Assignment 1 – Final

Group Members:

Full Name:	Student ID:	Email Address:
Harrison Stefanidis	105260443	105260443@student.swin.edu.au
Ilia Dress	104802873	104802873@student.swin.edu.au
Kevin Pham	105139705	105139705@student.swin.edu.au
Pratik Karmacharya	104987770	104987770@student.swin.edu.au

Assessment item	Marks
2.1	8
2.2	4
2.3	4
2.4	4
2.5	4
2.6	4
3(a).1	4
3(a).2	4
3(a).3	2
3(a).4	2
3(a).5	4
3(a).6	2
3(a).7	4
3(a).8	2
3(b)	8
Total	60

Assignment Questions:

Task 1 – SQL:

<u>2.1</u>

```
CREATE TABLE EMP
 (
    empno    INT PRIMARY KEY,
    ename    VARCHAR(50),
    job      VARCHAR(50),
    mgrno    INT,
    hiredate DATE,
    sal      FLOAT,
    comm     INT,
    deptno   INT,
    FOREIGN KEY(deptno) REFERENCES DEPT(deptno)
 );

CREATE TABLE DEPT
 (
    deptno   INT PRIMARY KEY,
    dname    VARCHAR(50),
    location VARCHAR(50)
 );

 insert into DEPT
 values
 (0, 'CONSULTING', 'ADELAIDE')
,(20, 'SALES', 'ADELAIDE')
,(30, 'MARKETING', 'SYDNEY')
,(40, 'EDUCATION', 'MELBOURNE');
```

INSERT INTO EMP

values

 (7839 ,'ALAN', 'TRAINER',NULL,'17-NOV-13', 5000 ,NULL,10)

,(7698 ,'LARRY', 'TRAINER',7839, '01-MAY-15', 3000 ,NULL,30)

,(7782 ,'RICHARD', 'TRAINER',7839, '09-JUN-17', 4200 ,NULL,10)

,(7566 ,'DEAN', 'TRAINER',7839, '02-APR-17', 3200 ,NULL,40)

,(7654 ,'MIKE', 'SALESMAN',7698, '28-SEP-12', 3300 ,3500, 30)

,(7499 ,'JIM', 'SALESMAN',7698, '20-FEB-13', 1600 ,1000, 30)

,(7844 ,'JEAN', 'SALESMAN',7698, '08-SEP-13', 1500 ,NULL,30   )

,(7900 ,'JAMES', 'PROGRAMMER',7698, '03-DEC-15', 3500 ,NULL,30   )

,(7521 ,'JILL', 'SALESMAN',7698, '22-FEB-15', 2300 ,500, 30)

,(7902 ,'HARRY', 'ANALYST',7566, '03-DEC-17', 3000 ,NULL,40   )

,(7369 ,'ANNE', 'PROGRAMMER',7902, '17-DEC-16', 1200 ,NULL,20   )

,(7788 ,'KIM', 'ANALYST',7566, '09-DEC-16', 3000 ,NULL,20   )

,(7876 ,'ADAM', 'PROGRAMMER',7788, '12-JAN-18', 3100 ,NULL,20   )

