Tugas 1

1. Import data perusahaan tersebut pada DBMS MySQL!
2. Analisa struktur data dari database perusahaan tersebut, dalam bentuk tabel, analisa hubungan setiap tabel nya!
   - Tabel Relasi

No	Tabel 1	Tabel 2	Jenis Relasi
1	productlines	products	One to zero or many
2	products	orderdetails	One to zero or many
3	orders	orderdetails	One to many
4	offices	employees	One to zero or many
5	employees	customers	One to zero or many
6	customers	orders	One to zero or many
7	customers	payments	One to zero or many

3. Analisa jumlah field pada setiap tabel!
   - Tabel Field

No	Nama Tabel	Jumlah Field (Kolom)
1	productlines	4
2	products	9
3	orderdetails	5
4	orders	7
5	customers	13
6	employees	8
7	offices	9
8	payments	4

PRAKTIKUM 1

1. Jalankan query berikut pada DBMS MySql yang telah tersedia data Perusahaan LegendVehicle.

> SELECT *
> FROM employees employe, employees manager, customers cust
> WHERE employe.reportsTo = manager.employeeNumber
> AND employe.employeeNumber = cust.salesRepEmployeeNumber;

2. Buka tab baru pada browser untuk melakukan eksekusi query berikut:

SELECT manager.employeeNumber as id_manager,
    CONCAT(manager.firstName,manager.lastName) as Manager,
    employee.employeeNumber as id_staff,
    CONCAT(employee.firstName,employee.lastName) as staff
FROM employees employee, employees manager
WHERE employee.reportsTo=manager.employeeNumber
ORDER BY manager.firstName;

id_manager	Manager	id_staff	staff
1143	AnthonyBow	1165	LeslieJennings
1143	AnthonyBow	1166	LeslieThompson
1143	AnthonyBow	1188	JulieFirrelli
1143	AnthonyBow	1216	StevePatterson
1143	AnthonyBow	1286	Foon YueTseng
1143	AnthonyBow	1323	GeorgeVanauf
1002	DianeMurphy	1056	MaryPatterson
1002	DianeMurphy	1076	JeffFirrelli
1102	GerardBondur	1337	LouiBondur
1102	GerardBondur	1370	GerardHernandez
1102	GerardBondur	1401	PamelaCastillo
1102	GerardBondur	1501	LarryBott
1102	GerardBondur	1504	BarryJones
1102	GerardBondur	1702	MartinGerard
1621	MamiNishi	1625	YoshimiKato
1056	MaryPatterson	1088	WilliamPatterson
1056	MaryPatterson	1102	GerardBondur
1056	MaryPatterson	1143	AnthonyBow
1056	MaryPatterson	1621	MamiNishi
1088	WilliamPatterson	1611	AndyFixter
1088	WilliamPatterson	1612	PeterMarsh
1088	WilliamPatterson	1619	TomKing

TUGAS 2

1. Gambarlah hirarki organisasi berdasarkan atasan dari setiap pegawai sesuai dengan hasil prkatikum diatas!

- DianeMurphy
  - JeffFirrelli
  - MaryPatterson
    - WilliamPatterson
      - AndyFixter
      - PeterMarsh
      - TomKing
    - GerardBondur
      - LouiBondur
      - GerardHernandez
      - PamelaCastillo
      - LarryBott
      - BarryJones
      - MartinGerard
    - AnthonyBow
      - LeslieJennings
      - LeslieThompson
      - JulieFirrei
      - StevePatterson
      - Foon YueTseng
      - GeorgeVanauf
    - MamiNishi
      - YoshimiKato

Buka tab baru pada browser untuk melakukan eksekusi query berikut:

```sql
1  SELECT
2      manager.employeeNumber AS id_manager,
3      CONCAT(manager.firstName, ' ', manager.lastName) AS Manager,
4      employee.employeeNumber AS id_staff,
5      CONCAT(employee.firstName, ' ', employee.lastName) AS staff,
6      COUNT(cust.customerNumber) AS total_cust
7  FROM employees employee
8  JOIN employees manager ON employee.reportsTo = manager.employeeNumber
9  LEFT JOIN customers cust ON employee.employeeNumber = cust.salesRepEmployeeNumber
10 GROUP BY
11     manager.employeeNumber,
12     manager.firstName,
13     manager.lastName,
14     employee.employeeNumber,
15     employee.firstName,
16     employee.lastName
17 ORDER BY manager.firstName;
18
```

