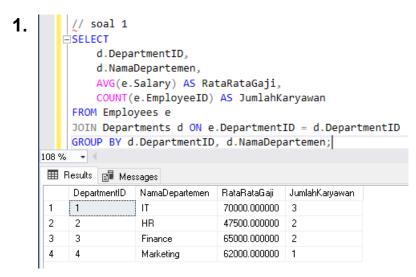# UTS : BASISDATA LANJUT

STUDI KASUS PENJUALAN PERUSAHAAN
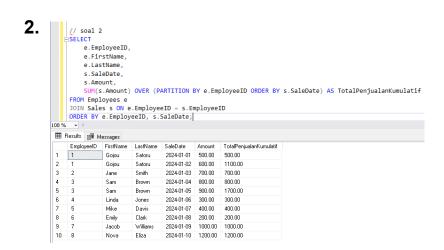
Nama: Nova Eliza Maharani
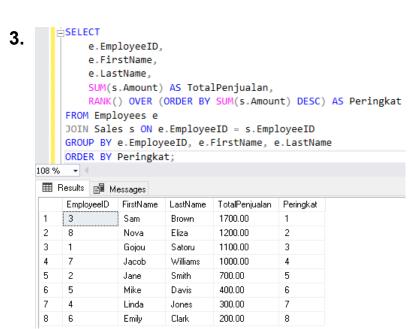Kelas: TI-1F
NIM: 2341720252

JAWABAN

1.

```
// soal 1
SELECT
    d.DepartmentID,
    d.NamaDepartemen,
    AVG(e.Salary) AS RataRataGaji,
    COUNT(e.EmployeeID) AS JumlahKaryawan
FROM Employees e
JOIN Departments d ON e.DepartmentID = d.DepartmentID
GROUP BY d.DepartmentID, d.NamaDepartemen;
```

Results:

	DepartmentID	NamaDepartemen	RataRataGaji	JumlahKaryawan
1	1	IT	70000.000000	3
2	2	HR	47500.000000	2
3	3	Finance	65000.000000	2
4	4	Marketing	62000.000000	1

2.

```
// soal 2
SELECT
    e.EmployeeID,
    e.FirstName,
    e.LastName,
    s.SaleDate,
    s.Amount,
    SUM(s.Amount) OVER (PARTITION BY e.EmployeeID ORDER BY s.SaleDate) AS TotalPenjualanKumulatif
FROM Employees e
JOIN Sales s ON e.EmployeeID = s.EmployeeID
ORDER BY e.EmployeeID, s.SaleDate;
```

Results:

	EmployeeID	FirstName	LastName	SaleDate	Amount	TotalPenjualanKumulatif
1	1	Gojou	Satoru	2024-01-01	500.00	500.00
2	1	Gojou	Satoru	2024-01-02	600.00	1100.00
3	2	Jane	Smith	2024-01-03	700.00	700.00
4	3	Sam	Brown	2024-01-04	800.00	800.00
5	3	Sam	Brown	2024-01-05	900.00	1700.00
6	4	Linda	Jones	2024-01-06	300.00	300.00
7	5	Mike	Davis	2024-01-07	400.00	400.00
8	6	Emily	Clark	2024-01-08	200.00	200.00
9	7	Jacob	Williams	2024-01-09	1000.00	1000.00
10	8	Nova	Eliza	2024-01-10	1200.00	1200.00

3.

```
SELECT
    e.EmployeeID,
    e.FirstName,
    e.LastName,
    SUM(s.Amount) AS TotalPenjualan,
    RANK() OVER (ORDER BY SUM(s.Amount) DESC) AS Peringkat
FROM Employees e
JOIN Sales s ON e.EmployeeID = s.EmployeeID
GROUP BY e.EmployeeID, e.FirstName, e.LastName
ORDER BY Peringkat;
```

Results:

	EmployeeID	FirstName	LastName	TotalPenjualan	Peringkat
1	3	Sam	Brown	1700.00	1
2	8	Nova	Eliza	1200.00	2
3	1	Gojou	Satoru	1100.00	3
4	7	Jacob	Williams	1000.00	4
5	2	Jane	Smith	700.00	5
6	5	Mike	Davis	400.00	6
7	4	Linda	Jones	300.00	7
8	6	Emily	Clark	200.00	8

4.

```sql
// soal 4
SELECT
    SaleID,
    ProductID,
    SaleDate,
    Amount AS PenjualanHariIni,
    COALESCE(LAG(Amount, 1) OVER (PARTITION BY ProductID ORDER BY SaleDate), 0) AS PenjualanKemarin,
    (Amount - COALESCE(LAG(Amount, 1) OVER (PARTITION BY ProductID ORDER BY SaleDate), 0)) AS SelisihPenjualan
FROM
    Sales
ORDER BY
    ProductID, SaleDate;
```

108 %

Results | Messages

	SaleID	ProductID	SaleDate	PenjualanHariIni	PenjualanKemarin	SelisihPenjualan
1	1	1	2024-01-01	500.00	0.00	500.00
2	5	1	2024-01-05	900.00	500.00	400.00
3	7	1	2024-01-07	400.00	900.00	-500.00
4	2	2	2024-01-02	600.00	0.00	600.00
5	3	2	2024-01-03	700.00	600.00	100.00
6	8	2	2024-01-08	200.00	700.00	-500.00
7	10	2	2024-01-10	1200.00	200.00	1000.00
8	4	3	2024-01-04	800.00	0.00	800.00
9	6	3	2024-01-06	300.00	800.00	-500.00
10	9	3	2024-01-09	1000.00	300.00	700.00

5.

```sql
// soal 5
SELECT
    p.ProductID,
    p.ProductName,
    SUM(s.Amount) AS TotalPenjualan
FROM Product p
JOIN Sales s ON p.ProductID = s.ProductID
GROUP BY p.ProductID, p.ProductName
HAVING SUM(s.Amount) < (
    SELECT AVG(TotalPenjualan)
    FROM (
        SELECT SUM(Amount) AS TotalPenjualan
        FROM Sales
        GROUP BY ProductID
    ) AS Subquery
);
```

108 %

Results | Messages

	ProductID	ProductName	TotalPenjualan
1	1	Laptop	1800.00
2	3	Tablet	2100.00

6.

```sql
SELECT
    EmployeeID,
    FirstName,
    LastName,
    Salary,
    AVG(Salary) OVER (PARTITION BY DepartmentID) AS RataRataGaji,
    (Salary * 100.0 / AVG(Salary) OVER (PARTITION BY DepartmentID)) AS PersentaseGaji
FROM Employees
ORDER BY DepartmentID, EmployeeID;
```

108 %

Results | Messages

	EmployeeID	FirstName	LastName	Salary	RataRataGaji	PersentaseGaji
1	1	Gojou	Satoru	60000.00	70000.000000	85.71428571428571428571
2	2	Jane	Smith	70000.00	70000.000000	100.00000000000000000000
3	6	Emily	Clark	80000.00	70000.000000	114.28571428571428571428
4	3	Sam	Brown	45000.00	47500.000000	94.73684210526315789473
5	4	Linda	Jones	50000.00	47500.000000	105.26315789473684210526
6	5	Mike	Davis	75000.00	65000.000000	115.38461538461538461538
7	7	Jacob	Williams	55000.00	65000.000000	84.61538461538461538461
8	8	Nova	Eliza	62000.00	62000.000000	100.00000000000000000000

7.

```sql
// soal 7
SELECT
    DATEPART(QUARTER, SaleDate) AS Kuartal,
    SUM(Amount) AS TotalPenjualan
FROM Sales
WHERE YEAR(SaleDate) = YEAR(GETDATE())
GROUP BY DATEPART(QUARTER, SaleDate)
ORDER BY Kuartal;
```

