Lab Task 4

Name –   **Muhammad Taha**

Roll NO – **23P-0559**

SECTION – **BCS(4A)**

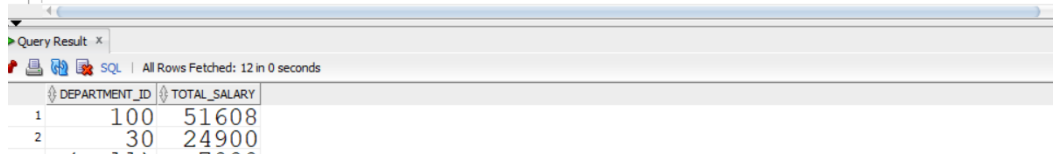Subject - **DATABASE Lab**

(1)

SELECT DEPARTMENT_ID, SUM(SALARY) AS TOTAL_SALARY FROM EMPLOYEES
GROUP BY DEPARTMENT_ID;

```
--23P-0559 BCS(4A)

SELECT DEPARTMENT_ID, SUM(SALARY) AS TOTAL_SALARY FROM EMPLOYEES
GROUP BY DEPARTMENT_ID;
```

Query Result ×

SQL | All Rows Fetched: 12 in 0 seconds
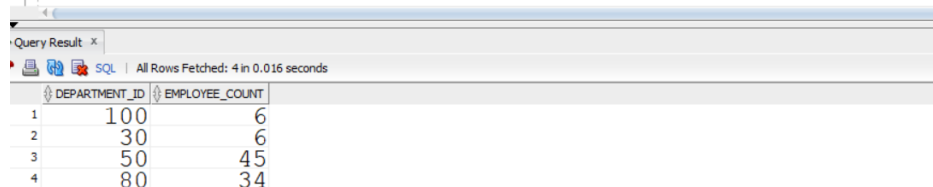
	DEPARTMENT_ID	TOTAL_SALARY
1	100	51608
2	30	24900

(2)

SELECT DEPARTMENT_ID, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEES
GROUP BY DEPARTMENT_ID HAVING COUNT(*) > 5;

```
--23P-0559 BCS(4A)

SELECT DEPARTMENT_ID, COUNT(*) AS EMPLOYEE_COUNT
FROM EMPLOYEES GROUP BY DEPARTMENT_ID HAVING COUNT(*) > 5;
```

Query Result ×

SQL | All Rows Fetched: 4 in 0.016 seconds
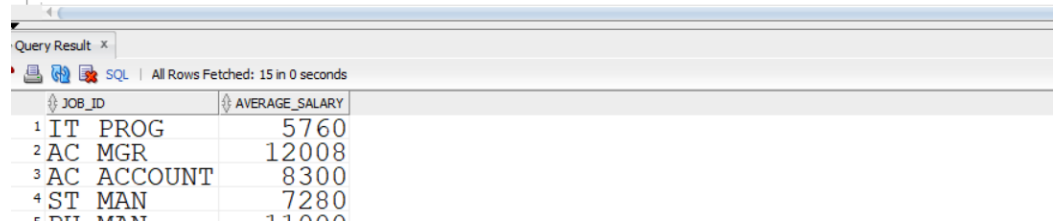
	DEPARTMENT_ID	EMPLOYEE_COUNT
1	100	6
2	30	6
3	50	45
4	80	34

(3)

SELECT JOB_ID, AVG(SALARY) AS AVERAGE_SALARY FROM EMPLOYEES

GROUP BY JOB_ID HAVING AVG(SALARY) > 5000;

```
--23P-0559 BCS(4A)

SELECT JOB_ID, AVG(SALARY) AS AVERAGE_SALARY FROM EMPLOYEES
GROUP BY JOB_ID HAVING AVG(SALARY) > 5000;
```

Query Result ×

SQL | All Rows Fetched: 15 in 0 seconds

	JOB_ID	AVERAGE_SALARY
1	IT_PROG	5760
2	AC_MGR	12008
3	AC_ACCOUNT	8300
4	ST_MAN	7280

(4)