id_manager	Manager	id_staff	staff	total_cust
1143	Anthony Bow	1165	Leslie Jennings	6
1143	Anthony Bow	1166	Leslie Thompson	6
1143	Anthony Bow	1188	Julie Firrelli	6
1143	Anthony Bow	1216	Steve Patterson	6
1143	Anthony Bow	1286	Foon Yue Tseng	7
1143	Anthony Bow	1323	George Vanauf	8
1002	Diane Murphy	1056	Mary Patterson	0
1002	Diane Murphy	1076	Jeff Firrelli	0
1102	Gerard Bondur	1337	Loui Bondur	6
1102	Gerard Bondur	1370	Gerard Hernandez	7
1102	Gerard Bondur	1401	Pamela Castillo	10
1102	Gerard Bondur	1501	Larry Bott	8
1102	Gerard Bondur	1504	Barry Jones	9
1102	Gerard Bondur	1702	Martin Gerard	6
1621	Mami Nishi	1625	Yoshimi Kato	0
1056	Mary Patterson	1088	William Patterson	0
1056	Mary Patterson	1102	Gerard Bondur	0
1056	Mary Patterson	1143	Anthony Bow	0
1056	Mary Patterson	1621	Mami Nishi	5
1088	William Patterson	1611	Andy Fixter	5
1088	William Patterson	1612	Peter Marsh	5
1088	William Patterson	1619	Tom King	0

TUGAS 3

1. Siapakah staff dengan hirarki paling bawah yang berprestasi dilihat dari jumlah customer terbanyak?
   - Pamela Castillo karena mimiliki paling banyak jumlah customer yaitu 10.
2. Jika KPI atasan dihitung dari customer yang dimilikinya dijumlah dengan customer dari staff dibawahnya, urutkan ranking prestasi keseluruhan pegawai beserta keterangan jumlah customer yang dimilikinya!
   - Rank 1 Diane murphy dengan jumlah 61 customer dari bawahannya.
     Rank 2 Gerard Bondur dengan jumlah 46 customer dari bawahannya.
     Rank 3 Anthony Bow dengan jumlah 39 customer dari bawahannya.

3. Analisa kembali data LegendVehicle untuk mendapatkan ranking pegawai berdasarkan KPI "Jumlah omset yang didapat". Urutkan ranking pegawai beserta keterangan dana yang didapat!
   - SELECT e.employeeNumber AS id_employee, CONCAT(e.firstName, ' ', e.lastName) AS employee_name, COALESCE(SUM(p.amount), 0) AS total FROM employees e LEFT JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber LEFT JOIN payments p ON c.customerNumber = p.customerNumber GROUP BY e.employeeNumber, e.firstName, e.lastName ORDER BY `total` DESC;

id_employee	employee_name	total ▾ 1
1370	Gerard Hernandez	1112003.81
1165	Leslie Jennings	989906.55
1401	Pamela Castillo	750201.87
1501	Larry Bott	686653.25
1504	Barry Jones	637672.65
1323	George Vanauf	584406.80
1337	Loui Bondur	569485.75
1611	Andy Fixter	509385.82
1612	Peter Marsh	497907.16
1286	Foon Yue Tseng	488212.67
1621	Mami Nishi	457110.07
1216	Steve Patterson	449219.13
1702	Martin Gerard	387477.47
1188	Julie Firrelli	386663.20
1166	Leslie Thompson	347533.03
1002	Diane Murphy	0.00
1056	Mary Patterson	0.00
1076	Jeff Firrelli	0.00
1088	William Patterson	0.00
1102	Gerard Bondur	0.00
1143	Anthony Bow	0.00
1619	Tom King	0.00
1625	Yoshimi Kato	0.00

4. Jika KPI yang pertama merupakan "Jumlah customer yang bertransaksi" sedangkan KPI yang kedua "Jumlah omset yang didapat". Maka, berapakah jumlah field yang dibutuhkan untuk mendapatkan informasi tersebut?
   - 5 field, 3field table employee(id,fristname,lastname),1 field table customers & payments