,(7934 ,'TIM', 'PROGRAMMER',7782, '23-JAN-18', 4500 ,NULL,10   );

```
MariaDB [sl04987770_db]> INSERT INTO EMP
    -> values
    ->  (7839 ,'ALAN', 'TRAINER',NULL,'17-NOV-13', 5000 ,NULL,10       )
    -> ,(7698 ,'LARRY', 'TRAINER',7839, '01-MAY-15', 3000 ,NULL,30  )
    -> ,(7782 ,'RICHARD', 'TRAINER',7839, '09-JUN-17', 4200 ,NULL,10)
    -> ,(7566 ,'DEAN', 'TRAINER',7839, '02-APR-17', 3200 ,NULL,40)
    -> ,(7654 ,'MIKE', 'SALESMAN',7698, '28-SEP-12', 3300 ,3500, 30 )
    -> ,(7499 ,'JIM', 'SALESMAN',7698, '20-FEB-13', 1600 ,1000, 30  )
    -> ,(7844 ,'JEAN', 'SALESMAN',7698, '08-SEP-13', 1500 ,NULL,30     )
    -> ,(7900 ,'JAMES', 'PROGRAMMER',7698, '03-DEC-15', 3500 ,NULL,30   )
    -> ,(7521 ,'JILL', 'SALESMAN',7698, '22-FEB-15', 2300 ,500, 30  )
    -> ,(7902 ,'HARRY', 'ANALYST',7566, '03-DEC-17', 3000 ,NULL,40     )
    -> ,(7369 ,'ANNE', 'PROGRAMMER',7902, '17-DEC-16', 1200 ,NULL,20    )
    -> ,(7788 ,'KIM', 'ANALYST',7566, '09-DEC-16', 3000 ,NULL,20       )
    -> ,(7876 ,'ADAM', 'PROGRAMMER',7788, '12-JAN-18', 3100 ,NULL,20    )
    -> ,(7934 ,'TIM', 'PROGRAMMER',7782, '23-JAN-18', 4500 ,NULL,10     );
Query OK, 14 rows affected, 14 warnings (0.00 sec)
Records: 14  Duplicates: 0  Warnings: 14

MariaDB [sl04987770_db]> select *  from EMP ;
+-------+---------+------------+-------+------------+------+------+--------+
| empno | ename   | job        | mgrno | hiredate   | sal  | comm | deptno |
+-------+---------+------------+-------+------------+------+------+--------+
|  7369 | ANNE    | PROGRAMMER |  7902 | 0000-00-00 | 1200 | NULL |     20 |
|  7499 | JIM     | SALESMAN   |  7698 | 0000-00-00 | 1600 | 1000 |     30 |
|  7521 | JILL    | SALESMAN   |  7698 | 0000-00-00 | 2300 |  500 |     30 |
|  7566 | DEAN    | TRAINER    |  7839 | 0000-00-00 | 3200 | NULL |     40 |
|  7654 | MIKE    | SALESMAN   |  7698 | 0000-00-00 | 3300 | 3500 |     30 |
|  7698 | LARRY   | TRAINER    |  7839 | 0000-00-00 | 3000 | NULL |     30 |
|  7782 | RICHARD | TRAINER    |  7839 | 0000-00-00 | 4200 | NULL |     10 |
|  7788 | KIM     | ANALYST    |  7566 | 0000-00-00 | 3000 | NULL |     20 |
|  7839 | ALAN    | TRAINER    |  NULL | 0000-00-00 | 5000 | NULL |     10 |
|  7844 | JEAN    | SALESMAN   |  7698 | 0000-00-00 | 1500 | NULL |     30 |
|  7876 | ADAM    | PROGRAMMER |  7788 | 0000-00-00 | 3100 | NULL |     20 |
|  7900 | JAMES   | PROGRAMMER |  7698 | 0000-00-00 | 3500 | NULL |     30 |
|  7902 | HARRY   | ANALYST    |  7566 | 0000-00-00 | 3000 | NULL |     40 |
|  7934 | TIM     | PROGRAMMER |  7782 | 0000-00-00 | 4500 | NULL |     10 |
+-------+---------+------------+-------+------------+------+------+--------+
14 rows in set (0.01 sec)
```

2.2

```
select ename
from EMP
where job='ANALYST' or job='PROGRAMMER'
order by ename;
```

```
MariaDB [s104987770_db]> select ename from EMP where job='ANALYST' or job='PROGRAMMER' order by ename;
+-------+
| ename |
+-------+
| ADAM  |
| ANNE  |
| HARRY |
| JAMES |
| KIM   |
| TIM   |
+-------+
6 rows in set (0.00 sec)
```

2.3

```
Select e.ename, m.ename as Manager_name
FROM EMP e
JOIN EMP m ON e.mgrno= m.empno
WHERE e.sal>m.sal;
```

```
MariaDB [s104987770_db]> SELECT e.ename , m.ename AS Manager_Name FROM EMP  e JOIN EMP  m ON e.mgrno = m.empno WHERE e.sal > m.sal;
+-------+--------------+
| ename | Manager_Name |
+-------+--------------+
| MIKE  | LARRY        |
| ADAM  | KIM          |
| JAMES | LARRY        |
| TIM   | RICHARD      |
+-------+--------------+
4 rows in set (0.00 sec)
```

2.4

```
select dname
from EMP
 join DEPT on EMP.deptno=DEPT.deptno
group by EMP.deptno
having min(EMP.sal)>4000;
```

```
MariaDB [s104987770_db]>  select dname  from EMP join DEPT on EMP.deptno=DEPT.deptno group by EMP.deptno having min(EMP.sal)>4000 ;
+------------+
| dname      |
+------------+
| CONSULTING |
+------------+
1 row in set (0.00 sec)
```

2.5

```
SELECT d.dname, avg(e.sal), count(e.ename) AS empcount
FROM EMP e
INNER JOIN DEPT d ON e.deptno = d.deptno
GROUP BY d.dname
HAVING empcount = (
                SELECT max(A.empcount)
                FROM (
                    SELECT count(empno) AS empcount
                    FROM EMP
                    GROUP BY deptno
                    ) AS COUNTS
                );
```

```
MariaDB [s104987770_db]> SELECT d.dname,avg(e.sal),count(e.ename) as empcount FROM EMP e INNER JOIN DEPT d ON e.deptno = d.deptno GROUP BY d.dname HAVING empcount = (SELECT max(A.empcount) FROM (SELECT count(empno) AS empcount FROM EMP G
ROUP BY deptno) A);
+-----------+--------------------+----------+
| dname     | avg(e.sal)         | empcount |
+-----------+--------------------+----------+
| MARKETING | 2533.3333333333335 |        6 |
+-----------+--------------------+----------+
1 row in set (0.01 sec)
```

