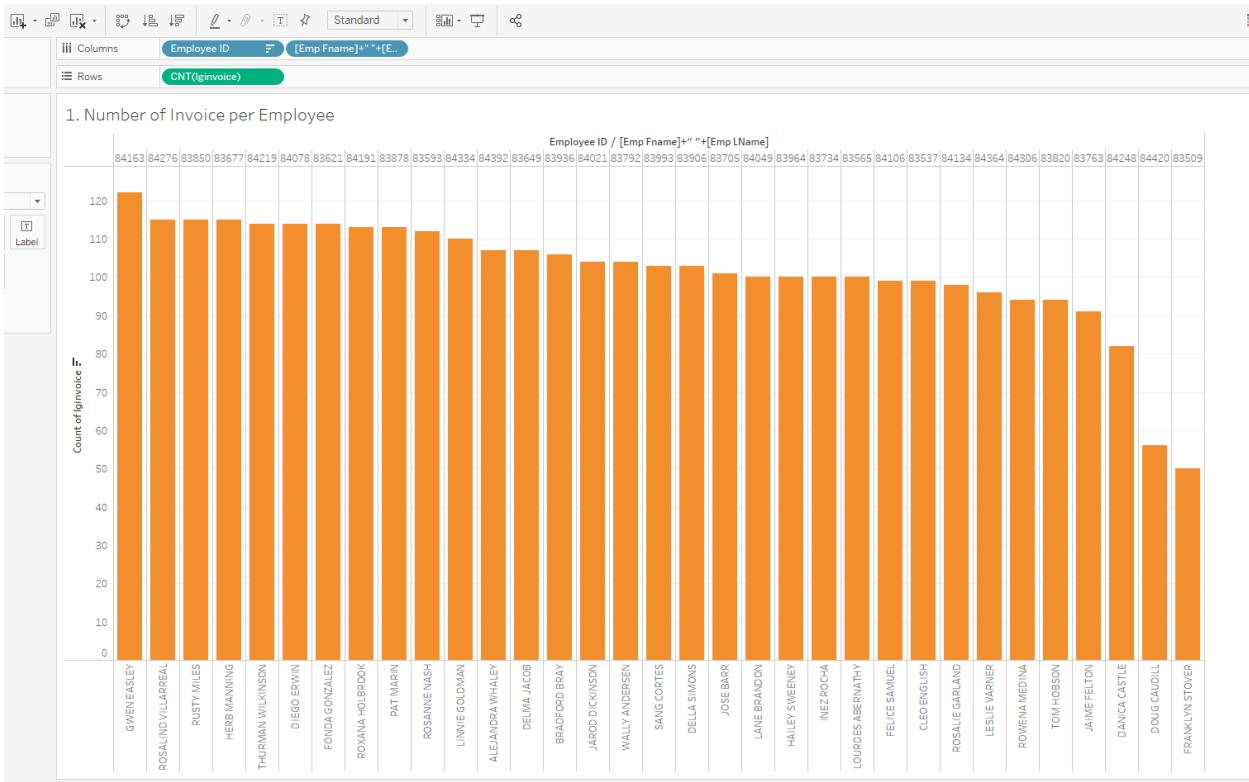
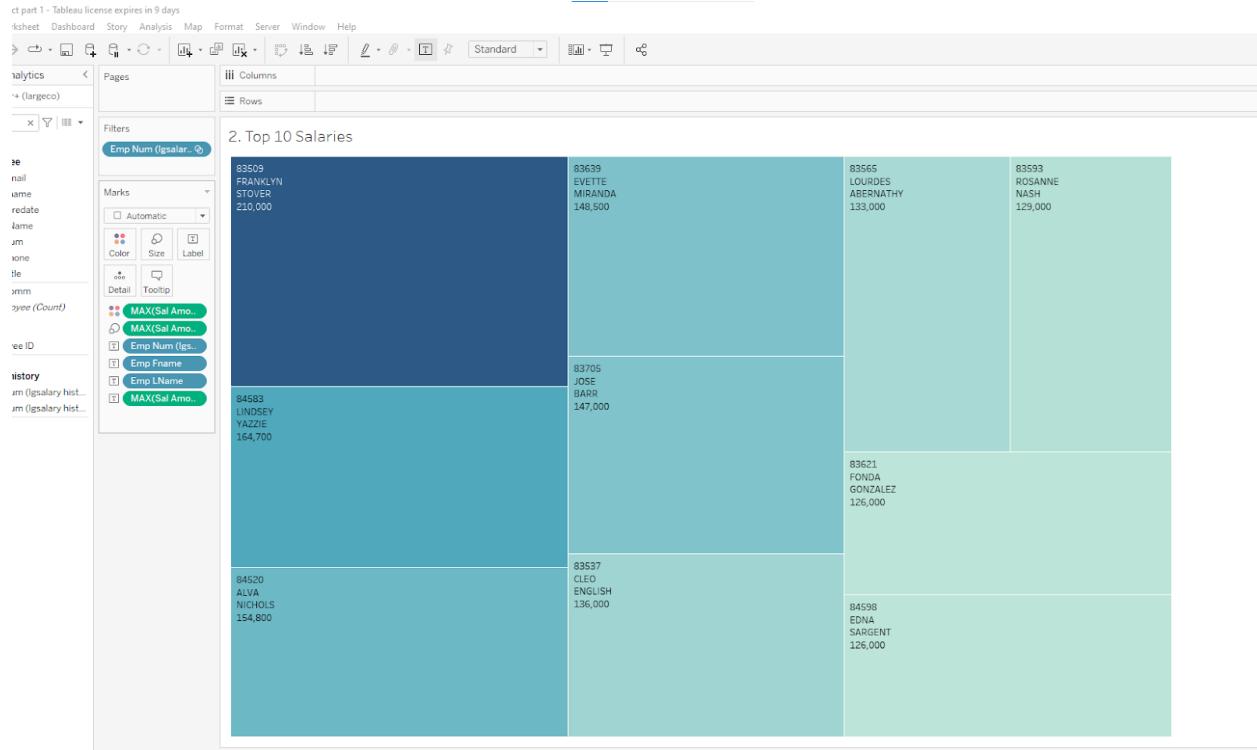


