PROBLEM F
WORM WATCHER

Swamp County Cable, which has a cable modem ISP operation, wants to get an idea of how often its customers are getting probed or attacked by hackers or worms. To get a handle on this, it has reserved a part of its IP address space, which has never been assigned to anyone, to watch in detail.

Your job is to convert the router accounting summary records for these addresses into an hour−by−hour count of attacks.

Here are some sample accounting records:

```
0830.19:29:57.65    61.121.70.13    2328    64.12.197.2      80    6
171
0830.19:30:40.709  131.91.143.40     3191 64.12.197.145    80    6      3
0830.19:31:21.629   200.56.110.205    3043 64.12.197.189    80    6
1
0830.19:30:40.705  131.91.143.40     3191 64.12.197.145     80    6
168
```

The fields are:

Field Number	Contents	Format
1	date−time	mmdd.hh:mm:sec
2	source IP address	dotted decimal number
3	source port	decimal number [0..65535]
4	destination IP address	dotted decimal number
5	destination port	decimal number [0..65535]
6	protocol	decimal number [0..255]
7	number of packets	decimal number [1..65535]

The fields are separated by one or more blanks.

A dotted decimal number is a 32 bit value, high order byte first, with a decimal representation of each 8−bit byte [0..255], each separated by a period (.). For example, 1.2.255.15 is 0102FF0F in hexadecimal.

The date−time field consists of a 2 digit month [01..12], a 2 digit day [01..31], a period (.), a 2 digit hour [00..23], a colon (:), a 2 digit minute [00−59], a colon (:), and a seconds field [0..59.999].

What is of interest is the number of unique source IP addresses seen in each hour. An hour lasts from, for example, 01:00:0 until 01:59:59.999. Of course during some hours, no entries may appear if there is a major outage or if no attacks occur during that hour. In this case, don’t print anything for that hour.

The records are almost sorted by the date−time field. A record will never be more than 5 minutes earlier than the latest record seen before.

From time to time there are attacks with forged source IP addresses that will result in thousands of unique source addresses in any given hour. If the count of unique source addresses exceeds 500 in any given hour, you will just indicate that it is greater than 500, rather than the exact count.

Input

Input is a series of test cases. Each test case consists of accounting records, each at most 100 characters in length. Each test case is ended by a blank line or end of file. There will never be more than 10 days in a test case.

Input for this problem will be from the text file **F.in**

Output

Output will be one line for each hour, with data from the earliest time to the latest time of any record in the test case. The line has 3 fields: date; hour; count. The date is of the form dd−mmm where dd is the 2 digit day [01..31] with a leading 0 if necessary and mmm is a 3 character lower case abbreviation for the month [jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, dec]. Put exactly one blank after the date field. The hour is a 2 digit hour [00..23] with a leading 0 if necessary. Put exactly one blank after the hour field. The count field is the count of unique source IP addresses seen during that hour, left adjusted, with no leading 0 or trailing spaces. If the count is greater than 500, print ">500" for the count. Skip one line between test cases.

Sample Input:

```
0830.19:29:57.65    61.121.70.13    2328    62.225.197.2       80    6
171
0830.19:30:40.709  131.91.143.40     3191 62.225.197.145    80    6
3
0830.19:31:21.629   200.56.110.205    3043 62.225.197.189     80    6
1
0830.19:30:40.705  131.91.143.40     3191 62.225.197.145     80    6
168

0830.19:30:40.709  131.91.143.40     3191 62.225.197.145    80    6
3
0830.19:31:21.629   200.56.110.205    3043 62.225.197.189     80    6
1
0830.19:30:40.705  131.91.143.40     3191 62.225.197.145     80    6
168

1231.22:30:40.709  131.91.143.40     3191 62.225.197.145    80    6
3
0101.00:00:00.629   200.56.110.205    3043 62.225.197.189     80    6
1
1231.23:59:40.705  131.91.143.40     3191 62.225.197.145     80    6
168
0101.02:04:00.629   200.56.110.205    3043 62.225.197.19     80    6
1
0101.02:01:05.0   200.56.110.205    3043 62.225.197.18     80    6       1
0101.02:08:13.48   200.14.13.220    3043 62.225.197.189    80    6
1

0723.00:20:26.526 62.14.165.180     2409 62.225.197.204     53   17
19
0723.00:26:53.143 64.174.246.90     3914 62.225.197.72      80    6
3
0723.00:26:53.147 64.174.246.90     3914 62.225.197.72      80    6
171
0723.01:38:00.477 213.174.70.225       0 62.225.197.15    2816    1
1
0723.01:38:00.473 213.174.70.225       0 62.225.197.15    2816    1
118
0723.01:42:15.386 210.77.158.1         0 62.225.197.0     2816    1
1
0723.01:49:58.120 172.185.107.238      1 62.225.197.113  62331    6
20
0723.01:49:58.120 172.185.107.238      1 62.225.197.113  62331    6
1
0723.01:51:02.169 210.184.94.33        1 62.225.197.29   50386    6
1
```

```
0723.01:51:02.173 210.184.94.33        1 62.225.197.29   50386    6
120
0723.01:56:05.938 213.174.70.225       0 62.225.197.15    2816    1
118
0723.01:56:05.938 213.174.70.225       0 62.225.197.15    2816    1
1
0723.02:03:57.652 172.176.163.61       1 62.225.197.33   19146    6
1
0723.02:03:57.656 172.176.163.61       1 62.225.197.33   19146    6
19
0723.02:25:35.771 172.185.107.238      1 62.225.197.111  21414    6
19
```

Sample Output:

```
30-aug 19 3

30-aug 19 2

31-dec 22 1
31-dec 23 1
01-jan 00 1
01-jan 02 2

23-jul 00 2
23-jul 01 4
23-jul 02 2
```