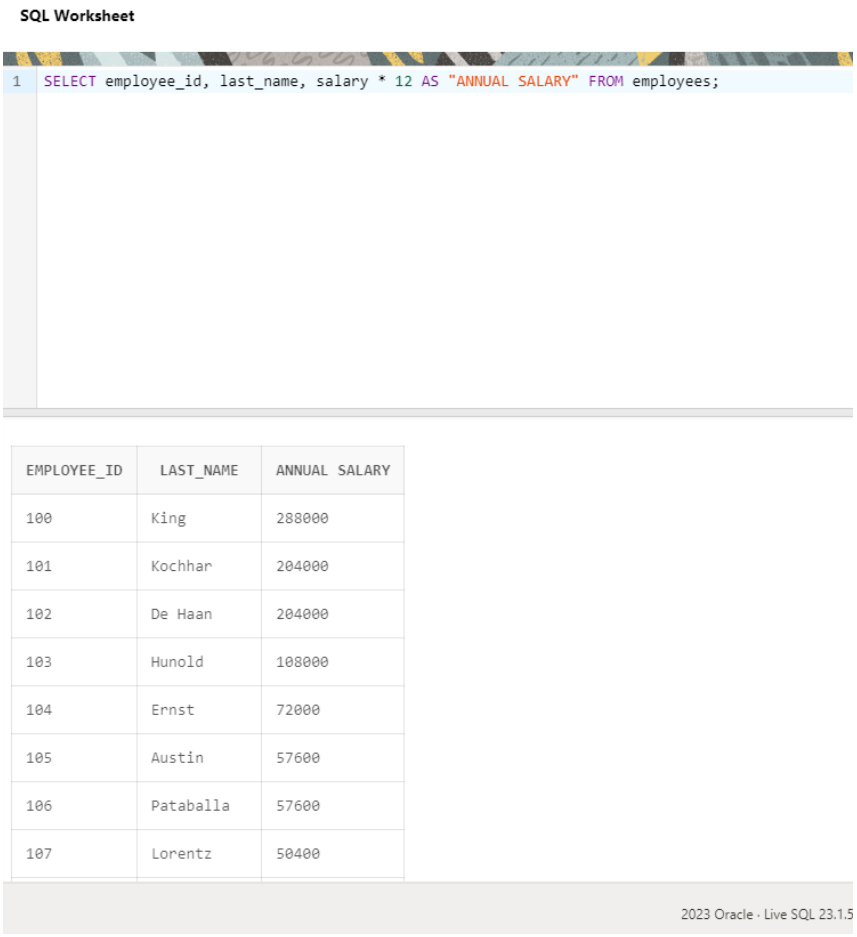
## Part 1

**1)** These are the four coding errors in the following statement:

- There is a missing comma between "last_name" and "sal".
- "sal" is not a valid column name, it should be “salary”.
- There is no operator like "x" to multiply the "sal" column value by 12. We should use the multiplication operator "*" instead.
- The column alias "ANNUAL SALARY" should be enclosed in quotes because it contains a space.

**The corrected statement:**

SELECT employee_id, last_name, salary * 12 AS "ANNUAL SALARY" FROM employees;