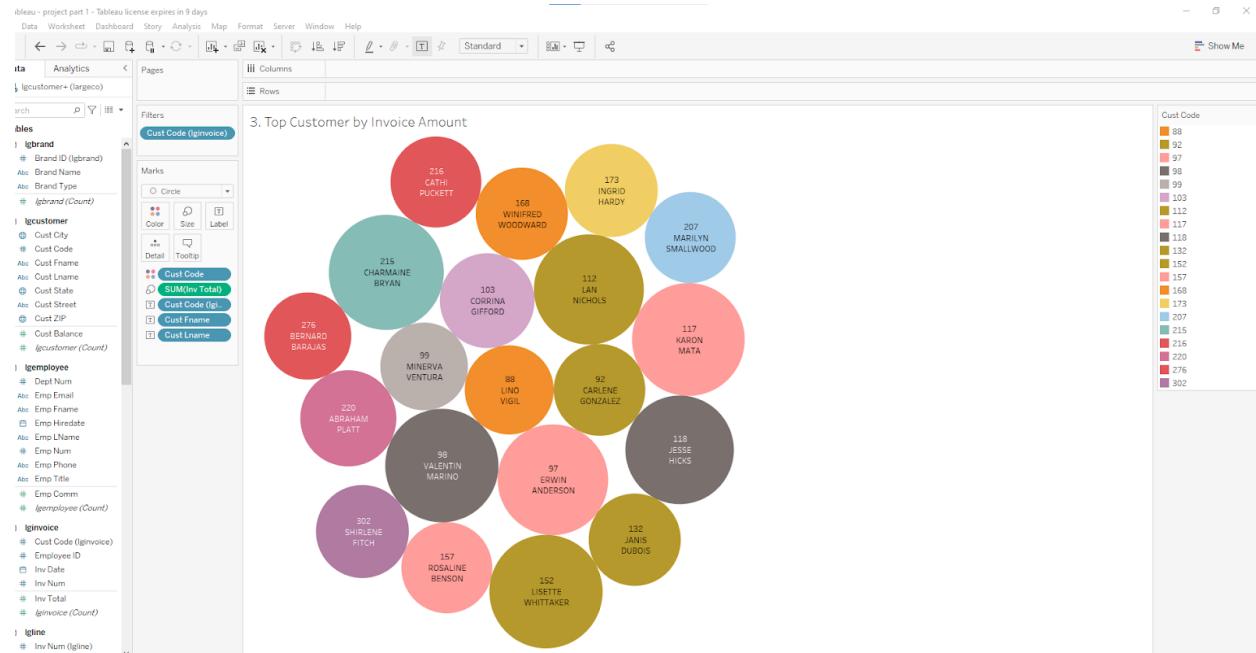
1. Displays which employee wrote the most number of invoice



