1、分组查询

- group by
- 统计每个订单的平均价格?

```
mysql> select order_num, AVG(item_price) from orderitems GROUP BY order_num;
+-----------+-----------------+
| order_num | AVG(item_price) |
+-----------+-----------------+
|     20005 |        8.995000 |
|     20006 |       55.000000 |
|     20007 |       10.000000 |
|     20008 |        2.500000 |
|     20009 |        9.617500 |
|     20010 |       14.990000 |
|     20011 |       14.990000 |
+-----------+-----------------+
7 rows in set (0.00 sec)
```

- 统计每个订单的总价格?

```
mysql> select order_num, sum(item_price) from orderitems group by order_num;
+-----------+-----------------+
| order_num | avg(item_price) |
+-----------+-----------------+
|     20005 |        8.995000 |
|     20006 |       55.000000 |
|     20007 |       10.000000 |
|     20008 |        2.500000 |
|     20009 |        9.617500 |
|     20010 |       14.990000 |
|     20011 |       14.990000 |
+-----------+-----------------+
7 rows in set (0.00 sec)
```

2、实例

- 统计每个客户的订单数量?

```
mysql> select cust_id, count(*) from orders group by cust_id;
+---------+----------+
| cust_id | count(*) |
+---------+----------+
|   10001 |        4 |
|   10003 |        1 |
|   10004 |        1 |
|   10005 |        1 |
+---------+----------+
4 rows in set (0.00 sec)
```

- 统计每个订单中买了几种产品?

```
mysql> select order_num,count(*) from orderitems group by order_num;
+-----------+----------+
| order_num | count(*) |
+-----------+----------+
|     20005 |        4 |
|     20006 |        1 |
|     20007 |        1 |
|     20008 |        1 |
|     20009 |        4 |
|     20010 |        1 |
|     20011 |        1 |
+-----------+----------+
7 rows in set (0.00 sec)
```

- 统计每个订单中最贵的产品价格和最便宜的价格?
- 以多个分组的语法

```
mysql> select order_num, max(item_price), min(item_price) from orderitems group by order_num;
+-----------+-----------------+----------------+
| order_num | max(item_price) | min(item_price) |
+-----------+-----------------+----------------+
|     20005 |           10.00 |           5.99 |
|     20006 |           55.00 |          55.00 |
|     20007 |           10.00 |          10.00 |
|     20008 |            2.50 |           2.50 |
|     20009 |           14.99 |           4.49 |
|     20010 |           14.99 |          14.99 |
|     20011 |           14.99 |          14.99 |
+-----------+-----------------+----------------+
7 rows in set (0.00 sec)
```

- 课堂练习
  - 统计2005年每月的订单数量?

```
mysql> select month(order_date),count(*) from orders where year(order_date)='2005' group by month(order_date) ;
+-------------------+----------+
| month(order_date) | count(*) |
+-------------------+----------+
|                 9 |        3 |
|                10 |        4 |
+-------------------+----------+
2 rows in set (0.00 sec)
```

  - 统计2005年每个客户的订单数量?

```
mysql> select cust_id,count(order_num) from orders where year(order_date)='2005' group by cust_id;
+---------+------------------+
| cust_id | count(order_num) |
+---------+------------------+
|   10001 |                4 |
|   10003 |                1 |
|   10004 |                1 |
|   10005 |                1 |
+---------+------------------+
4 rows in set (0.00 sec)
```

3、分组过滤

- having
- 实例
  - 统计购买了两种以上价格大于5的产品的订单编号及购买的产品种数

```
mysql> select order_num, count(*) from orderitems where item_price>2 group by order_num having count(*) > 2;
+-----------+----------+
| order_num | count(*) |
+-----------+----------+
|     20005 |        4 |
|     20009 |        4 |
+-----------+----------+
2 rows in set (0.00 sec)


mysql>
```

    - 统计供应了3种以上价格大于5的产品的供应商编号、产品数量、产品平均单价?

```
mysql> select vend_id,count(*), avg(prod_price) from products where prod_price>5 group by vend_id having count(*)>3;
+---------+----------+-----------------+
| vend_id | count(*) | avg(prod_price) |
+---------+----------+-----------------+
|    1003 |        4 |       20.750000 |
+---------+----------+-----------------+
1 row in set (0.00 sec)


mysql>
```

  - 统计购买了两种以上价格大于5的产品的订单编号及购买的产品种数，按数量升序排列?

```
mysql> select order_num, count(*) from orderitems where item_price>2 group by order_num having count(*) > 2 order by count(*) asc;
+-----------+----------+
| order_num | count(*) |
+-----------+----------+
|     20005 |        4 |
|     20009 |        4 |
+-----------+----------+
2 rows in set (0.00 sec)


mysql>
```

4、select查询中子句的执行顺序

- select
- from
- where
- group by
- having
- order by
- limit

子句	说明	是否必须使用
select	要返回的列或表达式	是
from	从中检索数据的表	仅在从表选择数据时使用
join	连表查询关键字	否，仅在连表查询时用
on	连表查询关键字	否，仅在连表查询时用
where	行级过滤	否
group by	分组说明	仅在按组计算聚集时使用
having	组级过滤	否
order by	输出排序顺序	否
limit	要检索的行数	否