5. Buatlah report pertahun untuk KPI "Jumlah omset yang didapat" pada Foon Yue Tseng dan Pamela Castillo. Serta gambarkan grafiknya (grafik garis).
   - SELECT
     YEAR(p.paymentDate) AS year,
     e.employeeNumber,
     CONCAT(e.firstName, ' ', e.lastName) AS employee_name,
     SUM(p.amount) AS total_revenue
   FROM employees e
   JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
   JOIN payments p ON c.customerNumber = p.customerNumber
   WHERE e.firstName = 'Foon Yue' AND e.lastName = 'Tseng'
     OR e.firstName = 'Pamela' AND e.lastName = 'Castillo'
   GROUP BY year, e.employeeNumber, e.firstName, e.lastName
   ORDER BY year ASC;

year ▲ 1	employeeNumber	employee_name	total_revenue
2003	1286	Foon Yue Tseng	221887.03
2003	1401	Pamela Castillo	317104.78
2004	1286	Foon Yue Tseng	237255.26
2004	1401	Pamela Castillo	409910.07
2005	1286	Foon Yue Tseng	29070.38
2005	1401	Pamela Castillo	23187.02

report pertahun
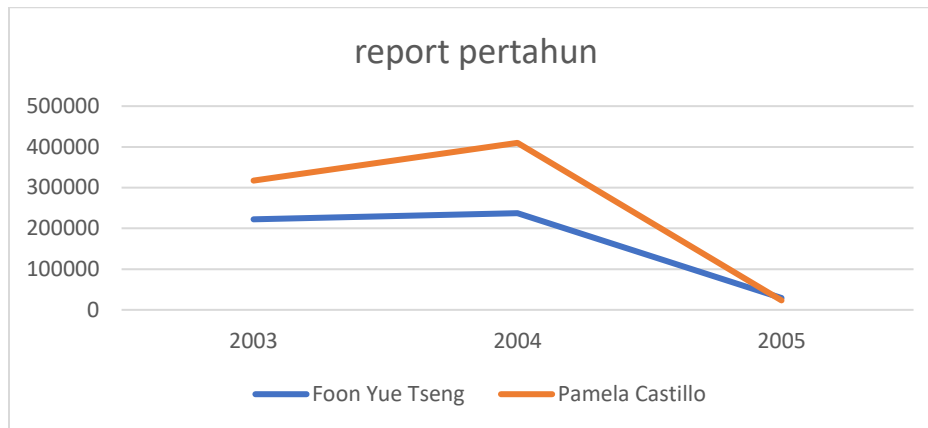
Studi Kasus

1. Field apa saja yang diperlukan untuk menampilkan penjualan di setiap cabang.
   - 3 field cabang, tahun, total_order.
2. Bentuk query dengan memperhatikan relasi antar tabel.
   - SELECT

        cabang.name AS cabang,

        YEAR(sales.transaction_date) AS tahun,

        SUM(sales.amount) AS total_omset

     FROM sales

     JOIN cabang ON sales.branch_id = branch.id

     GROUP BY cabang.name, YEAR(sales.transaction_date)

SOAL BONUS: buatlah report lain dengan sumber data OLTP yang sama, analisa field yang digunakan, bentuk struktur query dan tuliskan dalam tabel serta grafiknya.

SELECT

  o.city AS cabang,

  YEAR(ord.orderDate) AS tahun,

COUNT(ord.orderNumber) AS total_orders

FROM orders ord

JOIN customers c ON ord.customerNumber = c.customerNumber

JOIN employees e ON c.salesRepEmployeeNumber = e.employeeNumber

JOIN offices o ON e.officeCode = o.officeCode

GROUP BY o.city, YEAR(ord.orderDate)

ORDER BY o.city, tahun;

cabang	tahun ▲ 2	total_orders
Boston	2003	9
Boston	2004	18
Boston	2005	5
London	2003	18
London	2004	24
London	2005	5
NYC	2003	14
NYC	2004	22
NYC	2005	3
Paris	2003	34
Paris	2004	49
Paris	2005	23
San Francisco	2003	17
San Francisco	2004	17
San Francisco	2005	14
Sydney	2003	12
Sydney	2004	15
Sydney	2005	11
Tokyo	2003	7
Tokyo	2004	6
Tokyo	2005	3