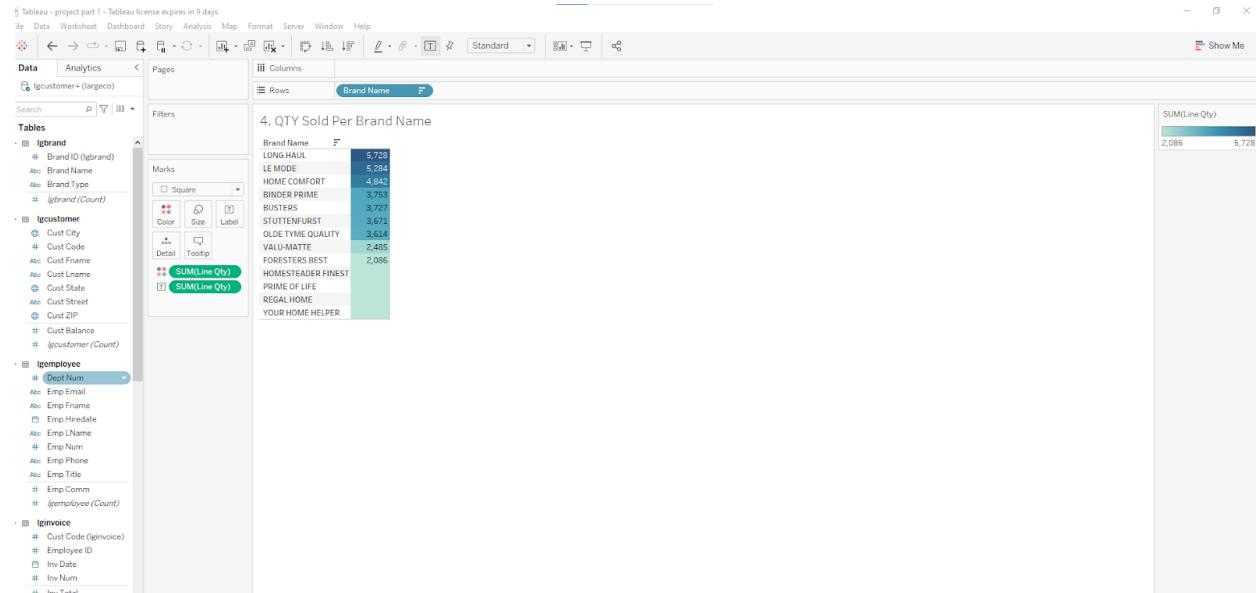
2. Shows the top 10 employee salaries



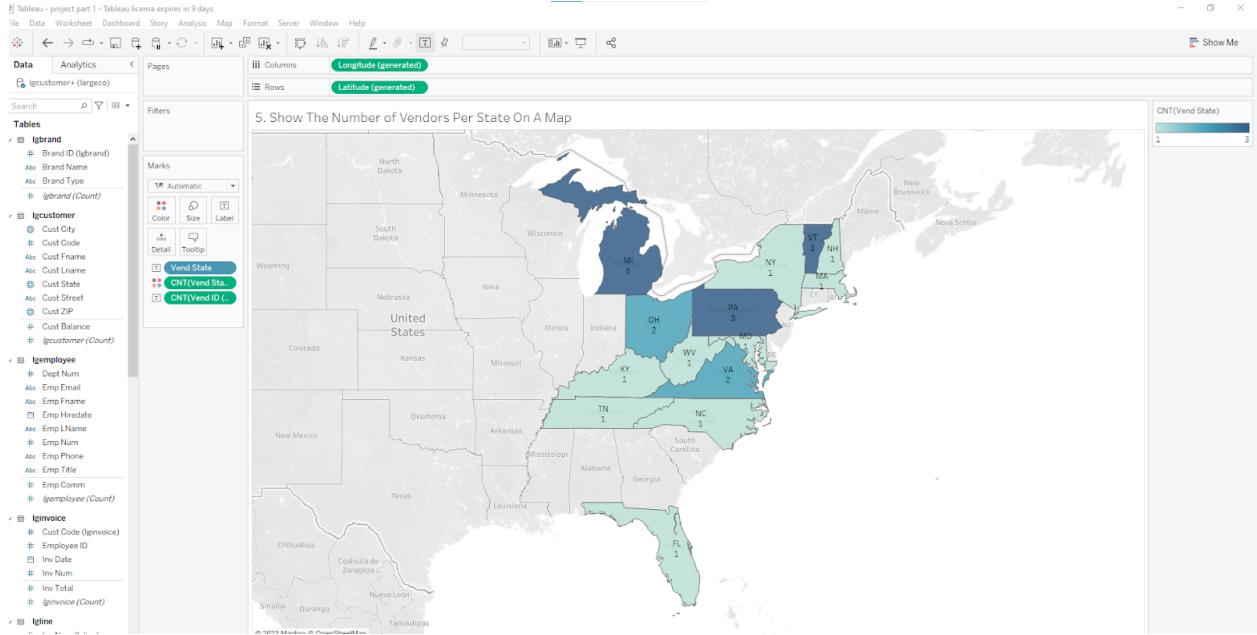
3. Top 20 customers by their invoice totals