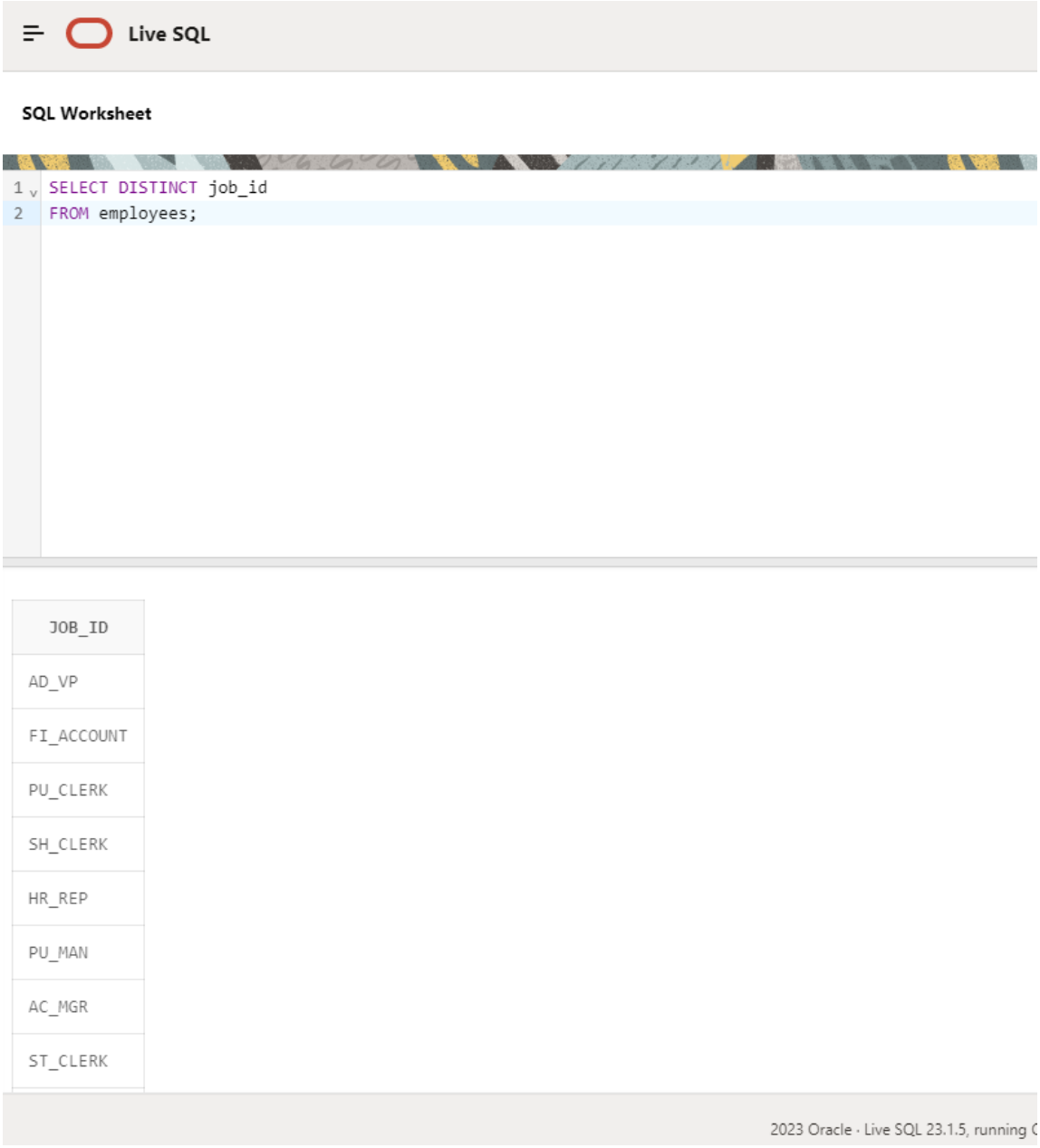
**2)** SELECT employee_id AS "EMPLOYEE ID", last_name, job_id, hire_date AS STARTDATE FROM employees;

**SQL Worksheet**

```
1  SELECT employee_id AS "EMPLOYEE ID", last_name, job_id, hire_date AS STARTDATE FROM employees;
```

| EMPLOYEE ID | LAST_NAME | JOB_ID | STARTDATE |
|---|---|---|---|
| 100 | King | AD_PRES | 17-JUN-03 |
| 101 | Kochhar | AD_VP | 21-SEP-05 |
| 102 | De Haan | AD_VP | 13-JAN-01 |
| 103 | Hunold | IT_PROG | 03-JAN-06 |
| 104 | Ernst | IT_PROG | 21-MAY-07 |
| 105 | Austin | IT_PROG | 25-JUN-05 |
| 106 | Pataballa | IT_PROG | 05-FEB-06 |
| 107 | Lorentz | IT_PROG | 07-FEB-07 |

**3)** SELECT DISTINCT job_id
FROM employees;



## Part 2

**4)** SELECT last_name || ', ' || job_id AS "Employee and Title"
FROM employees;

**SQL Worksheet**

```
1  SELECT last_name || ', ' || job_id AS "Employee and Title"
2  FROM employees;
```

| Employee and Title |
|---|
| King, AD_PRES |
| Kochhar, AD_VP |
| De Haan, AD_VP |
| Hunold, IT_PROG |
| Ernst, IT_PROG |
| Austin, IT_PROG |
| Pataballa, IT_PROG |
| Lorentz, IT_PROG |

**5)** SELECT last_name, salary FROM employees
WHERE salary NOT BETWEEN 5000 AND 12000;

**SQL Worksheet**

```
1  SELECT last_name, salary FROM employees
2  WHERE salary NOT BETWEEN 5000 AND 12000;
```

| LAST_NAME | SALARY |
|---|---|
| King | 24000 |
| Kochhar | 17000 |
| De Haan | 17000 |
| Austin | 4800 |
| Pataballa | 4800 |
| Lorentz | 4200 |
| Greenberg | 12008 |
| Khoo | 3100 |

**6)** SELECT last_name AS Employee, salary AS "Monthly Salary" FROM employees WHERE department_id IN (20, 50) AND salary BETWEEN 5000 AND 12000;

**SQL Worksheet**

```
1  SELECT last_name AS Employee, salary AS "Monthly Salary" FROM employees
2  WHERE department_id IN (20, 50) AND salary BETWEEN 5000 AND 12000;
```

| EMPLOYEE | Monthly Salary |
|---|---|
| Weiss | 8000 |
| Fripp | 8200 |
| Kaufling | 7900 |
| Vollman | 6500 |
| Mourgos | 5800 |
| Fay | 6000 |

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6 rows selected.