108 %

Results | Messages

8.

```
// soal 8
WITH RankedEmployees AS (
    SELECT
        EmployeeID,
        FirstName,
        LastName,
        DepartmentID,
        Salary,
        RANK() OVER (PARTITION BY DepartmentID ORDER BY Salary DESC) AS SalaryRank
    FROM Employees
)
SELECT
    EmployeeID,
    FirstName,
    LastName,
    DepartmentID,
    Salary
FROM RankedEmployees
WHERE SalaryRank = 1;
```

108 %

Results | Messages

	EmployeeID	FirstName	LastName	DepartmentID	Salary
1	6	Emily	Clark	1	80000.00
2	4	Linda	Jones	2	50000.00
3	5	Mike	Davis	3	75000.00
4	8	Nova	Eliza	4	62000.00

9.

```
// soal 9
SELECT
    p.ProductID,
    p.ProductName,
    p.Stock
FROM Product p
LEFT JOIN Sales s ON p.ProductID = s.ProductID AND CAST(s.SaleDate AS DATE) = '2024-10-17'
WHERE p.Stock > 0 AND s.SaleID IS NULL;
```

108 %

Results | Messages

	ProductID	ProductName	Stock
1	1	Laptop	10
2	2	Smartphone	20
3	3	Tablet	15
4	4	Printer	5
5	5	Headphones	50
6	6	Monitor	8
7	7	Keyboard	30
8	8	Mouse	40
9	9	Webcam	25
10	10	External Hard Drive	12

10.

```
// soal 10
SELECT
    EmployeeID,
    FirstName,
    LastName,
    Salary,
    LAG(Salary) OVER (ORDER BY EmployeeID) AS SalaryBulanSebelumnya,
    Salary - LAG(Salary) OVER (ORDER BY EmployeeID) AS PerubahanGaji
FROM Employees
ORDER BY EmployeeID;
```

108 %

Results | Messages

	EmployeeID	FirstName	LastName	Salary	SalaryBulanSebelumnya	PerubahanGaji
1	1	Gojou	Satoru	60000.00	NULL	NULL
2	2	Jane	Smith	70000.00	60000.00	10000.00
3	3	Sam	Brown	45000.00	70000.00	-25000.00
4	4	Linda	Jones	50000.00	45000.00	5000.00
5	5	Mike	Davis	75000.00	50000.00	25000.00
6	6	Emily	Clark	80000.00	75000.00	5000.00
7	7	Jacob	Williams	55000.00	80000.00	-25000.00
8	8	Nova	Eliza	62000.00	55000.00	7000.00

11.

```
// soal 11
SELECT
    p.ProductID,
    p.ProductName,
    SUM(s.Amount) AS TotalPenjualan
FROM Product p
JOIN Sales s ON p.ProductID = s.ProductID
GROUP BY p.ProductID, p.ProductName
HAVING SUM(s.Amount) > 10000;
```

108 %

Results | Messages

ProductID	ProductName	TotalPenjualan

12.

```
// soal 12
SELECT
    e.EmployeeID,
    e.FirstName,
    e.LastName,
    AVG(daily_sales.TotalAmount) AS RataRataPenjualanHarian
FROM Employees e
LEFT JOIN (
    SELECT
        EmployeeID,
        SaleDate,
        SUM(Amount) AS TotalAmount
    FROM Sales
    GROUP BY EmployeeID, SaleDate
) AS daily_sales ON e.EmployeeID = daily_sales.EmployeeID
GROUP BY e.EmployeeID, e.FirstName, e.LastName;
```

108 %

Results | Messages

	EmployeeID	FirstName	LastName	RataRataPenjualanHarian
1	1	Gojou	Satoru	550.000000
2	2	Jane	Smith	700.000000
3	3	Sam	Brown	850.000000
4	4	Linda	Jones	300.000000
5	5	Mike	Davis	400.000000
6	6	Emily	Clark	200.000000
7	7	Jacob	Williams	1000.000000
8	8	Nova	Eliza	1200.000000