4. Display brand names in descending order of quantity or products sold



5. Show the number of vendors per state on a map



Part 2 (Insert SQL statement and Screenshot)

Query 1: (Question: is my order by right formatting? Can I do EMP_LNAME, EMP_FNAME instead?)

```
select EMP_FNAME, EMP_LNAME, EMP_EMAIL  
from lgemployee  
where Emp_Hiredate BETWEEN '2003-01-01' AND '2012-12-31'  
order by EMP_LNAME asc, EMP_FNAME asc;
```

Result:

```

2
3 • select EMP_FNAME, EMP_LNAME, EMP_EMAIL
4   from lgemployee
5   where Emp_Hiredate BETWEEN '2003-01-01' AND '2012-12-31'
6   order by EMP_LNAME asc, EMP_FNAME asc;
7

```

EMP_FNAME	EMP_LNAME	EMP_EMAIL
IRENA	BURKETT	I.BURKET9@LGCOMPANY.COM
AARON	CARROLL	A.CARROL8@LGCOMPANY.COM
KASEY	CASH	K.CASH0@LGCOMPANY.COM
DOUG	CAUDILL	C.DOUGL@LGCOMPANY.COM
LUCIO	CAUDILL	L.CAUDIL4@LGCOMPANY.COM

Action Output

#	Time	Action	Message	Duration / Fetch
1	21:56:40	use largeco	0 row(s) affected	0.032 sec
2	22:04:05	select * from lgemployee LIMIT 0, 1000	363 row(s) returned	0.015 sec / 0.000 sec
3	22:06:48	select EMP_FNAME, EMP_LNAME, EMP_EMAIL from lgemployee where Emp_Hire...	0 row(s) returned	0.031 sec / 0.000 sec
4	22:06:59	select EMP_FNAME, EMP_LNAME, EMP_EMAIL from lgemployee where Emp_Hire...	0 row(s) returned	0.032 sec / 0.000 sec
5	22:12:51	select EMP_FNAME, EMP_LNAME, EMP_EMAIL from lgemployee where Emp_Hire...	94 row(s) returned	0.032 sec / 0.000 sec
6	22:13:13	select EMP_FNAME, EMP_LNAME, EMP_EMAIL from lgemployee where Emp_Hire...	94 row(s) returned	0.016 sec / 0.000 sec

Query 2:

```

select Emp_Fname, Emp_Lname, emp_phone, emp_title, Dept_num
from lgemployee
where Dept_num like '300' or Emp_title like 'CLERK I'
order by emp_Lname asc, emp_Fname asc;

```

Result:

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	Emp_Fname	Emp_Lname	emp_phone	emp_title	Dept_num
▶	LAVINA	ACEVEDO	862-6787	ASSOCIATE	300
	LAUREN	AVERY	550-2270	SENIOR ASSOCIATE	300
	ROSALBA	BAKER	632-8197	ASSOCIATE	300
	FERN	CARPENTER	735-4820	PURCHASING SPECIALIST	300
	LEEANN	CLINTON	616-9615	CLERK I	600
	TANIKA	CRANE	449-6336	PURCHASING SPECIALIST	300
	SAMMY	DIGGS	525-2101	SENIOR ASSOCIATE	300
	LANA	DOWDY	471-8795	SENIOR ASSOCIATE	300
	STEPHAINA	DUNLAP	618-8203	BUYER - RAW MATERIALS	300
	HAL	FISHER	676-3662	SENIOR ASSOCIATE	300
	LINDSAY	GOOD	337-9570	CLERK I	600
	LEEANN	HORN	828-4361	SENIOR ASSOCIATE	300
	MERLE	JAMISON	750-7714	PURCHASING SPECIALIST	300
	DELFINA	JUDD	873-1963	ASSOCIATE	300
	TRACIE	KELLY	731-4210	PURCHASING SPECIALIST	300
	WILLA	MAXWELL	509-6396	ASSOCIATE	300
	DENNA	MCGRAW	619-6848	CLERK I	600