SELECT DEPARTMENT_ID, SUM(SALARY) AS TOTAL_SALARY_EXPENDITURE FROM EMPLOYEES GROUP BY DEPARTMENT_ID HAVING SUM(SALARY) > 100000;

```
--23P-0559 BCS(4A)

SELECT DEPARTMENT_ID, SUM(SALARY) AS TOTAL_SALARY_EXPENDITURE FROM EMPLOYEES
GROUP BY DEPARTMENT_ID HAVING SUM(SALARY) > 100000;
```

Query Result ×
SQL | All Rows Fetched: 2 in 0 seconds

	DEPARTMENT_ID	TOTAL_SALARY_EXPENDITURE
1	50	156400
2	80	304500

(5)

SELECT * FROM EMPLOYEES WHERE SALARY = (SELECT MAX(SALARY) FROM EMPLOYEES);

```
--23P-0559 BCS(4A)

SELECT * FROM EMPLOYEES WHERE SALARY = (SELECT MAX(SALARY) FROM EMPLOYEES);
```

Query Result ×
SQL | All Rows Fetched: 1 in 0 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD PRES	24000	(null)	(null)	90

(6)

SELECT * FROM EMPLOYEES WHERE SALARY > (SELECT AVG(SALARY) FROM EMPLOYEES);

```
--23P-0559 BCS(4A)

SELECT * FROM EMPLOYEES WHERE SALARY > (SELECT AVG(SALARY) FROM EMPLOYEES);
```

Query Result ×
SQL | Fetched 50 rows in 0.015 seconds
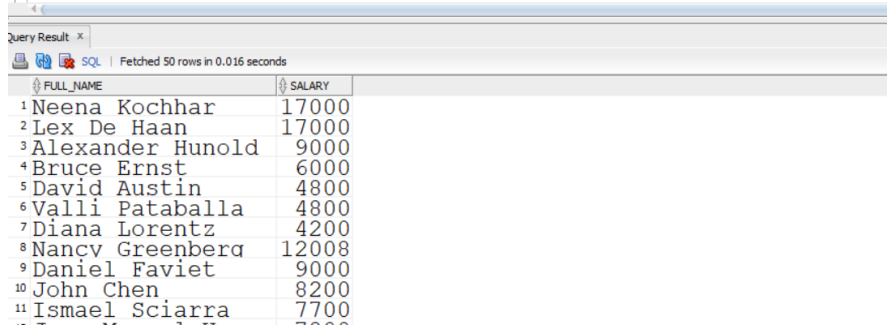
	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD PRES	24000
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-05	AD VP	17000
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-01	AD VP	17000
4	103	Alexander	Hunold	AHUNOLD	590.423.4567	03-JAN-06	IT PROG	9000
5	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-AUG-02	FI MGR	12008
6	109	Daniel	Faviet	DFAVIET	515.124.4169	16-AUG-02	FI ACCOUNT	9000
7	110	John	Chen	JCHEN	515.124.4269	28-SEP-05	FI ACCOUNT	8200
8	111	Ismael	Sciarra	ISCIARRA	515.124.4369	30-SEP-05	FI ACCOUNT	7700
9	112	Jose Manuel	Urman	JMURMAN	515.124.4469	07-MAR-06	FI ACCOUNT	7800

(7)

SELECT FIRST_NAME || ' ' || LAST_NAME AS FULL_NAME, SALARY

FROM EMPLOYEES WHERE SALARY < (SELECT SALARY FROM EMPLOYEES

WHERE EMPLOYEE_ID = 100);

```
--23P-0559 BCS(4A)

SELECT FIRST_NAME || ' ' || LAST_NAME AS FULL_NAME, SALARY
FROM EMPLOYEES WHERE SALARY < (SELECT SALARY FROM EMPLOYEES
WHERE EMPLOYEE_ID = 100);
```

Query Result ×

SQL | Fetched 50 rows in 0.016 seconds

FULL_NAME	SALARY
1 Neena Kochhar	17000
2 Lex De Haan	17000
3 Alexander Hunold	9000
4 Bruce Ernst	6000
5 David Austin	4800
6 Valli Pataballa	4800
7 Diana Lorentz	4200
8 Nancy Greenberg	12008
9 Daniel Faviet	9000
10 John Chen	8200
11 Ismael Sciarra	7700

