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a.

MySQL Workbench interface showing a query execution. The left sidebar displays the database schema with the 'ingredient' table selected. The main editor shows a SQL query: `select count(*) from ingredient;`. The 'Result Grid' shows a single row with the value 9. The 'Output' pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
221	12:01:55	INSERT INTO 'ingredient' VALUES (21,'Pork', 1.44, 'Meat'), (23, 'Chicken', 1.65, ...	9 row(s) affected Records: 9 Duplicates: 0 Warnings: 0	0.016 sec
222	12:01:55	INSERT INTO 'recipe' VALUES (1, 21, 10), (2, 23, 60), (2, 24, 30), (3, 21, 60), (4, 23, 6...	14 row(s) affected Records: 14 Duplicates: 0 Warnings: 0	0.000 sec
223	13:02:07	select * from ingredient LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
224	13:02:43	select count(*) from ingredient LIMIT 0, 1000	1 row(s) returned	0.016 sec / 0.000 sec

b.

MySQL Workbench interface showing a complex query execution. The left sidebar displays the database schema with the 'recipe' table selected. The main editor shows a SQL query: `select f.fid, f.fname from ingredient i1 inner join recipe r1 on i1.iid = r1.iid inner join food f on f.fid = r1.fid inner join recipe r2 on f.fid = r2.fid inner join ingredient i2 on i2.iid = r2.iid and i1.iname = "Green Onion" and i2.iname = "Beef";`. The 'Result Grid' shows a single row with the values 6 and Mongolian Beef. The 'Output' pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
278	14:30:49	select f.fid, f.fname, count(i.iid) as count_ingredients, sum(i.amount) as total_am...	6 row(s) returned	0.047 sec / 0.000 sec
279	14:32:43	select i.iid, i.iname from ingredient i left join recipe r on i.iid = r.iid where r.fid is nu...	1 row(s) returned	0.016 sec / 0.000 sec
280	14:33:51	select f.fid, f.fname from food f inner join recipe r on f.fid = r.fid inner join ingredie...	2 row(s) returned	0.000 sec / 0.000 sec
281	14:35:27	select f.fid, f.fname from ingredient i1 inner join recipe r1 on i1.iid = r1.iid inner joi...	1 row(s) returned	0.000 sec / 0.000 sec

c.

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' panel with a tree view of the database structure, including tables like 'recipe' and 'ingredient'. The main editor window contains a SQL query:

```

12  i1.iname = "Green Onion" and i2.iname = "Beef";
13
14  -- c
15  select i.iid, i.iname
16  from ingredient i left join recipe r
17  on i.iid = r.iid
18  where r.fid is null
19  order by i.iid asc;

```

The 'Result Grid' shows the output of the query, displaying a single row with the following data:

id	iname
34	Green Pepper

The 'Action Output' panel at the bottom shows the execution log, including the time taken for each query and the number of rows returned.

d.

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' panel with a tree view of the database structure, including tables like 'recipe' and 'ingredient'. The main editor window contains a SQL query:

```

21  -- d
22  select f.fid, f.fname, count(r.iid) as count_ingredients, sum(r.amount) as total_amount
23  from food f inner join recipe r on f.fid = r.fid
24  group by f.fid
25  order by count_ingredients desc;
26
27  -- e
28  select f.fid, f.fname, i.iid, i.iname, cast(r.amount * i.caloriepergram as float) as calories
29  from food f inner join recipe r on f.fid = r.fid

```

The 'Result Grid' shows the output of the query, displaying a table with the following data:

fid	fname	count_ingredients	total_amount
1	Fried Rice	3	16
5	Fried Noodle	3	266
6	Mongolian Beef	3	68
2	Orange Chicken	2	90
4	BBQ Chicken	2	7
3	BBQ Pork	1	60

The 'Action Output' panel at the bottom shows the execution log, including the time taken for each query and the number of rows returned.

e.

MySQL Workbench interface showing a query in the 'Query' tab. The query is as follows:

```
-- e
27
28 select f.fid, f.fname, i.iid, i.iname, cast(r.amount * i.caloriepergram as float) as calories
29 from food f inner join recipe r on f.fid = r.fid
30 inner join ingredient i on i.iid = r.iid
31 where r.fid in
32 (select r.fid from recipe r inner join ingredient i on r.iid = i.iid where i.iname = "Chicken")
33 order by f.fid asc;
34
35 -- f
36 select f.fid, f.fname
37 from food f inner join recipe r on f.fid = r.fid
```

The 'Result Grid' shows the following data:

fid	fname	iid	iname	calories
2	Orange Chicken	23	Chicken	98.99999856948853
2	Orange Chicken	24	Orange	14.099999964237213
4	BBQ Chicken	23	Chicken	9.899999856948853
4	BBQ Chicken	32	Clantro	0.10000000149011612
5	Fried Noodle	23	Chicken	329.9999952316284
5	Fried Noodle	28	Green Onion	6.0000000089406967
5	Fried Noodle	29	Egg Noodle	12

The 'Table: recipe' information is shown on the left:

Columns:

- fid: int PK
- iid: int PK
- amount: int

The 'Action Output' shows 1 row(s) returned.

f.

MySQL Workbench interface showing a query in the 'Query' tab. The query is as follows:

```
-- f
35
36 select f.fid, f.fname
37 from food f inner join recipe r on f.fid = r.fid
38 inner join ingredient i on i.iid = r.iid
39 where i.category = "Vegetable"
40 group by f.fid
41 having count(i.category) = 2 and sum(r.amount) > 5
42 order by f.fid desc;
43
44
```

The 'Result Grid' shows the following data:

fid	fname
6	Mongolian Beef
1	Fried Rice

The 'Table: recipe' information is shown on the left:

Columns:

- fid: int PK
- iid: int PK
- amount: int

The 'Action Output' shows 7 row(s) returned.