Query 3:

```
select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END,
SAL_AMOUNT
from lgemployee e, lgsalary_history s
where e.Emp_Num = s.Emp_Num AND (e.Emp_Num = 83731 OR e.Emp_Num = 83745 OR
e.Emp_Num = 84039)
order by e.Emp_Num asc, Sal_From asc;
```

Result:

```

-- Query 3:
10 • select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL_AMOUNT
   from lgemployee e, lgsalary_history s
  where e.Emp_Num = s.Emp_Num AND (e.Emp_Num = 83731 OR e.Emp_Num = 83745 OR e.Emp_Num = 84039)
  order by e.Emp_Num asc, Sal_From asc;
14

```

EMP_NUM	EMP_LNAME	EMP_FNAME	SAL_FROM	SAL_END	SAL_AMOUNT
83731	VARGAS	SHERON	2008-07-15	2009-07-14	43740.00
83731	VARGAS	SHERON	2009-07-14	2010-07-13	48110.00
83731	VARGAS	SHERON	2010-07-14	2011-07-14	49550.00
83731	VARGAS	SHERON	2011-07-15	HIRE	51040.00
83745	SPICER	DWAIN	2005-08-02	2006-08-01	56020.00

Action Output

#	Time	Action	Message	Duration / Fetch
9	22:28:44	select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL...	4 row(s) returned	0.016 sec / 0.000 sec
10	22:29:14	select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL...	0 row(s) returned	0.016 sec / 0.000 sec
11	22:29:32	select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL...	1000 row(s) returned	0.047 sec / 0.000 sec
12	22:32:59	select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL...	Error Code: 1241. Operand should contain 1 column(s)	0.015 sec
13	22:34:08	select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL...	1000 row(s) returned	0.062 sec / 0.000 sec
14	22:34:56	select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL...	15 row(s) returned	0.015 sec / 0.000 sec

Query 4:

```

Select e.emp_num, emp_lname, emp_email, emp_title, dept_name
from lgemployee e
left join lgdepartment d
on e.dept_num = d.dept_num
where emp_title like '%Associate'
order by dept_name asc, emp_title asc;

```

Result:

Result Grid | Filter Rows: Export: Wrap Cell Content:

	emp_num	emp_lname	emp_email	emp_title	dept_name
▶	83378	DUNHAM	F.DUNHAM5@LGCOMPANY.COM	ASSOCIATE	ACCOUNTING
	83517	ALBRIGHT	S0.ALBRI96@LGCOMPANY.COM	ASSOCIATE	ACCOUNTING
	83583	ROLLINS	M.ROLLIN99@LGCOMPANY.COM	ASSOCIATE	ACCOUNTING
	83661	FINN	D.FINN87@LGCOMPANY.COM	ASSOCIATE	ACCOUNTING
	84386	RIVERA	D.RIVERA76@LGCOMPANY.COM	ASSOCIATE	ACCOUNTING
	84526	LASSITER	F.LASSIT8@LGCOMPANY.COM	ASSOCIATE	ACCOUNTING
	83341	CORTEZ	C.CORTEZ85@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83415	WHALEN	C.WHALENS@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83451	ELLIS	R.ELLIS81@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83465	TRUJILLO	H.TRUJIL10@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83534	NADEAU	B.NADEAU2@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83545	TAYLOR	J.TAYLOR86@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83555	SPEARS	L.SPEARS82@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83721	EASON	K.EASON99@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83728	KERNS	S.KERNS83@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83758	DELEON	O.DELEON0@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	83824	BOUCHARD	P.BOUCHA95@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE
	84007	DETROS	I.DETROS91@LGCOMPANY.COM	ASSOCIATE	CUSTOMER SERVICE

Result 18 ×

Query 5:

```
select PROD_CATEGORY, count(*) as NUMPRODUCTS
from lgproduct
where PROD_BASE = "Water"
group by PROD_CATEGORY
order by PROD_CATEGORY asc;
```

Result:

The screenshot shows the MySQL Workbench interface. The title bar indicates "MySQL Workbench" and "ITP 249 MySQL Server x MySQL Model (LargeCo.mwb) x". The menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, Help. The toolbar has icons for New, Open, Save, Print, Copy, Paste, Find, Replace, and others. The left sidebar has a "Navigator" section with "SCHEMAS" expanded, showing tables like lgbrand, lgcustomer, lgdepartment, lgemployee, lginvoice, lgline, lgproduct, lgsalary_history, lgsupplier, lgvendor. Below it are "Administration" and "Schemas" tabs, and a message "No object selected". The main area has tabs "Project 1 - Part 2 x", "HW6", "Lecture 7", and "Lecture 6 -". A query editor window displays the following SQL code:

```

16 • select PROD_CATEGORY, count(*) as NUMPRODUCTS
  from lgproduct
  where PROD_BASE = "Water"
  group by PROD_CATEGORY
  order by PROD_CATEGORY asc;
  