(8)

select first_name,last_name,job_id from employees where job_id = (select job_id from employees where employee_id = 200);

```
--23P-0559 BCS(4A)

select first_name,last_name,job_id from employees where job_id =
(select job_id from employees where employee_id = 200);
```

Query Result ×

SQL | All Rows Fetched: 1 in 0.138 seconds

FIRST_NAME	LAST_NAME	JOB_ID
1 Jennifer	Whalen	AD ASST

(9)

SELECT * FROM EMPLOYEES WHERE DEPARTMENT_ID = (SELECT DEPARTMENT_ID FROM EMPLOYEES WHERE SALARY = (select max(salary) from employees));

Worksheet   Query Builder
```
--23P-0559 BCS(4A)


SELECT * FROM EMPLOYEES WHERE DEPARTMENT_ID = (SELECT DEPARTMENT_ID FROM EMPLOYEES WHERE SALARY =
(select max(salary) from employees));
```

Query Result ×

SQL | All Rows Fetched: 3 in 0.086 seconds

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100 Steven	King	SKING	515.123.4567	17-JUN-03	AD PRES	24000	(null)	(null)	90
2	101 Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-05	AD VP	17000	(null)	100	90
3	102 Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-01	AD VP	17000	(null)	100	90

(10)

SELECT * FROM EMPLOYEES WHERE SALARY > ANY (SELECT SALARY FROM EMPLOYEES WHERE DEPARTMENT_ID = 50);

```
--23P-0559 BCS(4A)

SELECT * FROM EMPLOYEES WHERE SALARY > ANY (SELECT SALARY FROM EMPLOYEES WHERE DEPARTMENT_ID = 50);
```
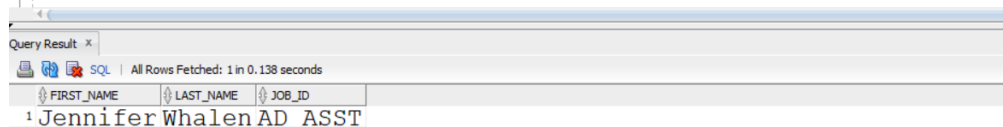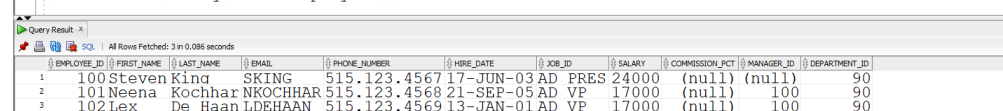
Query Result ×
SQL | Fetched 50 rows in 0.028 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD PRES	24000	(null)	(null)	90
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-05	AD VP	17000	(null)	100	90
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-01	AD VP	17000	(null)	100	90
4	145	John	Russell	JRUSSEL	011.44.1344.429268	01-OCT-04	SA MAN	14000	0.4	100	80
5	146	Karen	Partners	KPARTNER	011.44.1344.467268	05-JAN-05	SA MAN	13500	0.3	100	80
6	201	Michael	Hartstein	MHARTSTE	515.123.5555	17-FEB-04	MK MAN	13000	(null)	100	20
7	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-AUG-02	FI MGR	12008	(null)	101	100
8	205	Shelley	Higgins	SHIGGINS	515.123.8080	07-JUN-02	AC MGR	12008	(null)	101	110

(11)

select * from employees where salary < All(select salary from employees where department_id = 90);

```
Worksheet | Query Builder
--23P-0559 BCS(4A)


select * from employees where salary < All(select salary from employees where department_id = 90);
```

