

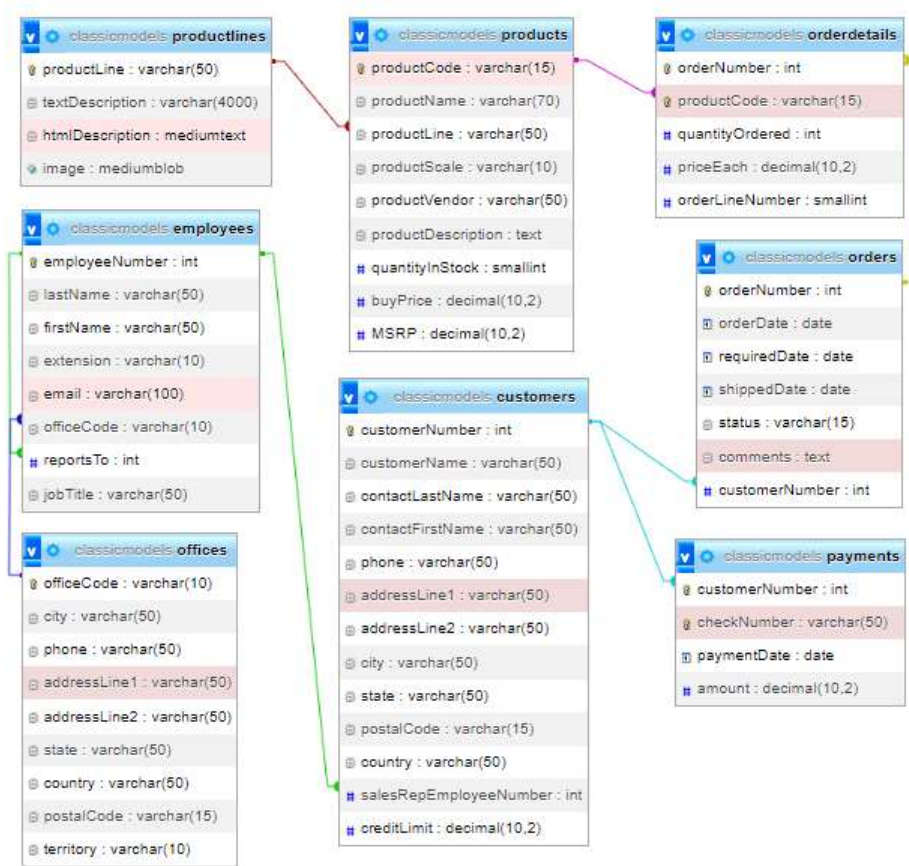
JOBSHEET 3

DATA WAREHOUSE

Nama : My Babby Findia R.S

No. Absen : 16

Kelas : SIB-2B



- Analisa struktur data dari database perusahaan tersebut, dalam bentuk tabel, analisa hubungan setiap tabel nya!

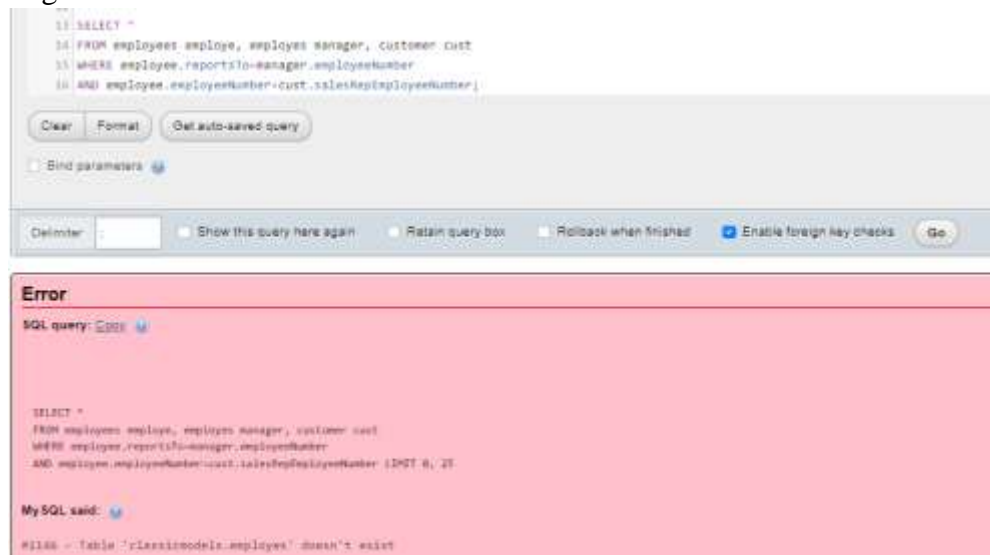
Tabel 1	Tabel 2	Jenis Relasi
Productlines	Products	One to many
Products	Orderdetails	One to many
Orders	Orderdetails	One to many
Customers	Orders	One to many
Customers	Payments	One to many
Employees	Offices	Many to many
Employees	Employees	One to many