```

The "Result Grid" shows the following data:

PROD_CATEGORY	NUMPRODUCTS
Cleaner	2
Filler	2
Primer	16
Sealer	1
Top Coat	81

The "Output" pane shows the execution history:

#	Action	Time	Message	Duration / Fetch
14	select e.EMP_NUM, EMP_LNAME, EMP_FNAME, SAL_FROM, SAL_END, SAL...	22:34:56	15 row(s) returned	0.015 sec / 0.000 sec
15	select PROD_CATEGORY, PROD_QOH as NUMPRODUCTS from lgproduct whe...	22:58:48	252 row(s) returned	0.031 sec / 0.000 sec
16	select PROD_CATEGORY, PROD_QOH as NUMPRODUCTS from lgproduct whe...	22:59:21	252 row(s) returned	0.016 sec / 0.000 sec
17	select PROD_CATEGORY, PROD_QOH as NUMPRODUCTS from lgproduct whe...	22:59:37	5 row(s) returned	0.031 sec / 0.000 sec
18	select * from lgproduct LIMIT 0, 1000	23:00:03	252 row(s) returned	0.016 sec / 0.000 sec
19	select PROD_CATEGORY, count(*) as NUMPRODUCTS from lgproduct where P...	23:01:54	5 row(s) returned	0.015 sec / 0.000 sec

The status bar at the bottom shows "SQL script saved to 'C:\Users\junhyu\Documents\ITP249\Project 1 - Part 2.sql'" and system information like "54°F", "11:03 sec", "US", "4/4/2023", and a battery icon.

Query 6:

```
Select prod_base, prod_type, count(*)  
From lgproduct  
group by prod_base, prod_type;
```

Result:

Result Grid						Filter Rows:	<input type="text"/>
	prod_base	prod_type	count(*)				
▶	Water	Interior	63				
	Water	Exterior	39				
	Solvent	Exterior	67				
	Solvent	Interior	83				

Query 7:

```
select b.BRAND_ID, BRAND_NAME, round(avg(PROD_PRICE),2) as AVGPRICE  
from lgbrand b, lgproduct p  
where b.BRAND_ID = p.BRAND_ID  
group by b.BRAND_ID  
order by b.BRAND_NAME asc;
```

Result:

```

24 • select b.BRAND_ID, BRAND_NAME, round(avg(PROD_PRICE),2) as AVGPRICE
25   from lgbrand b, lgproduct p
26   where b.BRAND_ID = p.BRAND_ID
27   group by b.BRAND_ID
28   order by b.BRAND_NAME asc
29

```

BRAND_ID	BRAND_NAME	AVGPRICE
33	BINDER PRIME	16.12
29	BUSTERS	22.59
23	FORESTER'S BEST	20.94
27	HOME COMFORT	21.80
35	LE MODE	19.22

Action Output

#	Time	Action	Message	Duration / Fetch
19	23:01:54	select PROD_CATEGORY, count(*) as NUMPRODUCTS from lgproduct where P...	5 row(s) returned	0.015 sec / 0.000 sec
20	00:10:16	select BRAND_ID, BRAND_NAME, avg(PROD_PRICE) as AVGPRICE from lgbran...	Error Code: 1052. Column 'BRAND_ID' in field list is ambiguous	0.016 sec
21	00:10:30	select b.BRAND_ID, BRAND_NAME, avg(PROD_PRICE) as AVGPRICE from lgbr...	1 row(s) returned	0.015 sec / 0.000 sec
22	00:10:49	select b.BRAND_ID, BRAND_NAME, avg(PROD_PRICE) as AVGPRICE from lgbr...	9 row(s) returned	0.016 sec / 0.000 sec
23	00:11:46	select b.BRAND_ID, BRAND_NAME, avg(PROD_PRICE) as AVGPRICE from lgbr...	9 row(s) returned	0.031 sec / 0.000 sec
24	00:13:47	select b.BRAND_ID, BRAND_NAME, round(avg(PROD_PRICE),2) as AVGPRICE f...	9 row(s) returned	0.031 sec / 0.000 sec

Query 8:

```

select dept_num,max(emp_Hiredate)
from lgemployee
group by dept_num
order by dept_num;