Query Result ×
SQL | Fetched 50 rows in 0.022 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	145	John	Russell	JRUSSEL	011.44.1344.429268	01-OCT-04	SA MAN	14000	0.4	100	80
2	146	Karen	Partners	KPARTNER	011.44.1344.467268	05-JAN-05	SA MAN	13500	0.3	100	80
3	201	Michael	Hartstein	MHARTSTE	515.123.5555	17-FEB-04	MK MAN	13000	(null)	100	20
4	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-AUG-02	FI MGR	12008	(null)	101	100
5	205	Shelley	Higgins	SHIGGINS	515.123.8080	07-JUN-02	AC MGR	12008	(null)	101	110
6	147	Alberto	Errazuriz	AERRAZUR	011.44.1344.429278	10-MAR-05	SA MAN	12000	0.3	100	80
7	168	Lisa	Ozer	LOZER	011.44.1343.929268	11-MAR-05	SA REP	11500	0.25	148	80
8	114	Den	Raphaely	DRAPHEAL	515.127.4561	07-DEC-02	PU MAN	11000	(null)	100	30
9	148	Gerald	Cambrault	GCAMBRAU	011.44.1344.619268	15-OCT-07	SA MAN	11000	0.3	100	80
10	174	Ellen	Abel	EABEL	011.44.1644.429267	11-MAY-04	SA REP	11000	0.3	149	80

(12)

select * from employees where JOB_ID in (select job_id from employees where DEPARTMENT_ID =(select DEPARTMENT_ID from DEPARTMENTS where DEPARTMENT_NAME = 'Sales'));

```
--23P-0559 BCS(4A)


select * from employees where JOB_ID in (select job_id from employees where DEPARTMENT_ID =
(select DEPARTMENT_ID from DEPARTMENTS where DEPARTMENT_NAME = 'Sales'));
```

Query Result ×
SQL | All Rows Fetched: 35 in 0.275 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	145	John	Russell	JRUSSEL	011.44.1344.429268	01-OCT-04	SA MAN	14000	0.4	100	80
2	146	Karen	Partners	KPARTNER	011.44.1344.467268	05-JAN-05	SA MAN	13500	0.3	100	80
3	147	Alberto	Errazuriz	AERRAZUR	011.44.1344.429278	10-MAR-05	SA MAN	12000	0.3	100	80
4	148	Gerald	Cambrault	GCAMBRAU	011.44.1344.619268	15-OCT-07	SA MAN	11000	0.3	100	80
5	149	Eleni	Zlotkey	EZLOTKEY	011.44.1344.429018	29-JAN-08	SA MAN	10500	0.2	100	80
6	150	Peter	Tucker	PTUCKER	011.44.1344.129268	30-JAN-05	SA REP	10000	0.3	145	80
7	151	David	Bernstein	DBERNSTE	011.44.1344.345268	24-MAR-05	SA REP	9500	0.25	145	80
8	152	Peter	Hall	PHALL	011.44.1344.478968	20-AUG-05	SA REP	9000	0.25	145	80
9	153	Christopher	Olsen	COLSEN	011.44.1344.498718	30-MAR-06	SA REP	8000	0.2	145	80
10	154	Nanette	Cambrault	NCAMBRAU	011.44.1344.987668	09-DEC-06	SA REP	7500	0.2	145	80

(13)

SELECT * FROM EMPLOYEES WHERE SALARY > (SELECT AVG(SALARY) FROM EMPLOYEES WHERE DEPARTMENT_ID = EMPLOYEES.DEPARTMENT_ID);

```
--23P-0559 BCS(4A)
SELECT * FROM EMPLOYEES WHERE SALARY > (SELECT AVG(SALARY) FROM EMPLOYEES
WHERE DEPARTMENT_ID = EMPLOYEES.DEPARTMENT_ID);
```

Query Result ×
SQL | Fetched 50 rows in 0.031 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD PRES	24000	(null)	(null)	90
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-05	AD VP	17000	(null)	100	90
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-01	AD VP	17000	(null)	100	90
4	103	Alexander	Hunold	AHUNOLD	590.423.4567	03-JAN-06	IT PROG	9000	(null)	102	60
5	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-AUG-02	FI MGR	12008	(null)	101	100
6	109	Daniel	Faviet	DFAVIET	515.124.4169	16-AUG-02	FI ACCOUNT	9000	(null)	108	100
7	110	John	Chen	JCHEN	515.124.4269	28-SEP-05	FI ACCOUNT	8200	(null)	108	100
8	111	Ismael	Sciarra	ISCIARRA	515.124.4369	30-SEP-05	FI ACCOUNT	7700	(null)	108	100
9	112	Jose Manuel	Urman	JMURMAN	515.124.4469	07-MAR-06	FI ACCOUNT	7800	(null)	108	100
10	113	Luis	Popp	LPOPP	515.124.4567	07-DEC-07	FI ACCOUNT	6900	(null)	108	100
11	114	Den	Raphaely	DRAPHEAL	515.127.4561	07-DEC-02	PU MAN	11000	(null)	100	30