2. Analisa jumlah field pada setiap tabel!

Nama Tabel	Jumlah Field
Productlines	4
Products	9
Orderdetails	5
Orders	7
Customers	13
Payments	4
Employees	8
Offices	9

PRAKTIKUM 1

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



Terdapat eror pada codingan tersebut dikarenakan Query pertama error karena kesalahan penulisan alias, salah nama tabel (employees seharusnya employees dan customer seharusnya customers), serta penggunaan alias yang tidak sesuai di WHERE

The screenshot shows the result of a query in a MySQL database. The query is:

```

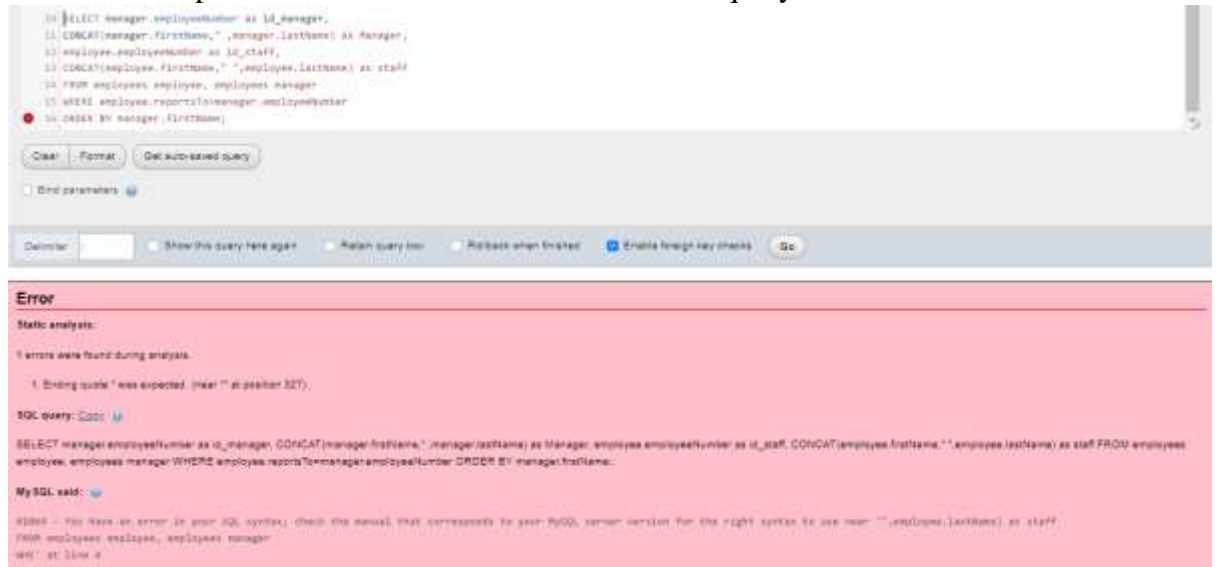
SELECT * FROM employees employee JOIN employees manager ON employee.reportsTo = manager.employeeNumber JOIN customers cust ON employee.employeeNumber = cust.salesRepEmployeeNumber;

```

The result shows 5 rows of data. The columns are: employeeNumber, lastName, firstName, extension, email, officeCode, reportsTo, jobTitle, employeeNumber, lastName, firstName, extension, email, officeCode.

employeeNumber	lastName	firstName	extension	email	officeCode	reportsTo	jobTitle	employeeNumber	lastName	firstName	extension	email	officeCode
1155	Jennings	Leslie	43291	jennings@classicmodels.com	1	1143	Sales Rep	1143	Bow	Anthony	45426	abow@classicmodels.com	1
1155	Jennings	Leslie	43291	jennings@classicmodels.com	1	1143	Sales Rep	1143	Bow	Anthony	45426	abow@classicmodels.com	1
1155	Jennings	Leslie	43291	jennings@classicmodels.com	1	1143	Sales Rep	1143	Bow	Anthony	45426	abow@classicmodels.com	1
1155	Jennings	Leslie	43291	jennings@classicmodels.com	1	1143	Sales Rep	1143	Bow	Anthony	45426	abow@classicmodels.com	1
1155	Jennings	Leslie	43291	jennings@classicmodels.com	1	1143	Sales Rep	1143	Bow	Anthony	45426	abow@classicmodels.com	1