2.6

```
UPDATE EMP
SET sal = sal * 1.06
WHERE deptno IN (
    SELECT deptno
    FROM DEPT
    WHERE loc = 'ADELAIDE'
);
```
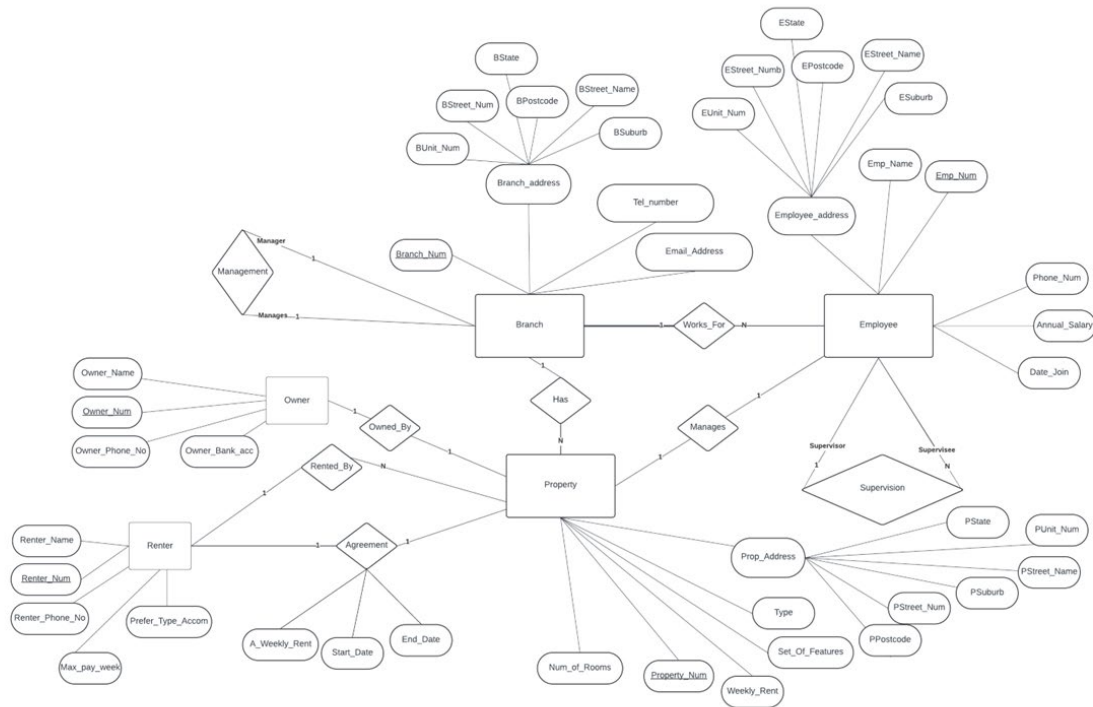
```
SELECT * FROM EMP;
```

```
MariaDB [s104987770_db]> UPDATE EMP SET sal = sal * 1.06 WHERE deptno IN (    SELECT deptno    FROM DEPT    WHERE location = 'ADELAIDE');
Query OK, 6 rows affected (0.00 sec)
Rows matched: 6  Changed: 6  Warnings: 0

MariaDB [s104987770_db]> select * from EMP;
+-------+---------+------------+-------+------------+------+------+--------+
| empno | ename   | job        | mgrno | hiredate   | sal  | comm | deptno |
+-------+---------+------------+-------+------------+------+------+--------+
|  7369 | ANNE    | PROGRAMMER |  7902 | 0000-00-00 | 1272 | NULL |     20 |
|  7499 | JIM     | SALESMAN   |  7698 | 0000-00-00 | 1600 | 1000 |     30 |
|  7521 | JILL    | SALESMAN   |  7698 | 0000-00-00 | 2300 |  500 |     30 |
|  7566 | DEAN    | TRAINER    |  7839 | 0000-00-00 | 3200 | NULL |     40 |
|  7654 | MIKE    | SALESMAN   |  7698 | 0000-00-00 | 3300 | 3500 |     30 |
|  7698 | LARRY   | TRAINER    |  7839 | 0000-00-00 | 3000 | NULL |     30 |
|  7782 | RICHARD | TRAINER    |  7839 | 0000-00-00 | 4452 | NULL |     10 |
|  7788 | KIM     | ANALYST    |  7566 | 0000-00-00 | 3180 | NULL |     20 |
|  7839 | ALAN    | TRAINER    |  NULL | 0000-00-00 | 5300 | NULL |     10 |
|  7844 | JEAN    | SALESMAN   |  7698 | 0000-00-00 | 1500 | NULL |     30 |
|  7876 | ADAM    | PROGRAMMER |  7788 | 0000-00-00 | 3286 | NULL |     20 |
|  7900 | JAMES   | PROGRAMMER |  7698 | 0000-00-00 | 3500 | NULL |     30 |
|  7902 | HARRY   | ANALYST    |  7566 | 0000-00-00 | 3000 | NULL |     40 |
|  7934 | TIM     | PROGRAMMER |  7782 | 0000-00-00 | 4770 | NULL |     10 |
+-------+---------+------------+-------+------------+------+------+--------+
14 rows in set (0.00 sec)
```

Task 2 – ER:

<u>3a</u>

ER Diagram of BestChoice Real Estate

<u>3b</u>

Relational Schema of BestChoice Real Estate