**7)** SELECT last_name, hire_date FROM employees
WHERE hire_date BETWEEN '01-JAN-2002' AND '31-DEC-2002';

**SQL Worksheet**

```
1  SELECT last_name, hire_date FROM employees
2  WHERE hire_date BETWEEN '01-JAN-2002' AND '31-DEC-2002';
```

| LAST_NAME | HIRE_DATE |
|---|---|
| Greenberg | 17-AUG-02 |
| Faviet | 16-AUG-02 |
| Raphaely | 07-DEC-02 |
| Mavris | 07-JUN-02 |
| Baer | 07-JUN-02 |
| Higgins | 07-JUN-02 |
| Gietz | 07-JUN-02 |

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## Part 3

**8)** SELECT last_name, department_id FROM employees
WHERE department_id IN (20, 50)
ORDER BY last_name ASC;

**SQL Worksheet**

```
1  SELECT last_name, department_id FROM employees
2  WHERE department_id IN (20, 50)
3  ORDER BY last_name ASC;
```

| LAST_NAME | DEPARTMENT_ID |
|---|---|
| Atkinson | 50 |
| Bell | 50 |
| Bissot | 50 |
| Bull | 50 |
| Cabrio | 50 |
| Chung | 50 |
| Davies | 50 |
| Dellinger | 50 |

**9)** SELECT last_name, salary, commission_pct FROM employees
WHERE commission_pct IS NOT NULL
ORDER BY 2 DESC, 3 DESC;

**SQL Worksheet**

```
1 SELECT last_name, salary, commission_pct FROM employees
2 WHERE commission_pct IS NOT NULL
3 ORDER BY 2 DESC, 3 DESC;
```

| LAST_NAME | SALARY | COMMISSION_PCT |
|---|---|---|
| Russell | 14000 | .4 |
| Partners | 13500 | .3 |
| Errazuriz | 12000 | .3 |
| Ozer | 11500 | .25 |
| Cambrault | 11000 | .3 |
| Abel | 11000 | .3 |
| Vishney | 10500 | .25 |
| Zlotkey | 10500 | .2 |

**10)** SELECT last_name FROM employees
WHERE last_name LIKE '%a%' AND last_name LIKE '%e%';

**SQL Worksheet**

```
1  SELECT last_name FROM employees
2  WHERE last_name LIKE '%a%' AND last_name LIKE '%e%';
```

| LAST_NAME |
| --- |
| De Haan |
| Faviet |
| Raphaely |
| Colmenares |
| Nayer |
| Markle |
| Philtanker |
| Patel |

**11)** SELECT last_name, job_id, salary FROM employees
WHERE job_id IN ('SA_REP', 'ST_CLERK') AND salary NOT IN (2500, 3500, 7000);

**SQL Worksheet**

```
1 SELECT last_name, job_id, salary FROM employees
2 WHERE job_id IN ('SA_REP', 'ST_CLERK') AND salary NOT IN (2500, 3500, 7000);
```

| LAST_NAME | JOB_ID | SALARY |
|---|---|---|
| Nayer | ST_CLERK | 3200 |
| Mikkilineni | ST_CLERK | 2700 |
| Landry | ST_CLERK | 2400 |
| Markle | ST_CLERK | 2200 |
| Bissot | ST_CLERK | 3300 |
| Atkinson | ST_CLERK | 2800 |
| Olson | ST_CLERK | 2100 |
| Mallin | ST_CLERK | 3300 |

**12)** SELECT employee_id, last_name, salary, ROUND(salary * 1.155) AS "New Salary" FROM employees;

**SQL Worksheet**

```
1  SELECT employee_id, last_name, salary, ROUND(salary * 1.155) AS "New Salary" FROM employees;
```

| EMPLOYEE_ID | LAST_NAME | SALARY | New Salary |
|---|---|---|---|
| 100 | King | 24000 | 27720 |
| 101 | Kochhar | 17000 | 19635 |
| 102 | De Haan | 17000 | 19635 |
| 103 | Hunold | 9000 | 10395 |
| 104 | Ernst | 6000 | 6930 |
| 105 | Austin | 4800 | 5544 |
| 106 | Pataballa | 4800 | 5544 |
| 107 | Lorentz | 4200 | 4851 |

**13)** SELECT employee_id, last_name, salary, ROUND(salary * 1.155) AS "New Salary", ROUND(salary * 0.155) AS "Increase" FROM employees;

**SQL Worksheet**

```
1  SELECT employee_id, last_name, salary, ROUND(salary * 1.155) AS "New Salary", ROUND(salary * 0.155) AS "Increase" FROM employees;
```

| EMPLOYEE_ID | LAST_NAME | SALARY | New Salary | Increase |
|---|---|---|---|---|
| 100 | King | 24000 | 27720 | 3720 |
| 101 | Kochhar | 17000 | 19635 | 2635 |
| 102 | De Haan | 17000 | 19635 | 2635 |
| 103 | Hunold | 9000 | 10395 | 1395 |
| 104 | Ernst | 6000 | 6930 | 930 |
| 105 | Austin | 4800 | 5544 | 744 |
| 106 | Pataballa | 4800 | 5544 | 744 |
| 107 | Lorentz | 4200 | 4851 | 651 |