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



The screenshot shows a MySQL query editor with a query that has a syntax error. The query is:

```
10 SELECT manager.employeeNumber as id_manager,
11 CONCAT(manager.firstName," ",manager.lastName) as Manager,
12 employee.employeeNumber as id_staff,
13 CONCAT(employee.firstName," ",employee.lastName) as staff
14 FROM employees employee, employees manager
15 WHERE employee.reportsTo=manager.employeeNumber
16 ORDER BY manager.firstName;
```

The error message is:

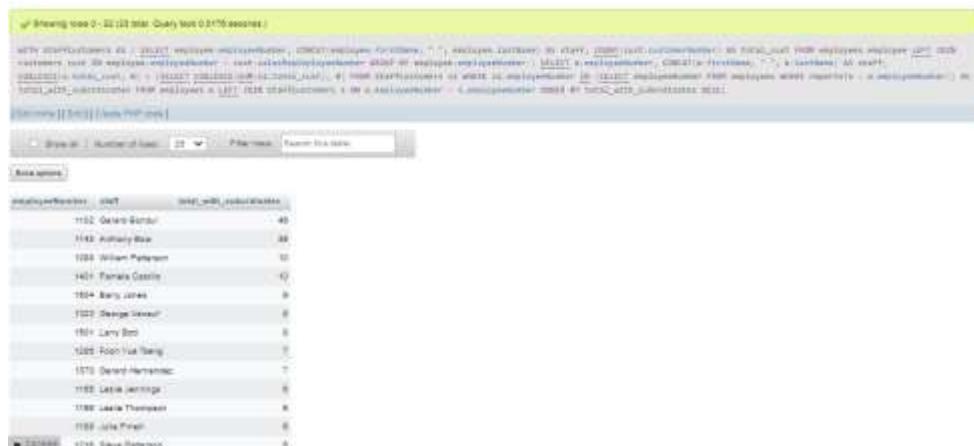
Error
Static analysis:
1 errors were found during analysis.
1. Ending quote ' was expected. (near "" at position 327)

SQL query: Copy

MySQL said:

ERROR 1064 (42000) You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near "" ,employee.lastName) as staff FROM employees employee, employees manager WHERE at line 4

Terdapat eror pada codingan tersebut dikarenakan Query kedua error karena kesalahan dalam sintaks CONCAT, di mana tanda kutip dan tanda kurung tidak ditutup dengan benar.



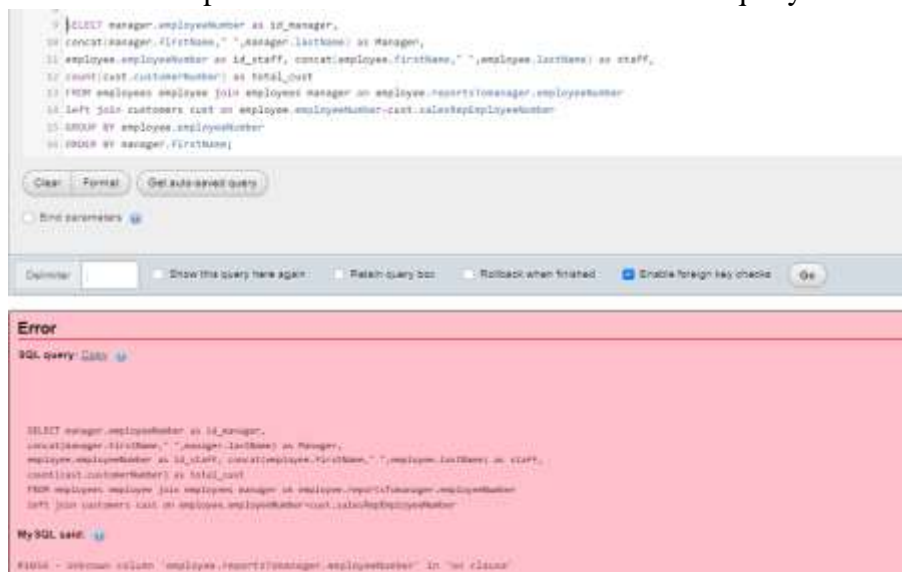
The screenshot shows a MySQL query editor with a query that has been successfully executed. The query is:

```
10 SELECT manager.employeeNumber as id_manager,
11 CONCAT(manager.firstName," ",manager.lastName) as Manager,
12 employee.employeeNumber as id_staff,
13 CONCAT(employee.firstName," ",employee.lastName) as staff,
14 COUNT(customerNumber) as total_cust
15 FROM employees employee JOIN employees manager ON employee.reportsTo=manager.employeeNumber
16 LEFT JOIN customers cust ON employee.employeeNumber=cust.salesRepEmployeeNumber
17 GROUP BY employee.employeeNumber
18 ORDER BY manager.firstName;
```