(14)

SELECT DEPARTMENT_ID FROM EMPLOYEES GROUP BY

DEPARTMENT_ID HAVING SUM(SALARY) > (SELECT AVG(TOTAL_SALARY) FROM
(SELECT SUM(SALARY) AS TOTAL_SALARY

FROM EMPLOYEES GROUP BY DEPARTMENT_ID));

```
--23P-0559 BCS(4A)

SELECT DEPARTMENT_ID FROM EMPLOYEES GROUP BY
DEPARTMENT_ID HAVING SUM(SALARY) > (SELECT AVG(TOTAL_SALARY) FROM (SELECT SUM(SALARY)
FROM EMPLOYEES GROUP BY DEPARTMENT_ID));
```

Query Result ×
SQL | All Rows Fetched: 3 in 0.067 seconds

	DEPARTMENT_ID
1	90
2	50
3	80

(15)

SELECT * FROM EMPLOYEES WHERE (CURRENT_DATE - HIRE_DATE) / 365 >
(SELECT AVG((CURRENT_DATE - HIRE_DATE) / 365)FROM EMPLOYEES WHERE
DEPARTMENT_ID = EMPLOYEES.DEPARTMENT_ID);

```
--23P-0559 BCS(4A)

SELECT * FROM EMPLOYEES WHERE (CURRENT_DATE - HIRE_DATE) / 365 > (SELECT AVG((CURRENT_DATE - HIRE_DATE) / 365)
FROM EMPLOYEES WHERE DEPARTMENT_ID = EMPLOYEES.DEPARTMENT_ID);
```

ery Result ×
SQL | Fetched 50 rows in 0.012 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD PRES	24000	(null)	(null)	90
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-05	AD VP	17000	(null)	100	90
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-01	AD VP	17000	(null)	100	90
4	105	David	Austin	DAUSTIN	590.423.4569	25-JUN-05	IT PROG	4800	(null)	103	60
5	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-AUG-02	FI MGR	12008	(null)	101	100
6	109	Daniel	Faviet	DFAVIET	515.124.4169	16-AUG-02	FI ACCOUNT	9000	(null)	108	100
7	110	John	Chen	JCHEN	515.124.4269	28-SEP-05	FI ACCOUNT	8200	(null)	108	100
8	111	Ismael	Sciarra	ISCIARRA	515.124.4369	30-SEP-05	FI ACCOUNT	7700	(null)	108	100
9	114	Den	Raphaely	DRAPHEAL	515.127.4561	07-DEC-02	PU MAN	11000	(null)	100	30
10	115	Alexander	Khoo	AKHOO	515.127.4562	18-MAY-03	PU CLERK	3100	(null)	114	30
11	117	Sigal	Tobias	STOBIAS	515.127.4564	24-JUL-05	PU CLERK	2800	(null)	114	30
12	120	Matthew	Weiss	MWEISS	650.123.1234	18-JUL-04	ST MAN	8000	(null)	100	50

(16)

CREATE TABLE EMPLOYEE_BACKUP AS SELECT * FROM EMPLOYEES WHERE
1=0;INSERT INTO EMPLOYEE_BACKUP SELECT * FROM EMPLOYEES WHERE
DEPARTMENT_ID = 10;

```
--23P-0559 BCS(4A)

CREATE TABLE EMPLOYEE_BACKUP AS
SELECT * FROM EMPLOYEES WHERE 1=0;

INSERT INTO EMPLOYEE_BACKUP
SELECT * FROM EMPLOYEES WHERE DEPARTMENT_ID = 10;
```