```

Result:

	dept_num	max(emp_Hiredate)
▶	200	2003-06-08
	250	2013-12-15
	280	2012-04-16
	300	2012-12-12
	400	2013-01-26
	500	2013-04-26
	550	2013-10-22
	600	2013-10-02

Query 9:

```

select d.DEPARTMENT_NUM, DEPARTMENT_NAME, DEPARTMENT_PHONE, d.EMPLOYEE_NUM, EMPLOYEE_LNAME
from lgdepartment d, lgemployee e
where d.EMPLOYEE_NUM = e.EMPLOYEE_NUM

```

```
group by DEPT_NUM  
order by DEPT_NAME asc;
```

Result:

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar has a Navigator section showing Schemas (jyang629, largeco, salesco) and Administration. The main area displays a query editor with the following SQL code:

```
31 • select d.DEPT_NUM, DEPT_NAME, DEPT_PHONE, d.EMP_NUM, EMP_LNAME  
32 from lgdepartment d, lgemployee e  
33 where d.EMP_NUM = e.EMP_NUM  
34 group by DEPT_NUM  
35 order by DEPT_NAME asc;  
36
```

Below the code is a Result Grid showing the following data:

DEPT_NUM	DEPT_NAME	DEPT_PHONE	EMP_NUM	EMP_LNAME
600	ACCOUNTING	555-2333	84583	YAZZIE
250	CUSTOMER SERVICE	555-5555	84001	FARMER
500	DISTRIBUTION	555-3624	84052	FORD
280	MARKETING	555-8500	84042	PETIT
300	PURCHASING	555-4873	83749	RANKIN
200	SALES	555-2824	83509	STOVER

The bottom pane shows the Output log with the following entries:

#	Time	Action	Message	Duration / Fetch
2	16:09:41	select d.DEPT_NUM, DEPT_NAME, DEPT_PHONE, d.EMP_NUM, EMP_LNAME...	Error Code: 1046. No database selected. Select the default DB to be used by double quotes.	0.000 sec
3	16:09:52	use largeco	0 row(s) affected	0.000 sec
4	16:10:00	select d.DEPT_NUM, DEPT_NAME, DEPT_PHONE, d.EMP_NUM, EMP_LNAME...	363 row(s) returned	0.016 sec / 0.000 sec
5	16:10:18	select d.DEPT_NUM, DEPT_NAME, DEPT_PHONE, d.EMP_NUM, EMP_LNAME...	8 row(s) returned	0.000 sec / 0.000 sec
6	16:10:39	select d.DEPT_NUM, DEPT_NAME, DEPT_PHONE, d.EMP_NUM, EMP_LNAME...	8 row(s) returned	0.015 sec / 0.000 sec
7	16:11:00	select d.DEPT_NUM, DEPT_NAME, DEPT_PHONE, d.EMP_NUM, EMP_LNAME...	8 row(s) returned	0.016 sec / 0.000 sec

Query 10: (Largest Average)

```
select round(avg(prod_price),2) as LARGEST_AVERAGE  
from lgproduct  
group by brand_id  
order by LARGEST_AVERAGE desc  
Limit 1;
```

Result:

```

44 • select round(avg(prod_price),2) as LARGEST_AVERAGE
45   from lgproduct
46   group by brand_id
47   order by LARGEST_AVERAGE desc
48   limit 1;
49

```

Result Grid | Filter Rows: [] Export: [] Wrap Cell Content: [] Fetch rows: []

LARGEST_AVERAGE
22.59

Action Output

#	Time	Action	Message	Duration / Fetch
1	12:14:51	select round(avg(prod_price),2) as LARGEST_AVERAGE from lgproduct group by bra...	Error Code: 1046. No database selected Select the default DB to be used by double...	0.031 sec
2	12:14:56	use largeco	0 row(s) affected	0.016 sec
3	12:15:03	select round(avg(prod_price),2) as LARGEST_AVERAGE from lgproduct group by bra...	Error Code: 1054. Unknown column 'Avg_Price' in 'order clause'	0.016 sec
4	12:15:19	select round(avg(prod_price),2) as LARGEST_AVERAGE from lgproduct group by bra...	1 row(s) returned	0.031 sec / 0.000 sec

Query 11:

```

select lgbrand.BRAND_ID, BRAND_NAME, BRAND_TYPE, round(avg(Prod_Price),2) as
AVGPRICE
from lgbrand JOIN lgproduct ON lgbrand.BRAND_ID = lgproduct.BRAND_ID
group by lgbrand.BRAND_ID
order by AVGPRICE desc LIMIT 1;