The results are displayed in a table with the following columns: employeeNumber, staff, total_cust, and salesRepEmployeeNumber.

employeeNumber	staff	total_cust	salesRepEmployeeNumber
1152	Oscar Gordon	40	
1143	Katheryn Rose	38	
1055	William Peterson	10	
1401	Pamela Costello	10	
1004	Barry Jones	0	
1022	George Lincol	0	
1001	Larry Bird	0	
1005	Poon Yia Wang	0	
1075	David Hernandez	7	
1152	Leticia Jennings	0	
1180	Leticia Thompson	0	
1150	Jane Fisher	0	
1210	Oliver Patterson	0	

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



The screenshot shows a MySQL query editor with a query that has a syntax error. The query is:

```
10 SELECT manager.employeeNumber as id_manager,
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14 COUNT(customerNumber) as total_cust
15 FROM employees employee JOIN employees manager ON employee.reportsTo=manager.employeeNumber
16 LEFT JOIN customers cust ON employee.employeeNumber=cust.salesRepEmployeeNumber
17 GROUP BY employee.employeeNumber
18 ORDER BY manager.firstName;
```

The error message is:

Error
SQL query: Copy

MySQL said:

ERROR 1064 (42000) You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near "" ,employee.lastName) as staff FROM employees employee, employees manager WHERE at line 4

SQL query took 0.14151 sec. Query took 0.076 sec.

```
SELECT a.employeeid, CASE WHEN a.first_name = 'a' THEN 10 ELSE 20 END AS emp_type, a.salary, a.department_id FROM employees a JOIN departments b ON a.department_id = b.department_id WHERE a.salary > 10000 ORDER BY a.salary
```

Running the query in SQL Developer

Table: employees

employeeid	first_name	salary
1210	Jason Holsinger	12000.00
1105	James King	11000.00
1001	Pearlman	10000.00
1002	John	9500.00
1003	John	9000.00
1004	John	8500.00
1005	John	8000.00
1006	John	7500.00
1007	John	7000.00
1008	John	6500.00
1009	John	6000.00
1010	John	5500.00
1011	John	5000.00
1012	John	4500.00
1013	John	4000.00
1014	John	3500.00
1015	John	3000.00
1016	John	2500.00
1017	John	2000.00
1018	John	1500.00
1019	John	1000.00
1020	John	500.00

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



- | id_staff | Staff | total_customers |
|----------|-----------------|-----------------|
| 1401 | Pamela Castillo | 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!

id_manager	Manager	total_kpi ▾ 1
1102	Gerard Bondur	46
1143	Anthony Bow	39
1088	William Patterson	10
1401	Pamela Castillo	10
1504	Barry Jones	9
1323	George Vanauf	8
1501	Larry Bott	8
1286	Foon Yue Tseng	7
1370	Gerard Hernandez	7
1165	Leslie Jennings	6
1166	Leslie Thompson	6
1188	Julie Firrelli	6
1216	Steve Patterson	6
1337	Loui Bondur	6
1702	Martin Gerard	6
1056	Mary Patterson	5
1611	Andy Fixter	5
1612	Peter Marsh	5
1621	Mami Nishi	5
1002	Diane Murphy	0
1076	Jeff Firrelli	0
1619	Tom King	0
1625	Yoshimi Kato	0



Rank	Employee	Total Customer	Keterangan
1	Gerad Bondur	46	6 bawahan (6 + 7 + 10 + 8 + 9 + 6)
2	Anthony Bow	33	6 Bawahan (6 + 6 + 0 + 6 + 7 + 8)
3	William Patterson	15	5 bawahan (5 + 0 + 5 + 5 + 0)

3. Analisa kembali data LegendVehicle untuk mendapatkan ranking pegawai berdasarkan KPI "Jumlah omset yang didapat". Urutkan ranking pegawai beserta keterangan dana yang didapat!

