-- 1

-- Explain the difference between the UNION ALL and UNION operators

-- In what cases are they equivalent?

-- When they are equivalent, which one should you use?

The only difference between Union and Union All is that

Union extracts the rows that are being specified in the query while

Union All extracts all the rows including the duplicates (repeated values) from both the queries

[7]

```
-- 2
-- Write a query that generates a virtual auxiliary table of 10 numbers
-- in the range 1 through 10
-- Tables involved: no table

-- Auxiliary table of digits
--SELECT ones.n + 10*tens.n + 100*hundreds.n + 1000*thousands.n AS number
--FROM (VALUES(0),(1),(2),(3),(4),(5),(6),(7),(8),(9)) ones(n),
--    (VALUES(0),(1),(2),(3),(4),(5),(6),(7),(8),(9)) tens(n),
--     (VALUES(0),(1),(2),(3),(4),(5),(6),(7),(8),(9)) hundreds(n),
--     (VALUES(0),(1),(2),(3),(4),(5),(6),(7),(8),(9)) thousands(n)
--ORDER BY 1

--METHOD 2
--DROP TABLE IF EXISTS dbo.Digits;

--CREATE TABLE dbo.Digits(digit INT NOT NULL PRIMARY KEY);

--INSERT INTO dbo.Digits(digit)
 -- VALUES (0),(1),(2),(3),(4),(5),(6),(7),(8),(9);

--SELECT digit FROM dbo.Digits;


SELECT ones.n AS n
From (VALUES(0),(1),(2),(3),(4),(5),(6),(7),(8),(9))ones(n)

```

(10 rows affected)

Total execution time: 00:00:00.030

[7]

(10 rows affected)

Total execution time: 00:00:00.030

	n
1	0
2	1
3	2
4	3
5	4
6	5
7	6
8	7
9	8
10	9

[11]

```
-- 3
-- Write a query that returns customer and employee pairs
-- that had order activity in January 2016 but not in February 2016
-- Tables involved: TSQLV4 database, Orders table

USE TSQLV4;
GO
SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-01-01' AND orderdate <'2016-02-01'

EXCEPT -- in table 1 but not in table 2

SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-02-01' AND orderdate <'2016-03-01'

USE Northwinds2022TSQLV7;
GO
SELECT CustomerId,EmployeeId
FROM SALES.[Order]
WHERE orderdate >= '2016-01-01' AND orderdate <'2016-02-01'

EXCEPT -- in table 1 but not in table 2

SELECT CustomerId,EmployeeId
FROM SALES.[Order]
WHERE orderdate >= '2016-02-01' AND orderdate <'2016-03-01'
```

Commands completed successfully.

(50 rows affected)

(50 rows affected)

Total execution time: 00:00:00.087

	custid	empid
9	16	7
10	17	1
11	20	7
12	24	8
13	25	1
14	26	3
15	32	4
16	38	9
17	39	3
18	40	2
19	41	2
20	42	2
21	44	8
22	47	3
23	47	4
24	47	8
25	49	7
26	55	2
27	55	3
28	56	6

	CustomerId	EmployeeId
1	1	1
2	3	3
3	5	8
4	5	9
5	6	9
6	7	6

	CustomerId	EmployeeId
1	1	1
2	3	3
3	5	8
4	5	9
5	6	9
6	7	6
7	9	1
8	12	2
9	16	7
10	17	1
11	20	7
12	24	8
13	25	1
14	26	3
15	32	4
16	38	9
17	39	3
18	40	2
19	41	2
20	42	2

```sql
-- 4
-- Write a query that returns customer and employee pairs
-- that had order activity in both January 2016 and February 2016
-- Tables involved: TSQLV4 database, Orders table
USE TSQLV4;
GO
SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-01-01' AND orderdate <'2016-02-01'

INTERSECT -- return both in table 1  and table 2

SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-02-01' AND orderdate <'2016-03-01'

```

```sql
-- Write a query that returns customer and employee pairs
-- that had order activity in both January 2016 and February 2016
-- Tables involved: TSQLV4 database, Orders table
USE TSQLV4;
GO
SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-01-01' AND orderdate <'2016-02-01'

INTERSECT -- return both in table 1  and table 2

SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-02-01' AND orderdate <'2016-03-01'

USE Northwinds2022TSQLV7;
GO
SELECT CustomerId,EmployeeId
FROM SALES.[Order]
WHERE orderdate >= '2016-01-01' AND orderdate <'2016-02-01'

INTERSECT -- return both in table 1  and table 2

SELECT CustomerId,EmployeeId
FROM SALES.[Order]
WHERE orderdate >= '2016-02-01' AND orderdate <'2016-03-01'
```

Commands completed successfully.

(5 rows affected)

(5 rows affected)

Total execution time: 00:00:00.095

	custid	empid
1	20	3
2	39	9
3	46	5
4	67	1
5	71	4

	CustomerId	EmployeeId
1	20	3
2	39	9

	CustomerId	EmployeeId
1	20	3
2	39	9
3	46	5
4	67	1
5	71	4

```sql
-- 5
-- Write a query that returns customer and employee pairs
-- that had order activity in both January 2016 and February 2016
-- but not in 2015
-- Tables involved: TSQLV4 database, Orders table

USE TSQLV4;
GO
SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-01-01' AND orderdate <'2016-02-01'

INTERSECT -- return both in table 1  and table 2

SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2016-02-01' AND orderdate <'2016-03-01'

EXCEPT
SELECT custid,empid
FROM SALES.Orders
WHERE orderdate >= '2015-01-01' AND orderdate <'2016-01-01'


USE Northwinds2022TSQLV7;
GO
SELECT CustomerId,EmployeeId
FROM SALES.[Order]
WHERE orderdate >= '2016-01-01' AND orderdate <'2016-02-01'

INTERSECT -- return both in table 1  and table 2

SELECT CustomerId,EmployeeId
FROM SALES.[Order]
WHERE orderdate >= '2016-02-01' AND orderdate <'2016-03-01'
EXCEPT
SELECT CustomerId,EmployeeId
FROM SALES.[Order]
WHERE orderdate >= '2015-01-01' AND orderdate <'2016-01-01'

```

Commands completed successfully.

(2 rows affected)

(2 rows affected)

Total execution time: 00:00:00.100

	custid	empid
1	46	5
2	67	1

	CustomerId	EmployeeId
1	67	1
2	46	5