```

Result:

The screenshot shows the MySQL Workbench interface. In the top navigation bar, the connection is set to 'ITP 249 MySQL Server'. The main area displays a query in 'Query 1' tab:

```

37 -- Query 11:
38 • select lgbrand.BRAND_ID, BRAND_NAME, BRAND_TYPE, round(avg(Prod_Price),2) as AVGPRICE
39 from lgbrand JOIN lgproduct ON lgbrand.BRAND_ID = lgproduct.BRAND_ID
40 group by lgbrand.BRAND_ID
41 order by AVGPRICE desc LIMIT 1;
42

```

The result grid shows the following data:

BRAND_ID	BRAND_NAME	BRAND_TYPE	AVGPRICE
29	BUSTERS	VALUE	22.59

In the bottom right corner of the interface, there is a note: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

Query 12:

```

SELECT concat(manager.emp_fname, ' ', manager.emp_lname) as MANAGERNNAME,
d.DEPT_NAME, d.DEPT_PHONE,
concat(e.EMP_FNAME, ' ', e.EMP_LNAME) as EMPLOYEEENAME,
concat(c.Cust_fname, ' ', c.Cust_lname) as CUSTOMERNAME,
INV_DATE, INV_TOTAL
FROM lgemployee manager, lgemployee e, lgdepartment d, lginvoice i, lgcustomer c
WHERE d.emp_num = e.emp_num
AND d.dept_num = manager.dept_num
AND i.cust_code = c.cust_code
AND manager.emp_num = i.employee_id
AND inv_date like '2013-05-18'
HAVING CUSTOMERNAME LIKE '%Hagan';

```

Result:

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator: jyang629

Query 1 HW6 Project 1 - Part 2*

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Schemas

- jyang629
- largeco
 - Tables
 - Igbrand
 - Igcustomer
 - Igdepartment
 - Igemployee
 - Iginvoice
 - Igline
 - Igproduct
 - Igsalary_history

Administration Schemas Information

Table: lgemployee

Columns:

Emp_Num	int(11) PK
Emp_Fname	varchar(45)
Emp_LName	varchar(45)
Emp_Email	varchar(45)
Emp_Phone	varchar(45)
Emp_Hiredate	date
Emp_Title	varchar(45)
Emp_Comm	decimal(5,2)
Dept_Num	int(11)

Object Info Session

Type here to search

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid

```

72 FROM lgemployee manager, lgemployee e, lgdepartment d, lginvoice i, lgcustomer c
73 WHERE d.emp_num = e.emp_num
74 AND d.dept_num = manager.dept_num
75 AND i.cust_code = c.cust_code
76 AND manager.emp_num = i.employee_id
77 AND inv_date like '2013-05-18'
78 HAVING CUSTOMERNAME IN TVF '%taan';
    
```

Result Grid

MANAGERNAME	DEPT_NAME	DEPT_PHONE	EMPLOYEENAME	CUSTOMERNAME	INV_DATE	INV_TOTAL
THURMAN WILKINSON	SALES	555-2824	FRANKLYN STOVER	DARELL HAGAN	2013-05-18	315.04

Result 8

Action Output

#	Time	Action	Message	Duration / Fetch
12	13:04:36	select concat(e.emp_fname, ' ', e.emp_lname) as MANAGERNAME, DEPT_NAME, ...	Error Code: 1054. Unknown column 'CUSTOMERNAME' in 'where clause'	0.016 sec
13	13:04:45	select concat(e.emp_fname, ' ', e.emp_lname) as MANAGERNAME, DEPT_NAME, ...	Error Code: 1054. Unknown column 'CUSTOMERNAME' in 'where clause'	0.032 sec
14	13:05:10	select concat(e.emp_fname, ' ', e.emp_lname) as MANAGERNAME, DEPT_NAME, ...	0 row(s) returned	0.015 sec / 0.000 sec
15	13:05:16	select concat(e.emp_fname, ' ', e.emp_lname) as MANAGERNAME, DEPT_NAME, ...	0 row(s) returned	0.016 sec / 0.000 sec
16	13:05:20	select concat(e.emp_fname, ' ', e.emp_lname) as MANAGERNAME, DEPT_NAME, ...	33 row(s) returned	0.015 sec / 0.000 sec
17	13:31:34	SELECT concat(manager.emp_fname, ' ', manager.emp_lname) as MANAGERNA...	1 row(s) returned	0.031 sec / 0.000 sec

Output:

Result Grid

Read Only Context Help Snippets

68°F ENG 1:31 PM US 4/9/2023