➤ Ranking pegawai

id_staff	Staff	total_revenue ▾ 1
1370	Gerard Hernandez	1258577.81
1165	Leslie Jennings	1081530.54
1401	Pamela Castillo	888220.55
1501	Larry Bott	732096.79
1504	Barry Jones	704853.91
1323	George Vanauf	689377.05
1612	Peter Marsh	584593.76
1337	Loui Bondur	569485.75
1611	Andy Fixter	562582.59
1216	Steve Patterson	505875.42
1286	Foon Yue Tseng	488212.67
1621	Mami Nishi	457110.07
1702	Martin Gerard	387477.47
1188	Julie Firrelli	386663.20
1166	Leslie Thompson	347533.03

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?

KPI	Jumlah Field
Jumlah customer yang bertransaksi	1
Jumlah omset yang didapat	1

5. Buatlah report pertahun untuk KPI "Jumlah omset yang didapat" pada Foon Yue Tseng dan Pamela Castillo. Serta gambarkan grafiknya (grafik garis).

Nama	2003	2004	2005
Foon Yue Tseng	162,000	242,000	488,212.87
Pamela Castillo	220,000	330,000	883,220.55

STUDY KASUS

Pak Huhut merupakan pemegang saham LegendVehicle. dia membutuhkan dashboard untuk melihat perkembangan penjualan (omset) disetiap cabang di tiap tahunnya. Dikarenakan perusahaan tersebut belum merekrut Data Engineer maka, penarikan informasi hanya bisa dilakukan melalui OLTP yang ada.

1. Field apa saja yang diperlukan untuk menampilkan penjualan di setiap cabang.
 - Nama Cabang
 - Tahun (2003, 2004, 2005)
 - Total Penjualan/Omset untuk setiap tahun
2. Bentuk query dengan memperhatikan relasi antar tabel.


```
SELECT o.city AS branchName, YEAR(p.paymentDate) AS Tahun,
SUM(p.amount) AS Total_Omset FROM payments p JOIN customers c ON
p.customerNumber = c.customerNumber JOIN employees e ON
c.salesRepEmployeeNumber = e.employeeNumber JOIN offices o ON
e.officeCode = o.officeCode GROUP BY o.city, YEAR(p.paymentDate) ORDER
BY o.city, YEAR(p.paymentDate);
```

branchName	Tahun	Total_Omset
Boston	2003	301781.38
Boston	2004	467177.07
Boston	2005	66923.88
London	2003	505384.85
London	2004	674815.75
London	2005	144125.30
NYC	2003	391175.53
NYC	2004	623872.78
NYC	2005	57571.16
Paris	2003	969959.90
Paris	2004	1368458.96
Paris	2005	480750.04
San Francisco	2003	532681.13
San Francisco	2004	517408.62
San Francisco	2005	287349.83
Sydney	2003	281985.51
Sydney	2004	509833.62
Sydney	2005	215473.85
Tokyo	2003	267249.40
Tokyo	2004	151761.45
Tokyo	2005	38099.22

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

```

e.employeeNumber AS id_karyawan,
CONCAT(e.firstName, ' ', e.lastName) AS karyawan,
YEAR(p.paymentDate) AS tahun,
SUM(p.amount) AS total_penjualan
FROM payments p
JOIN customers c ON p.customerNumber = c.customerNumber
JOIN employees e ON c.salesRepEmployeeNumber = e.employeeNumber
GROUP BY e.employeeNumber, YEAR(p.paymentDate)
ORDER BY tahun ASC, total_penjualan DESC;

```


id_karyawan	karyawan	tahun	total_penjualan
1185	Leslie Jennings	2003	413219.85
1401	Pamela Castillo	2003	317104.78
1370	Gerard Hernandez	2003	295246.44
1621	Mami Nishi	2003	267249.40
1501	Larry Bott	2003	261536.95
1504	Barry Jones	2003	243847.90
1611	Andy Fixter	2003	226808.03
1286	Foon Yue Tseng	2003	221887.03
1188	Julie Firrelli	2003	220116.97
1702	Martin Gerard	2003	179648.58
1337	Loui Bondur	2003	177960.10
1323	George Vanauf	2003	169288.50
1166	Leslie Thompson	2003	119461.28
1216	Steve Patterson	2003	81664.41
1612	Peter Marsh	2003	55177.48
1370	Gerard Hernandez	2004	487510.31
1401	Pamela Castillo	2004	409910.07
1323	George Vanauf	2004	386617.52
1504	Barry Jones	2004	365858.21
1612	Peter Marsh	2004	337455.80
1216	Steve Patterson	2004	337260.95
1185	Leslie Jennings	2004	332370.22
1501	Larry Bott	2004	308957.54
1337	Loui Bondur	2004	263209.69
1286	Foon Yue Tseng	2004	237255.26