Query Result × | Script Output ×
Task completed in 0.114 seconds

```
INSERT INTO EMPLOYEE_BACKUP
SELECT *
FROM EMPLOYEES
WHERE DEPARTMENT_ID = 10
Error at Command Line : 3 Column : 13
Error report -
SQL Error: ORA-00942: table or view does not exist
00942. 00000 -  "table or view does not exist"
Cause:
Action:


Table EMPLOYEE_BACKUP created.


. row inserted.
```

(17)

**UPDATE EMPLOYEES SET SALARY = SALARY * 1.05 WHERE DEPARTMENT_ID = 20
AND SALARY < (SELECT AVG(SALARY) FROM EMPLOYEES WHERE
DEPARTMENT_ID = 20);**

```
ksheet    Query Builder
--23P-0559 BCS(4A)


UPDATE EMPLOYEES SET SALARY = SALARY * 1.05 WHERE DEPARTMENT_ID = 20 AND
SALARY < (SELECT AVG(SALARY) FROM EMPLOYEES WHERE DEPARTMENT_ID = 20);
```

(18)

**DELETE FROM EMPLOYEE_BACKUP WHERE EMPLOYEE_ID NOT IN (SELECT
EMPLOYEE_ID FROM EMPLOYEES);**

```
--23P-0559 BCS(4A)

DELETE FROM EMPLOYEE_BACKUP WHERE EMPLOYEE_ID NOT IN (SELECT EMPLOYEE_ID FROM EMPLOYEES);
```

(19)

**CREATE TABLE EMPLOYEE_BONUS (EMPLOYEE_ID NUMBER PRIMARY KEY,
BONUS_AMOUNT NUMBER(10,2));**

INSERT INTO EMPLOYEE_BONUS (EMPLOYEE_ID, BONUS_AMOUNT)

**SELECT EMPLOYEE_ID, SALARY * 0.20 FROM EMPLOYEES WHERE SALARY >
(SELECT AVG(SALARY) FROM EMPLOYEES);**

```
--23P-0559 BCS(4A)

CREATE TABLE EMPLOYEE_BONUS (
    EMPLOYEE_ID NUMBER PRIMARY KEY,
    BONUS_AMOUNT NUMBER(10,2)
);


INSERT INTO EMPLOYEE_BONUS (EMPLOYEE_ID, BONUS_AMOUNT)
SELECT EMPLOYEE_ID, SALARY * 0.20 FROM EMPLOYEES WHERE SALARY > (SELECT AVG(SALARY) FROM EMPLOYEES);
```

Query Result × | Script Output ×
| Task completed in 0.097 seconds

```
Error at Command Line : 3 Column : 13
Error report -
SQL Error: ORA-00942: table or view does not exist
00942. 00000 -  "table or view does not exist"
*Cause:
*Action:

Table EMPLOYEE_BONUS created.


51 rows inserted.
```

(20)

CREATE TABLE EMP_BACKUP AS

SELECT * FROM EMPLOYEES WHERE 1=0;

INSERT INTO EMP_BACKUP

SELECT * FROM EMPLOYEES WHERE DEPARTMENT_ID = 10;

ALTER TABLE EMP_BACKUP MODIFY JOB_ID VARCHAR2(15);

UPDATE EMP_BACKUP set JOB_ID = 'Senior' || ' ' || JOB_ID

WHERE (MONTHS_BETWEEN(sysdate,HIRE_DATE)/ 12) > 10;

Worksheet | Query Builder

```
--23P-0559 BCS(4A)

CREATE TABLE EMP_BACKUP AS
SELECT * FROM EMPLOYEES WHERE 1=0;

INSERT INTO EMP_BACKUP
SELECT * FROM EMPLOYEES WHERE DEPARTMENT_ID = 10;

ALTER TABLE EMP_BACKUP MODIFY JOB_ID VARCHAR2(15);
UPDATE EMP_BACKUP set JOB_ID = 'Senior' || ' ' || JOB_ID
WHERE ( MONTHS_BETWEEN(sysdate,HIRE_DATE)/ 12) > 10;
```

Query Result × | Script Output ×
| Task completed in 0.109 seconds

```
Table EMP_BACKUP created.


1 row inserted.


Table EMP_BACKUP altered.


1 row updated.
```